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# The Croonian Lectures

ON

# THE DEGENERATION OF THE NEURONE.

*Delivered before the Royal College of Physicians of London on June 19th, 21st, 26th, and 28th, 1900,*

BY FREDERICK W. MOTT, M.D. LOND., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN-IN-CHARGE OF OUT-PATIENTS, CHARING-CROSS HOSPITAL.

## LECTURE III.[1]

*Delivered on June 26th, 1900.*

### THE CHEMISTRY OF DEGENERATION AND ITS RELATION TO AUTO-INTOXICATION.

MR. PRESIDENT AND GENTLEMEN,—Osmic acid has long been known to have the property of staining fat (including myelin) black, but owing to difficulty in penetration it could not be made use of for studying the degeneration of the central nervous system in the same way as the peripheral, although Exner[2] was enabled to show by this method the existence of fine medullated fibres (tangential system and supra-radial) in the grey matter of the cerebral cortex, and Tuczek applied this method and demonstrated the important fact that atrophy of the tangential fibres of the frontal and central convolutions was the earliest and most constant morbid change in dementia paralytica. I have had the opportunity of confirming this observation in at least 50 cases by the Marchi-Pal method. This degeneration does not appear to be peculiar to general paralysis, as similar atrophy may occur in other diseases of the cerebrum associated with dementia, as, for example, in alcoholic and epileptic dementia; it does not, however, exist in purely efferent systemic degeneration—e.g., amyotrophic lateral sclerosis—although in this disease, as I shall show, the whole motor efferent system of neurones from cortex to peripheral muscle is degenerated.

### THE VALUE OF THE MARCHI METHOD.

About ten years ago Marchi introduced his method of staining degenerated nerve fibres, using it for the purpose of demonstrating the degenerations which followed experimental ablations of the cerebellum performed by Luciani, and the most striking results were obtained. By this method Marchi showed a descending cerebellar system in the antero-lateral column of the same side as the half of the cerebellum that had been removed. Russell, Ferrier, and Turner have, however, shown that this tract does not proceed direct from the cerebellum but through a relay in Deiter's nucleus. It is now the method adopted by all investigators for determining the path, not only of tracts of fibres, but of actual individual fibres, in the central nervous system. It has, in the hands of numerous investigators, served to demonstrate accurately the course and termination of nervous paths. There are a few fallacies in connexion with it for the inexperienced, but if care be taken to avoid these no method is so delicate or so reliable. By this method I was able to trace the course of the fibres of Gowers's tract, which I showed to consist of three sets of fibres; one, the more numerous, terminating in the middle lobe of the cerebellum after looping over the fifth nerve and running down on the surface of the superior cerebellar peduncle; another set terminating in the corpora quadrigemina; and the third, few in number, joining with the fillet fibres and ending in the optic thalamus. By this method single fibres can be followed in their course along the whole cerebro-spinal axis, from the cortex to the lumbar sacral region when they are efferent, and from the lumbar sacral region to the optic thalamus when they are afferent. I was unable to find any evidence for the existence of a cortical fillet described by Flechsig after cutting off the posterior column nuclei in monkeys and tracing the degeneration upwards, all the fillet fibres terminating in the optic thalamus.

### THE CHEMISTRY OF THE MARCHI METHOD IN RELATION TO DEGENERATION.

In working with the Marchi method I was struck by the fact that in the neighbourhood of a lesion vessels could often be seen with phagocytes containing black-stained particles in their sheaths. These were undoubtedly carrying away the products of degeneration. I also found that muscles which had undergone fatty degeneration reacted to the Marchi stain—that is to say, pieces of muscle which had been hardened in Müller's fluid, like pieces of the degenerated central nervous system, when placed in the Marchi fluid for from 10 to 14 days (one part of 1 per cent. of osmic acid and two parts of Müller's fluid), revealed fatty degeneration by the fat particles being stained black. I had long before noticed that the fat particles in degenerated muscle were stained by the hæmotoxylon when the Weigert or Weigert-Pal method of colouration was used; therefore, I came to the conclusion that a non-phosphoretted fat, the result of degeneration of proteid, would be stained by either of these methods. Putting this fact by the side of another—viz., that degenerating nerves of the central nervous system stained by the Weigert or Weigert-Pal method appear uniformly blue throughout, whereas in a transection of the normal nerve-fibres only a ring of myelin stains blue, the central axon being unstained—the conclusion is that the proteid of the axon has degenerated and become converted into a fatty substance; but it is otherwise, as I shall now show, with the Marchi method, which really depends for the success of the reaction on the differential staining of the phosphoretted fat contained in the myelin (protagon) from ordinary (non-phosphoretted), such as olein, palmitin, stearin, &c. In sections of a normal nervous tissue stained by the Marchi method the nerve-fibres in transection present the following appearances: the central axial core is unstained, the ring of myelin is stained a greenish ash-grey colour, and degenerated fibres are stained black throughout, so that no differentiation can be seen between the myelin sheath and the axial core. It might be said that this was due to the

FIG. 1.

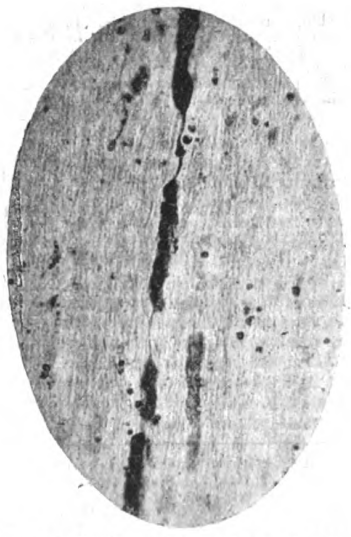

Photo-micrograph showing degenerated nerve fibre in a longitudinal section of the spinal cord ten days after experimental lesion. In places the thin axial core can be seen stained black. The greater part of it, however, is covered up by the degenerated myelin sheath, also stained black.

axial core having broken up and its place being occupied by the degenerated myelin, but I have observed in longitudinal sections of nervous tissue showing degeneration in the earliest stages the axis-cylinder stained black, as well as the myelin (Fig. 1). Neumann and

[1] Lectures I. and II. were published in THE LANCET of June 23rd and 30th, 1900, respectively.

[2] Exner's method is as follows. Small pieces of brain, one cubic centimetre in size, are placed in 1 per cent. of osmic acid for from five to ten days, cut in alcohol with a wet knife, after sticking on cork with shellac. The sections, which must be very thin, are mounted in glycerine. If they are allowed to remain in alcohol they spoil. They are best transferred on a section lifter in a drop of strongly ammoniated water. The preparation should be examined at once. The essential in this process is the use of the ammonia, whereby the neuro-keratin supporting structure is swollen up into a homogeneous mass. The finest fibres of the cortical layers are demonstrated remarkably well by this method.



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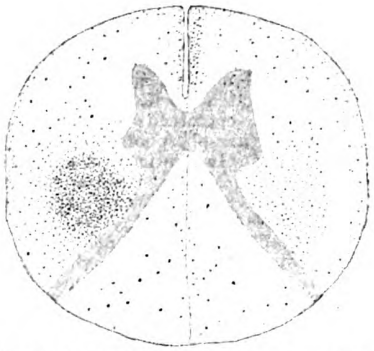
Eichorst contend that during degeneration of the peripheral end of a cut nerve the medullary sheath and axis cylinder undergo a chemical change of such a nature that structurally and chemically it is not possible to differentiate between the two. Moreover, there are chemical reasons for supporting this view. Examination of numbers of tissues, vegetable and animal, containing, or consisting of, simple non-phosphoretted fats, by the Marchi method showed that these fatty bodies gave the black reaction. I was lead to the conclusion that probably the myelin in the process of degeneration underwent a chemical decomposition by which the complex phosphoretted fat was split up into simpler bodies—viz., glycero-phosphoric acid, stearic acid, and choline; by the taking up of water lecithin would undergo the decomposition as shown[3]:—

$$\underset{\text{lecithin,}}{C_{44}H_{90}NPO_3} + \underset{\text{water,}}{3H_2O} = \underset{\text{stearic acid,}}{2C_{18}H_{36}O_2} + \underset{\text{glycero-phosphoric acid,}}{C_3H_9PO_6} + \underset{\text{cholin.}}{C_5H_{15}NO_2}$$

To prove this I took the spinal cord from a case of right hemiplegia of 21 days' duration, the result of thrombosis of the middle cerebral artery, and divided it longitudinally into as nearly as possible equal halves, reserving a small portion for microscopical examination by the Marchi method. The two halves of the cord were dried in a sulphuric acid exsiccator and it was found that the right half lost the most in weight by this process. Both halves were then dried at 100° C. and extracted in a Soxhlet's ether apparatus

FIG. 2.



Section of first cervical segment of the spinal cord from a case of hæmorrhage into the upper part of the pons on one side, causing left hemiplegia. It will be observed that there is scattered degeneration in the homolateral pyramidal tract and also in the direct tract, but there is a very marked degeneration in the left crossed pyramidal tract. The patient died at the end of 14 days. The result of the chemical examination of the two halves of the cord is given below. Left side: ether extract, 42·1 per cent.; calculated as lecithin, 18·9 per cent.; other extractives, 23·2 per cent.; residue, 57·9 per cent.; phosphorus in ether extract, 1·72 per cent.; phosphorus in residue, 0·92 per cent.; and phosphorus in half-cord, 1·19 per cent. Right side: ether extract, 38·9 per cent.; calculated as lecithin, 22·2 per cent.; other extractives, 16·7 per cent.; residue, 61·1 per cent.; phosphorus in ether extract, 2·14 per cent.; phosphorus in residue, 0·97 per cent.; and phosphorus in half-cord, 1·38 per cent. For details of the estimation see "Archives of Neurology," p. 346.

so that all the fatty matter was extracted. It was found that on the degenerated side the ether extract appeared like butter, whereas on the non-degenerated side it was more crystalline in appearance. The degenerated right side yielded a larger proportion *pro rata* of fatty matter than the left (Fig. 2), but the phosphorus (the details of the estimation of which are given fully in the paper with Dr. J. W. Barrett) which was obtained from the right half was less than the left. The conclusion, therefore, was that the phosphoretted fat (lecithin) had broken up in the way I have mentioned; this result I have stated in my article on the Pathology of Nutrition in the first volume of Clifford Allbutt's "System of Medicine." I have since examined another cord with the same results and two others in conjunction with Dr. J. W. Barrett. The results of these examinations are given in the first volume of the *Archives of Neurology*. Some of the increase of the fat cannot, however, be accounted for by the decomposition of the lecithin; it therefore probably comes from the degeneration of the proteid of the axis-cylinder process which we have seen to give the black fat staining reaction.

### THE POSSIBILITY OF DEGENERATION CAUSING AUTO-INTOXICATION.

While examining a case of acute general paralysis with numerous epileptiform seizures I was struck by the fact that the peri-vascular lymphatic sheaths of many of the vessels were filled with cells staining black like the Marchi reaction and I came to the conclusion that very probably in this disease a decomposition of the myelin of the proteid matter of the nervous system occurred incidental to the degenerative process and that the cerebro-spinal fluid, and possibly also the blood, would yield some of the products of degeneration, and perhaps the presence of such might account for some of the symptoms which occur in this disease (*vide* Fig. 3). On account of the laboratory

FIG. 3.

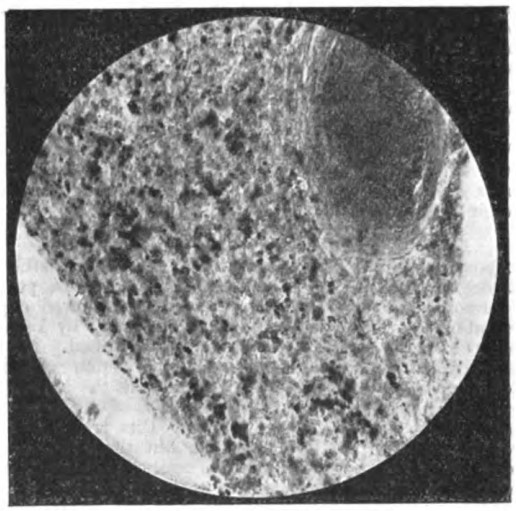


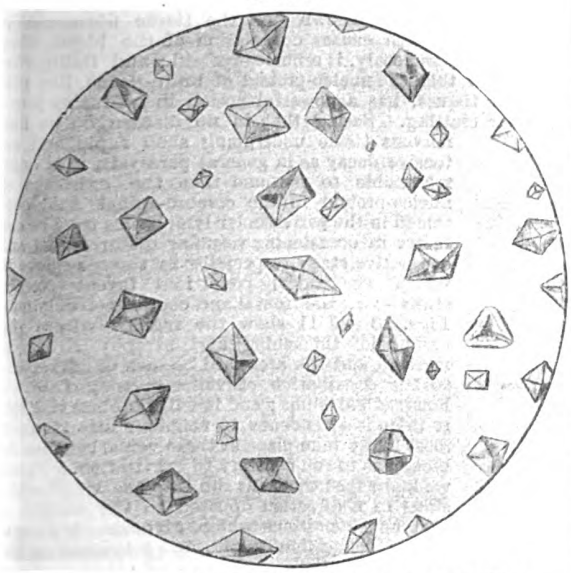
Photo-micrograph of a small vein from a case of acute general paralysis running towards the cortex with a lateral branch cut transversely, and dark in appearance on account of the contained congested blood. The section was stained by Marchi method and the whole of the external wall of the vein is seen covered with cells stained black by the fat contained in them taking up the osmic acid. Magnification 350 diameters. ("Archives of Neurology," p. 275.)

of the London County Asylums not being licensed for experiments I was fortunate enough to obtain the coöperation of my friend Professor W. D. Halliburton who was good enough to associate himself with me and conduct a series of experimental inquiries relating to this subject, a full account of which has been published in the Philosophical Transactions of the Royal Society. At first it was thought that choline only existed in the cerebro-spinal fluid and blood of patients who were suffering from general paralysis of the insane. This was no doubt due to the fact that in this disease choline was easily detected both chemically and physiologically, because in no other affection of the nervous system is there such a rapid and widespread degenerative process affecting the nervous system, but subsequent observations have shown that practically in any degenerative process affecting the nervous system if extensive enough choline can be detected in the blood, although normally it

[3] Liebreich and Diakonow considered that protagon was a mixture of lecithin and cerebrin, but numerous researches by Gamgee, Blankenhorn, Baumstark, Kossel, Freytag, and Ruppel have shown that protagon is a single chemical substance without, however, its precise constitution being determinable. Noll in an interesting paper refers to these researches and describes a method for the quantitative estimation of protagon. By this method he was enabled to show that protagon rapidly diminished in quantity in degenerating nerves and finally completely disappeared. He made comparative quantitative estimations of the two sciatic nerves after cutting the nerves on one side in dogs and horses. The protagon diminished in quantity until on the twenty-eighth day it had completely disappeared. In one case he examined the central ends of the sciatic nerves and found a considerable diminution on the side of section. He also performed an experiment relating to phosphorus, and his results, he states, are in agreement with ours with regard to the splitting up of lecithin.

does not exist in sufficient quantities to be recognisable. Thus it was found in two cases of combined sclerosis and in two cases of beri-beri where the disease had been of sufficient duration to give the Marchi reaction in the nerves; but in another case, in which the patient had died in the early stage from heart failure, there was no evidence of choline. This led to further researches and it was found that as soon as the myelin began to undergo decomposition in the peripheral portion of the experimentally cut sciatic nerves that the blood of the animals so operated upon gave the physiological and chemical reactions indicating the presence of choline. These facts show that my original surmise was true, that the protagon splits up into simpler bodies with elimination of choline. Many observers have found that extract of brain matter gave a physiological reaction similar to that of choline—namely, upon injection of a solution of an alcoholic extract of brain matter a fall in the blood-pressure was produced. This was noticed by Schäfer and Oliver, Swale Vincent, and Halliburton. The latter two have continued these researches, but arrive at somewhat different conclusions; it appears, however, to me that Halliburton is right in assuming that the effect produced is due to the existence of choline, for he finds that brain extract, like choline after injection of atropine, produces a rise instead of a fall of blood-pressure (*vide* Fig. 9). Again, the alcoholic extract of fresh brain-tissue yields the characteristic octahedral crystals which choline forms with platinum chloride (*vide* Figs. 4 and 5). In consideration of this fact we must conclude that choline is continually being formed as a normal product of lecithin metabolism and is continually escaping into the cerebro-spinal fluid which drains into the sub-arachnoid cavity and carries away the waste products of this metabolism. This view was put forward by Professor Gumprecht at the recent congress at Wiesbaden. Although it is probable that choline is continually escaping into the cerebro-spinal fluid, either it must disappear very rapidly by absorption of the fluid or it must be in very small quantities, for normal cerebro-spinal fluid did not give the physiological or chemical

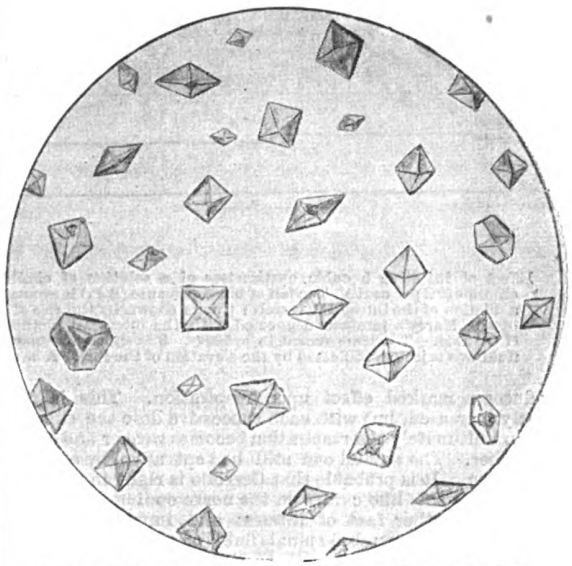
FIG. 4.



Crystals of the platinum double salt of choline crystallised from 15 per cent. alcohol.

reaction indicating the presence of choline. Gurlewitz, Schäfer, and others corroborate this statement. Hunt, in a recent paper, finds choline existing in the suprarenal gland. I have often thought it possible that one function of the suprarenal capsule, which Schäfer and Oliver in their valuable experiments proved to possess a powerful stimulating action upon the peripheral neuro-muscular mechanism of the arteries, is to produce a substance which will neutralise the influence of blood-pressure-lowering substances. Choline is not found in the urine, it is therefore probably oxidised into urea; it belongs to the same trimethylamine series of bodies as muscarine, neurine, and betaine, but it is not a powerful toxic substance, whereas neurine is. Many of the contradictory results which have been obtained as regards the toxic effects of choline are due to impure materials containing neurine having been used. Neurine, which is very much more poisonous than choline, has certain specific poisonous properties and acts especially upon the respiratory centre. In general paralysis and other diseases where a large amount of nervous tissue is undergoing degeneration choline may exist in sufficient quantities in the cerebro-spinal fluid taken from the cadaver soon after death, or even from the living subject by lumbar puncture, to give well-marked physiological and

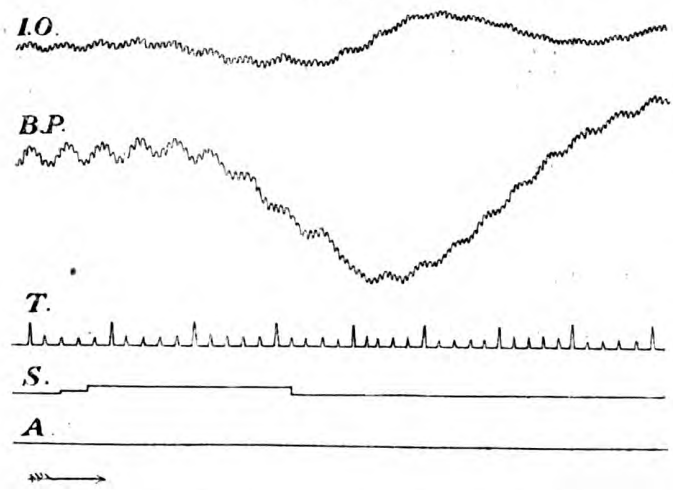
FIG. 5.



Crystals of the platinum double salt of the base separated from cerebro-spinal fluid in cases of general paralysis of the insane. Crystallised from 15 per cent. alcohol.

chemical reactions indicating its presence. Two specimens by lumbar puncture were kindly forwarded to us by Dr. J. Turner of the Essex County Asylum. It was also found in the blood taken for the purpose of treatment from patients suffering from prolonged seizures in general paralysis and from cases of beri-beri with right heart failure and asphyxia, and in the blood of other cases, such as combined sclerosis, experimental section of the sciatic nerves, &c. We may therefore assume the premiss that choline is a product of nerve degeneration, the result of breaking up of protagon or lecithin, that it escapes into the cerebro-spinal fluid, thence into the blood in larger quantities than it can be disposed of by oxidation, and that its accumulation in the blood might produce auto-intoxication. The principal physiological actions of choline were found to agree entirely with the effect produced by the intravenous injection of the cerebro-spinal fluid or the alcoholic extract of the blood (*vide* Figs. 6, 7, 8, and 9) dissolved in normal saline solution obtained from those cases. They are as follows. A fall of arterial blood-pressure, partly due to its action on the heart, but mainly due to the dilatation of the peripheral vessels, especially in the intestinal area (*vide* Figs. 6 and 7). This dilatation could actually be seen to take place through the glass lid of the intestinal oncometer when the solution was injected into the vein or if the intestine were irrigated by directly allowing the fluid to flow into the oncometer. The action on the splanchnic vessels is due to the direct action of the substance on the neuro-muscular apparatus of those vessels, for after the influence of the central nervous system has been removed by the section of the cord or of the splanchnic nerves choline still causes the typical fall of arterial pressure (*vide* Fig. 9). Neurine, a very toxic substance, we did not find in the blood or cerebro-spinal fluid, although it is possible that under certain conditions, such as the existence of micro-organisms, it might be produced. It produces upon intravenous injection first a fall, then a marked rise, and subsequently a fall of blood-pressure to the normal. Neurine

FIG. 6.

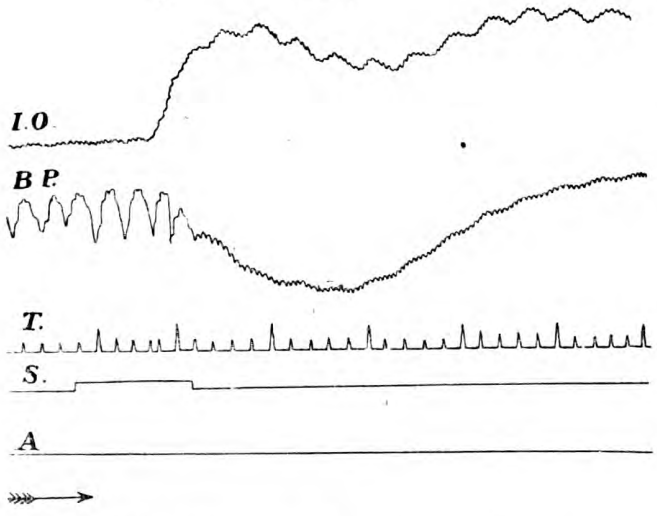



Effect of injecting 5 cubic centimetres of a solution of choline hydrochloride (0·2 per cent.). The fall of blood-pressure (B.P.) is accompanied by a dilation of the intestinal vessels; this is shown by the rise of the lever of the Marey's tambour connected with the intestinal plethysmograph (I.O.) Dog. T = time record in seconds. S = signal to show when the fluid was injected, indicated by the elevation of the line. A = abscissa.

produces a marked effect upon respiration. This is first greatly increased, but with each successive dose the effect is less and ultimately the respiration becomes weaker and ceases altogether. The animal can still be kept alive by artificial respiration. It is probable that Cervello is right in asserting that neurine acts like curare on the nerve-endings of striated muscle. Another fact of interest and importance is the existence in the cerebro-spinal fluid of a relatively large amount of proteid matter—three times as much as normal. Seeing that the cerebro-spinal fluid in the cranial cavity is greatly increased in general paralysis the quantity of proteid matter is very abundant. Examination of this proteid matter showed us that it contained a considerable amount of phosphorus; we were therefore led to believe that there was a nucleo-proteid present not found in normal cerebro-spinal fluid. As a rule we did not use the fluid itself for experimental purposes, but an alcoholic extract dissolved in saline solution, and the quantity injected (from five to ten cubic centimetres) would not contain enough nucleo-proteid to produce intravenous coagulation when diluted by the mass of blood, but in one specimen which contained a larger quantity than usual of proteid ten cubic centimetres of the cerebro-spinal fluid injected into a cat produced death by intravenous coagulation. It is therefore probable that a nucleo-proteid escaping into the cerebro-spinal fluid of the perivascular lymphatics may favour congestive stasis and even coagulation in the veins of the brain in general paralysis especially during the epileptiform seizures, when presumably the nervous tissue is undergoing disintegration. Congestive stasis in the vessels is the rule and not infrequently intravenous coagulation, and thrombosis of the large veins and even of the longitudinal sinus sometimes occurs. Thus the disintegrating nervous tissue, by providing a substance which favours stasis and coagulation, may be the means of setting up a vicious circle whereby, owing to the circulatory disturbances, acute destructive processes of the nervous tissue are brought about. This hypothesis is supported by the fact that most of the nerve-cells in the degenerating tissue of the cortex are devoid of the normal Nissl granules.

Now it has been shown by Held that these Nissl granules are the result of coagulated nucleo-albumin, for sections of nervous tissue hardened by alcohol and treated by artificial gastric juice still show the granules and these stain in a characteristic manner. Moreover, Macallum, by his modification of Lilienfeld and Monti's molybdate method, has micro-chemically demonstrated the existence of abundant phosphorus in these granules; we may therefore conclude that the disappearance of the same from the degenerating cells may be associated with the existence of a nucleo-proteid in the cerebro-spinal fluid. The researches of Halliburton have shown that the tissue fibrinogen of Wooldridge, which causes coagulation of the blood when injected intravenously, is a nucleo-proteid; and Halliburton has shown that the nucleo-proteid of brain-tissue, like that of other tissues, has a powerful action in producing intravascular clotting. Seeing that in no disease do we find nervous tissue undergoing such rapid and extensive decay as in general paralysis, it is quite reasonable to presume that the existence of nucleo-proteid in the cerebro-spinal fluid contained in the perivascular lymphatics may be one factor in occasioning vascular disturbances and congestive stasis, especially in those regions in which mechanical conditions favour venous stasis—viz., the frontal and central convolutions. Figs. 10 and 11 show the regions where pia-arachnoid thickening and atrophy are most marked, and the area will be seen to correspond to the distribution of veins opening into the longitudinal sinus; and it will be observed that if there is a tendency to venous stasis it would most likely take place in these veins, because the blood has to run contrary to gravitation. Again, we know that the veins run into the longitudinal sinus in a direction opposed to the current, so that any conditions which give rise to general venous congestion would make themselves felt especially in the area drained by these particular veins. Of course, it may be argued that the great anastomotic vein of Trollard has an important connexion with the lateral sinus and that this would prevent, in a measure, such mechanical disturbances. Still, look at it as we will, we must consider that the flow of blood in the veins I have indicated is at a mechanical disadvantage compared with that of the other veins which drain directly into the torcula or into the lateral sinus. That venous congestion does play an important part in the production of the congestive, epileptiform, and apoplectiform seizures of general paralysis is shown by the fact that a brisk purge or an enema will

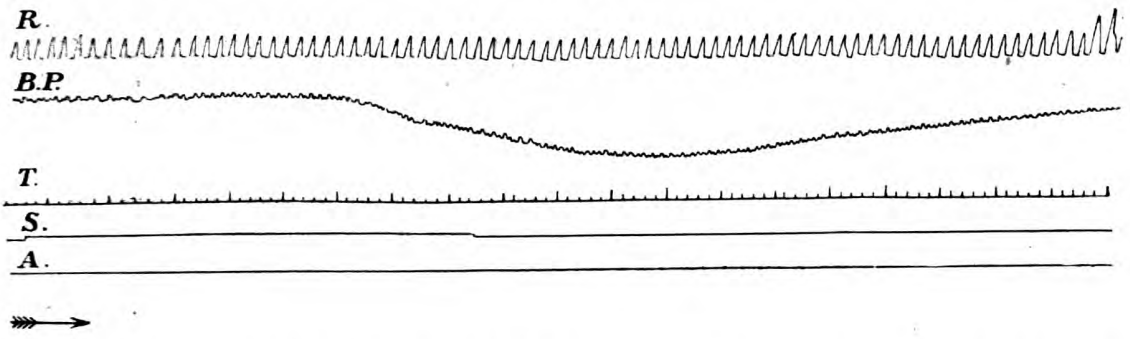
FIG. 7.




Tracing of intestinal oncometer (I.O.) and arterial blood-pressure (B.P.) in a cat. 10 cubic centimetres of cerebro-spinal fluid were injected; the same effect was obtained in the same animal by injecting 2 cubic centimetres of 0·2 per cent. solution of choline; the fall of blood-pressure is at first mainly cardiac in origin, for the oncometer tracing first follows the fall of arterial blood-pressure passively; it, however, soon rises, indicating dilatation of the peripheral vessels.

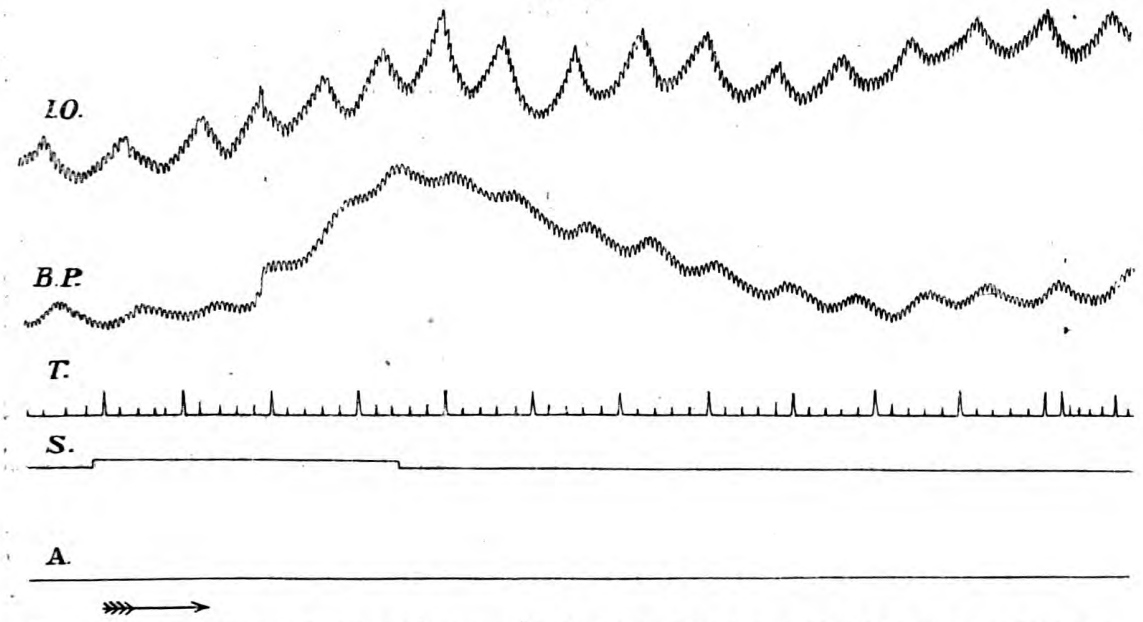
often prevent or cut short these seizures, presumably by relieving portal congestion and general venous turgescence. If, as we have seen, choline has the property of dilating the intestinal vessels in such a marked manner, it is possible to conceive that it may cause portal congestion and thus act as a factor in the production of venous stasis. The effect produced experimentally was only transitory because the quantity of choline introduced was rapidly diluted by the mass of blood, and probably oxidised also; yet when the whole mass of blood contains this substance in appreciable quantity continuously it means the possibility of constant toxic effect; therefore, although choline can hardly be regarded as a dangerous toxic substance, still, under certain circumstances it may serve as an additional factor in the production of complications in this disease.

FIG. 8.




Effect in a dog of saline solution of the alcoholic extract of 70 cubic centimetres of blood removed during a seizure from a patient suffering from general paralysis of the insane. There is no effect on respiration (R.), but there is a well-marked fall of blood-pressure (B.P.). In the same blood choline was identified chemically.

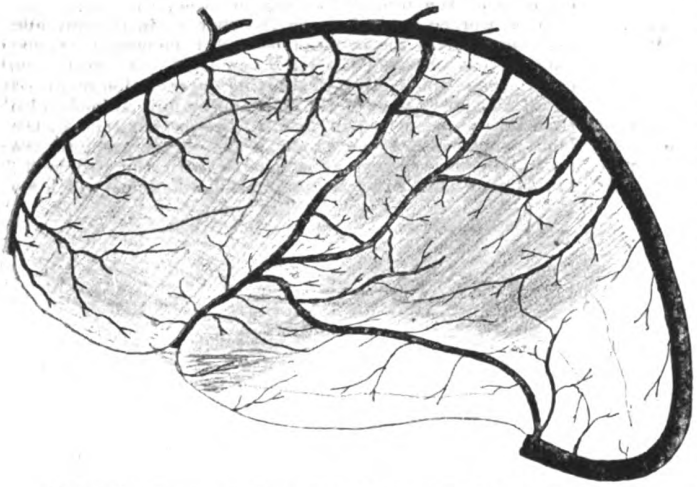
FIG. 9.




Injection of 5 cubic centimetres of pathological cerebro-spinal fluid in an animal anæsthetised with A.C.E. mixture, but which subsequently received an injection of atropine. It will be observed that now instead of producing a fall choline causes a rise of blood-pressure. The same effect is produced by the injection of 5 cubic centimetres of a 0·2 per cent. solution of choline hydrochloride.

The Marchi reaction applied to the central and peripheral nervous systems shows rather different results; one striking difference is the comparatively rapid disappearance of the products of degeneration in peripheral nerves as compared with the central nervous system. For example, if the posterior spinal ganglia be removed and the animal kept alive for months no traces of the products of degeneration can be found in the peripheral nerves, whereas in the posterior columns of the spinal cord I have found well-marked evidence of the products of degeneration. Dr. H. Head, who has worked extensively on the changes in the cord and peripheral nerves the result of lesions of the posterior spinal ganglia, has observed the same conditions. From a large experience of this method of studying degeneration produced by all kinds of lesions of the cord and brain in animals, also from disease occurring in man, I have been struck by the long persistence of the products of degeneration in the central nervous system as compared with the peripheral. Is this connected with the anatomical difference which we know to exist between the nerve-fibres in the central nervous system and peripheral—viz., the existence in the latter of a chain of tubular cells of mesoblastic origin, forming the nucleated sheath of Schwann? And, we may ask, do these cells have a phagocytic action upon the products of degeneration, utilising the same for the formation of fresh protoplasm and myelin? and does the peripheral portion of the nerve-fibre depend solely for its nutrition upon the central cell of origin? There is some evidence in favour of the view that nerve regeneration may take place from the periphery, but there is no evidence to show that regeneration of fibres of

FIG. 10.



External and upper surface of hemisphere, showing distribution of veins opening into the longitudinal sinus. The shading shows the usual area of pia arachnoid thickening. A large branch is seen running back into the lateral sinus, connecting it with the great central anastomotic vein. The lateral sinus is diagrammatically represented as continuous with the longitudinal sinus and the torcular is not shown.

the central nervous system (where this sheath is absent) can take place.

### TWO FORMS OF DEGENERATION.

There are two forms of degeneration, but both may react to the Marchi stain. They are as follows:—1. Secondary (Wallerian) degeneration due to interruption of the axon when it is cut off from its cell of origin, as, for example, in a focal transverse lesion of the spinal cord produced by disease or injury. Tracts of fibres which have their cells of origin above the lesion degenerate downwards and are recognised by the black-stained products of degeneration mapped out in definite areas corresponding to definite systems of efferent neurones, while tracts of fibres conducting afferent impulses having their cells of origin below the lesion have a normal appearance. The converse applies to tracts above the lesion—viz., all the afferent tracts which have their cells of origin below the lesion have their limits definitely mapped out by the black-stained products of degeneration, while those with their cells of origin above have a normal appearance. Therefore, secondary degenerations, whether occurring as the result of experiment or disease, may be considered of traumatic origin and arising from conditions outside the neurone very frequently due to vascular occlusion and local softening. 2. Primary degenerations are clinically and pathologically quite different from secondary. They arise as a result of altered conditions of the blood and lymph, due generally to the introduction or generation within the body of poisonous substances, and are insidious in origin, progressive in character, and generally fatal in termination. They are influenced by hereditary or acquired tendency to nervous degeneration, and election of the particular system or systems of neurones not only constitutes definite groups of clinical phenomena, which admit of empirical classification into definite diseases, but also shows that certain poisons have elective affinities for particular systems of neurones; but the election of certain structures may also be determined by occupation and habits which induce stress on some particular system of neurones, or vascular conditions may lead to circulatory disturbances which will determine the appearance of degenerative changes earlier and their more rapid progress in certain parts of the nervous system than in others. In connexion with the latter contributory factor we have already referred to the reason why certain portions of the brain should show more atrophy and degeneration in general paralysis than others. Again, I have found the left hemisphere, which presumably is used more than the right in all right-handed people, is more often atrophied in general paralysis, for the two hemispheres in this disease are seldom of equal weight, and the left hemisphere in two-thirds of these cases weighs less than the right. We know that the speech affection is one of the most characteristic and earliest clinical phenomena of this disease; possibly this difference in the weights may be the result of excessive activity of the left hemisphere while in a process of decay. At the same time, this tendency of the left hemisphere to waste more rapidly than the right might be partly explained on mechanical principles, for venous congestive stasis might take place more easily in the left hemisphere than in the right, owing to the fact that the blood in the internal jugular vein on the right side has a more direct course to the right auricle than the left.

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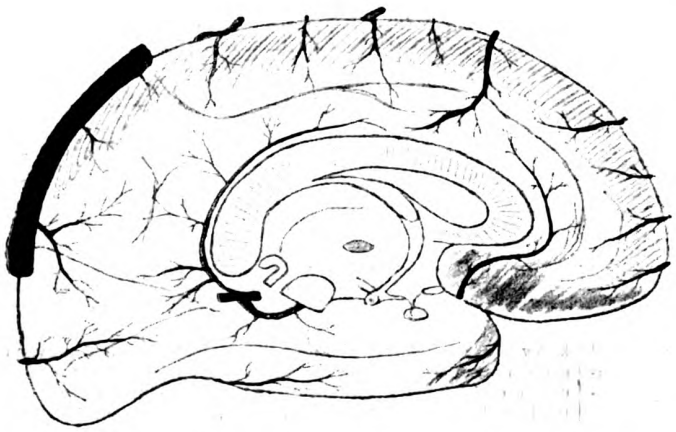
FIG. 11.



Mesial surface of hemisphere, showing the veins opening into the longitudinal sinus draining the upper portions where the thickening of the pia arachnoid occurs. Only a small portion of the longitudinal sinus is represented. These drawings are from Testut modified to show the area of pia arachnoid thickening and its correspondence in great measure with the area drained by veins opening into the longitudinal sinus.

**THE DRAINS OF FURNISHED HOUSES.**—At the Devon Assizes, held on June 26th, before Mr. Justice Kennedy, a lady brought an action against a landlord for damages for breach of an implied warranty to have a house in a sanitary and habitable condition. Counsel for the plaintiff stated that she had taken a furnished house at Exeter; the agreement did not contain any stipulation as to the drains, but when a furnished house was let there was an implied warranty that it was fit for habitation. Eventually some members of the household were attacked with enteric fever and the drains were discovered to be defective. The jury awarded the plaintiff £240 damages.

AN ABSTRACT OF

# The Bowman Lecture

ON

# THE PRESENT STATE OF OUR KNOWLEDGE REGARDING VISUAL SENSATION.

*Delivered before the Ophthalmological Society of the United Kingdom on Friday, June 15th, 1900,*

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SURGEON TO THE ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS, ETC.

MR. PRESIDENT AND GENTLEMEN,—The subject naturally demands several distinct series of observations—first, the nature of the stimulus that excites vision; secondly, the manner in which this stimulus affects sentient cells; thirdly, the path and mode of conduction of the nerve impulse; and fourthly, the ultimate appreciation of the conducted impulse.

I.—First, as to the nature of the stimulus. The expression "ether wave" must not be held necessarily to imply any actual movement in the ether, but rather an influence, a rapid, periodic change of some of its properties, the term "wave" simply meaning a disturbance of definite periodicity in space and time.

From every great centre of energy (the sun being, of course, the most important to us) radiations of energy take place, and pass through space in the form of these ether disturbances. So far as is known all such radiant energy travels at the same rate, and the "waves" occur transversely to the direction of propagation of the force. As to the nature of the vibrations or disturbances in the ether, the view now held is that first suggested by Faraday, and elaborated later by Clark-Maxwell—viz., that they are electro-magnetic. Bodies that are conductors of electricity absorb such radiations rapidly, and are therefore opaque; while those that are transparent to light are insulators. The length of the wave—that is, the interval between the disturbances—varies between many yards and four or five-millionths of an inch; that is, from the Hertzian waves on the one hand to the so-called chemical waves on the other. But all these waves, whatever their length, possess certain familiar physical properties in common; they can all be reflected, refracted, absorbed, and polarised.

The human retina is influenced by a comparatively short part of the entire scale, corresponding to what may be called an "octave"—that is, the shortest visible waves are approximately half the length of the longest—while on either side of these there are several "octaves" of invisible waves either too long or too short to be appreciated in this way. Variations in the length of the waves produce different effects on the retina of many, probably of most, animals, and these effects are instrumental in exciting in man a definite series of colour-sensations.

There is no real distinction between heat and light waves. To quote the words of the late Professor Preston: "It is not that there are two classes of waves, heat waves and light waves, but that we have two senses by which we can distinguish the same waves." The length of the wave corresponding to extreme red (32-millionths of an inch) is equivalent to about one-tenth the diameter of a red blood corpuscle, and that of violet, therefore, about one-twentieth.

II.—The phenomena produced by light in living cells of no visual function may be stated to be: (1) movement of chlorophyll corpuscles, probably associated with protoplasmic currents; (2) chemical activity produced in chlorophyll-containing cells of plants and animals; and (3) contraction of protoplasm. To these we may add (4) phototaxis, which is expressed in two ways—(*a*) the wandering of free cells towards the light and (*b*) the position assumed by the cell, parallel to the axis of the incident ray.

The earliest appearance of what can be called a visual organ is produced by a simple modification of surface epithelium; indeed, all light-sentient cells are modifications of surface epithelial cells, or developed from the same embryonic layer which forms these cells. In every class of the animal kingdom in which true eyes are to be found, examples are presented showing a high ocular development with a correspondingly high type of visual cell.

The general characteristics of such a visual cell are—(1) the end of the cell, corresponding to the cuticle, has a prolongation, usually in the form of a rod; (2) the opposite end of the cell is either directly continued as a conducting fibre, or is connected with a ganglion cell and ultimately with a nerve-fibre; and (3) pigment is present in the light-percipient cell itself, or in a distinct although closely related cell, often in both. It is to be noted that the main deposit of pigment is usually of a brown colour, and that it is situated at the end of the cuticular prolongation furthest removed from the incident light, both in invertebrates and vertebrates.

In the vertebrate retina we have, first, the pigment epithelial cell. This is of comparatively large size so that in man each cell has several end-organs embedded in it. The outer part of the cell is colourless and contains the nucleus. The remainder of the cell-body possesses much pigment, principally in the form of needles or crystals called *fuscin*. From the inner or cuticular surface of the cell arise numerous fine processes which pass inwards for a considerable distance between the end organs; they are colourless or contain pigment according to previous conditions as regards shade or exposure to light. Secondly, the neural or visual epithelial cells are, in most vertebrates, of two kinds, named, from the shape of their outer segments, rods and cones. Each cell is much elongated in a direction perpendicular to the free surface of the retina, and while its outer extremity is more or less deeply embedded in the pigment epithelium, its inner end rests on the internuclear layer. Each may be divided primarily into cell-body and cuticular formation. Under this latter term are probably to be included not only the outer segment, but also the highly refractive outer part (so-called ellipsoid) of the inner segment. The cell-body, traced from the cuticular end, begins as a distinct granular protoplasmic swelling, called the myoid; then (immediately in the case of the cone, after a varying interval in the case of the rod) comes a nucleus or granule. Next, there is a constricted part of the cell known as the fibre, and, finally, the fibre-bulb or enlargement. The relative size of rods and cones varies greatly in different vertebrates, but, where both elements exist, the chief distinctions between them consist in the greater development of the myoid in cones, and in the fact that the outer segment of the rods have, with few exceptions, a uniform reddish colour under ordinary circumstances during life.

We now come to the most important question included in this division of our inquiry—viz., what are the evidences of effect produced on such specialised light-sentient cells by the action of light? Observations on this matter have been mainly conducted on the eyes of vertebrates, and I shall confine my remarks to the effect produced on this most highly developed form of retina. First, in the pigment epithelium, when at rest, the fuscin is collected in a close mass in the body of the cell. When stimulated by light (*a*) the long pigment particles wander forwards, that is, towards the light, and invade the processes which extend between the outer segments, reaching nearly up to the external limiting membrane. This migration seems to be due to, or at any rate associated with, currents in the fluid cell-protoplasm. Marked wandering of the pigment takes place in red light, but the movement is most active towards the violet end of the spectrum and the activity seems, roughly, to be inversely proportional to the wave-length. Once the pigment is in the forward position, it returns to the body of the cell very slowly in the dark. (*b*) Also caused by exposure to light we have swelling of the pigment cell processes, which consequently grasp the outer segments. In this way the retina, over an illuminated area, is made to adhere to the pigment epithelium, forming what has been called an epithelial optogram. (*c*) Yet another effect from light is the alteration in the reaction of the contents of the pigment cell. This seems to be an oxidising process, accompanied by a substitution of an acid for a previously alkaline reaction, and there is reason to believe, from the action of staining fluids, that the change in reaction is communicated to the rods and cones, and that the activity of the chemical change varies in amount according to the wave-length.

In the visual epithelium there are several important changes brought about by exposure to light. 1. The purple of the rods undergoes change of colour wherever

the light falls on the retina, and this action is strictly confined to the illuminated area. The red end of the spectrum has but little effect, and the most active wave-lengths are those that correspond to the yellowish-green, which are the waves chiefly absorbed. Absolute bleaching ultimately takes place, the rapidity of the process depending on the intensity of the light. The purple is slowly restored in darkness if the rods remain in contact with the pigment epithelium, so that the formation of the purple stain is evidently dependent upon some action in the pigment cell, presumably of a secretory nature. 2. Movement of the cone. While a cone protrudes well into the pigment layer when protected from light, it retracts rapidly on exposure, the contraction taking place in the cone-myoid. The shorter wave-lengths act most energetically. It would seem to be an illustration of movement caused in excitable protoplasm by light. Similar but more feeble movements have been described in the rod-myoid due to the same action. 3. Photo-electrical response. It has been conclusively demonstrated that the action of light upon the retina is accompanied by a marked electrical change. The current so induced travels from pigment epithelium to nerve fibre layer, is positive in character, and is ascribed to increased disintegration. On exposing a fresh eyeball to light there is first a very short pause, followed by a rapid rise (or positive deflection); with continued illumination the positive effect increases slowly or remains stationary; and on shutting off the light there is a further short sharp rise, succeeded by a gradual fall to the position of rest. Waller has shown that there is evidence of two antagonistic processes in every such response, one positive, the other negative, the positive effect being dominant in the case of the fresh eyeball, the one possibly an evidence of disintegration, the other of reintegration. Very weak illumination—e.g., moonlight—suffices to produce the electrical variation. It has been repeatedly asserted that the electrical change depends upon the retina proper and is independent of the pigment epithelium. This, however, seems to me to require further investigation; it is difficult to believe in a marked change of this character being produced by light without the presence and participation of the pigment epithelial cells in which there is every reason to think that the light energy is mainly arrested and transformed. According to Dewar and McKendrick white light is the most effective, but on examining with spectrum colours their observations seemed to show that the yellow rays have the greatest power and that there is a gradually diminishing action on either side of the yellow. These observations on the activity of different parts of the spectrum are, however, open to the objection that the difference in response depended on the intensity rather than upon the wave-length. If the electrical change is due to the effect of light on the pigment cell we should presumably have the greatest action from that part of the spectrum that is brightest at very low intensities.

If we now compare the evidences of the effect of light on visual and on certain non-visual cells we find a striking similarity. In both there is a marked stimulation of the cell-protoplasm, combined with chemical activity, and in the case of the visual cell the amount of effect seems capable of measurement by the galvanometer. Since writing this paragraph, Dr. A. D. Waller has brought forward evidence to prove that the light effect upon a fresh leaf is also accompanied by an electrical change, thus completing in a remarkable manner the parallelism here described.

III.—The conduction of the impulse. The simplest example of the conduction of a light effect in an individual is in the case of a unicellular organism such as the *euglena*, where the whole cell responds to the influence communicated to it from without. In the neuro-muscular cells of the *hydra* the irritation is conveyed directly from the free surface to the deeply-lying processes which are in this way stimulated to contract. In the syphon of the *pholas dactylus* the superficial epithelium is pigmented and immediately beneath it there occurs a fine layer of contractile fibres which in turn overlie nerve-cells, and these again are connected with the longitudinal muscle which moves the syphon on exposure to light. Here we have an instance of a photo-chemical change in the pigment cell causing movement of the subjacent contractile tissue, serving as a mechanical irritant of the nerve-cell which occasions the general muscular movement of the syphon. This, of course, is not vision, but it is an effect, apparently purposeful, produced locally by light without any appeal to a central nerve mechanism. The effect required in lower forms of animal life—viz., escape from danger or search for food—may thus be brought about by the local effect of light. Where the body to be protected is large it is necessary to have the sense organ associated with a central nervous mechanism in order to secure protection with the minimum of specialised tissue.

We get a local combination of many light-sensory cells to form a visual apparatus and a union of many ganglion cells to form a central nervous mass. These sensory cells may be situated directly on a small collection of nerve cells, but more frequently in the case of higher forms these are connected by intermediary ganglion cells presumably formed, like the sensory cells, from epithelium, but at a later period. This explanation rests on strong biological evidence and is supported by the developmental changes which occur in the ectodermal cells forming the inner division of the secondary optic vesicle of vertebrates, where a single layer of columnar cells by multiplication is converted into three definite superimposed layers, the outermost constituting the true sensory epithelium, the innermost the large ganglion cells, and the intermediate layer the connecting bipolar ganglion cells, or inner granules. This leads us to inquire how nerve cells are connected with each other.

[The lecturer here described the modern views of the connexion between different nerve cells.]

In the present state of our knowledge as to the nature of a nerve wave it is perhaps not of great importance in attempting to follow its path to know exactly *how* the different nerve cells are brought into physiological relation with one another, so long as we are familiar with the general characteristics and position of the path traversed. The actual nature of the process associated with progress of the nerve current would appear to be most easily explained by supposing that the force, originated for example in the sensory cell, produces a physico-chemical effect on the nearest particle of the associated nerve tissue, this effect being of such a nature that it produces in turn a similar change in the state of the particle next in order, so that the influence is transmitted onwards. The influence produced locally seems to be accompanied by the formation of carbon-dioxide, and the progress of the impulse along the nerve can be traced by a change in the electrical condition known as the "current of action." The process leaves the nerve substance practically in its original condition, the nutrition of the fibre being maintained by its relation with the protoplasm of the associated ganglion cell, aided possibly in the case of long medullated axons, by the cells of the medullary sheath. In altered blood states or inflammatory conditions exhaustion readily occurs and restoration may be extremely slow or deferred indefinitely.

In the visual path, an effect having been produced on the sensory epithelial cell is immediately influential as far as the extreme termination of this cell or fibre-bulb. From this it is communicated to a bipolar ganglion cell (or inner granule) and then to one of the ganglion cells of the ganglion cell layer. Along the axis-cylinder of this cell the impulse passes as far as the external geniculate body, where this axis-cylinder ends, but the nerve wave is passed on to another neurone, the cell-body of which is in this situation, and travels along its axon to have an effect finally upon a nerve-cell of the cortex. Ramòn-y-Cajal believes that there is no direct relation, beyond that of mere contiguity, between the bulb and the outer process of the bipolar cell; that, in fact, the relation of the sensory epithelial cell to the inner granule is exactly similar to what he has described as existing between two ganglion cells elsewhere. Other observers have found distinct evidence of a direct anatomical continuity between these elements. Golgi again, and Dogiel have described a direct connexion between the ganglion and the bipolar cells.

Many rods (more than 20) and several cones may be physiologically connected respectively with single bipolar cells and several bipolar cells with one ganglion cell. This satisfactorily accounts for the relatively large number of rod and cone cells in the retina as compared with the number of fibres in the optic nerve. The cone cells of the fovea appear, however, to be exceptional, in that each has only one bipolar cell and one ganglion cell in relation with it.

What conjecture can we form with regard to the origin of the visual nerve impulse? Though the wave force which excites the retina is electrical the nerve impulse cannot be a mere continuation of it, since an electrical ether wave travels at a rate immeasurably greater than that of a nerve current. It is certain that the energy contained in the

light wave must undergo a profound change when it strikes and is arrested by the pigment, and the change that first suggests itself is that heat should be produced. But as a result of this transformed energy in the pigment chemical changes are induced, which should be compared with those brought about in plants by the action of light on chlorophyll. These chemical changes are also probably factors in the promotion of protoplasmic movement. In the case of chlorophyll the wave-lengths that are mainly arrested are the most chemically efficient, and this probably holds good also in the case of the retinal pigment.

The pigment cell when at rest has a marked secretory function, evidenced by the formation of retinal purple in the outer segments of the rods. The material thus formed is undoubtedly of great visual value, though there is no conclusive proof that the purple stain itself has actually any direct influence on sensation. Although complete rest—that is, darkness—causes an accumulation of this secretion the function proceeds during exposure to light.

The next fact of importance in this consideration is the contraction of the cone-myoid, which may be either due to a direct action of light on protoplasm, comparable to what has been observed in *peiomyxa palustris*, or to a change produced indirectly, the cone-myoid contracting in consequence of some stimulus, possibly chemical, received from the pigment cell.

Prolonged exposure to an intense illumination—direct sunlight, for example—causes actual changes of so pronounced a character that the outer segments of the visual cells are altered anatomically as well as functionally, and this alteration may persist for many months or even remain permanent.

The fundamental idea of vision seems to be to connect visual impression with muscular action, so that the animal may move out of danger, protect itself, or find its food. There is no necessary consciousness associated with any such visual influence, even in the case of animal forms where different wave lengths produce a difference in the muscular movements induced. In the case of the *daphnia*, for example, the experiments of Lubbock demonstrated that this tiny crustacean, with its feebly developed nervous system, is capable of distinguishing between light of different wave lengths, and that it is influenced particularly by the rays that correspond to what we know as yellow-green. It is unnecessary, and surely unreasonable, however, to conclude that the daphnia has any real conscious vision as we understand it in ourselves—still less a true colour sense. As an instance of how eyes may be developed, and prove serviceable for the production of a muscular action beneficial to the individual, no better could be brought forward than that observed by Semper in the *onchidium*. This land-snail lives close to the sea-shore, and the same shore area on certain coasts is frequented by the periophthalmus, a fish which leaves the water in search of food. Wherever this particular foe exists, and nowhere else, the local onchidium exhibits numerous highly developed eyes on its back, each having retinal cells, pigment, and optic nerve. In these dorsal-eyed onchidia, and in these alone, the skin of the back is thickly set with minute glands containing concretionary pellets, which are discharged by a general contraction of the body in hundreds. Such a contraction is induced, according to Semper, when the dorsal eyes give notice of the approach of this enemy.

Protective changes in colour under the influence of their surroundings occur in many animals, particularly in many fish and amphibians. The pigment is contained in contractile cells in the skin, and Lister has shown that the activity of these cells affecting the distribution of pigment is dependent on vision. Pouchet subsequently proved that the reflex takes place through the sympathetic nerves, the intensity of the nerve-current excited and the completeness of the contraction of the pigment-bearing cells being proportional to the brightness of the light reflected from surrounding objects. It is not a question of the animal consciously assuming a protective shade, but an instance of a visual impulse provoking a muscular contraction.

As we ascend in the animal scale we get further centralisation of the nerve mass, and find the visual apparatus intimately connected with it. Even in the case of the vertebrate brain it has been asserted that in all probability each part was primarily independent, and the division connected with the optic nerve was one of conspicuous importance. In the lower vertebrates—fishes, amphibians, reptiles, and birds—we still find the central connexion of the optic nerves almost confined to one part, the large optic lobes corresponding to the corpora quadrigemina of mammals. But as we ascend the scale this part of the brain becomes progressively smaller and less developed and seems to be mainly instrumental in the transmission of visual impulses that are to be immediately—that is, without reference to the visual cortex—conveyed as reflexes by way of motor nuclei to muscles, such as those for movements of the iris, and possibly to some extent of the eyeball—movements that can occur independently of sensory vision. There is absolutely no evidence that there is any difference in the character of the original impulse, or in the optic nerve-fibres that convey it, to distinguish what will be a mere muscular reflex and what will be a conscious impression. As to the manner in which such fibres are connected with visual cells, so that there may be, as it were, double central representation (sensory and reflex) of every part of the retinal area, we are still ignorant. It is possible that this is brought about by lateral communications between the processes of retinal ganglion cells of one or other layer, but more probably it is effected by a collateral from the axon of the last retinal neurone.

The visual fibres, strictly so-called, take, at least mainly, another course in the higher vertebrates. In man, for example, they pass from the optic tract to the external geniculate body and pulvinar, and thence the impulse is conveyed by fibres which traverse the posterior end of the internal capsule and pass, as the optic radiations of Gratiolet, to the cortex of the calcarine fissure and its immediate neighbourhood. The crossing of the optic nerve fibres at the chiasma so as to produce unilateral representation of the corresponding half of each retinal field; the bilateral representation of each macula; the association fibres which bring the cortical region of visual projection into relation with the much more extensive area of visual representation; the question of a distinct unilateral representation of each ocular visual field; and the arguments for and against a separate cortical area instrumental in colour perception must be left with a bare mention.

As regards the receiving apparatus, the visual fibres end by communicating directly, or indirectly through a nervous felt-work, with cells of the visual area, and destruction of this part of the cortex causes immediate blindness of a corresponding part of the field of vision. It would appear that the upper and lower lips of the calcarine fissure of one occipital lobe correspond respectively to the upper and lower parts of the homonymous halves of both retinæ, and that the fovea is represented along the entire length of the fundus of the fissure.

But whether the cells of the calcarine cortex are the seat of conscious impressions or merely constitute a stage in the path to yet higher centres, and whether the same cerebral cell is capable of appreciation of differences in colour as well as of difference in amount of light effect, must remain debateable questions. So much only may be observed, that this part of the cortex is particularly rich in cells, mostly of small size, while there is no reason to regard a small nerve cell as inferior to a large one in functional activity.

IV.—With regard to the broad facts of our recognition of the conducted impulse we have evidently two distinct sensations dependent upon light—colour and brightness; both influenced by differences in wave rapidities or wave-lengths.

On gradually reducing the intensity of the spectrum the colours fade and cease to be recognisable, but not simultaneously. Of these two sensations, light and colour, that for light is the one that persists with the smallest recognisable stimulus and is presumably the more elementary. The most elementary visual sensation is that derived from waves near E, that is for green. Clinically we have additional proof of this difference, for example, in cases of optic nerve disease with failure of conduction, colour sensation disappearing before that of light. Moreover, in the case of total congenital colour-blindness the brightest part of the spectrum is also in the green, about the line E, just as we find it to be on sufficiently diminishing the intensity of the solar spectrum to the normal eye. In fact, the appreciation and conduction of the stimuli associated with colour sensation seem to be more delicate than for light; a greater stimulus is needed to excite it, and it is more readily affected by any failure in the conducting path. The longest visible waves are recognisable as a colour (red) at the same time as they become visible as light, while in the case of shorter waves near E (green) there is a marked interval

between the intensity necessary for the perception of light and that for colour. Green, indeed, affords us the best clinical test of early failure of conduction, the appreciation of the colour failing, while that for light persists.

Of these two sensations there is reason to regard light perception as the more *primitive*, and the primitive type of visual cell is pigmented epithelium. We are encouraged, then, to consider this part of our retina as mainly concerned in the appreciation of light as distinguished from colour, and many facts support this view. Thus, in disease of the pigment epithelium there is difficulty in appreciating differences in the amount of light. Again, when changes have occurred in the pigment cells, when the eye is kept in the dark for about an hour, there is a remarkable increase in the sensitiveness of the retina to light. We may infer that the chemical action, induced by light on a particular secretion of the pigmented epithelium, is intimately associated with the causation of the effect recognised as *light-sense;* and the next step is to inquire how the impression is conveyed from the pigment cell, whether by rod- and cone-cells indifferently, or mainly by one of them. Although the power of appreciating a faint light stimulus is so markedly increased as a whole by "dark-adaptation," we find that this does not apply to the entire visual field, and does not apply equally to all parts of the field where it is increased. Thus in the central area the light-sense is actually diminished under these conditions; and whereas it is increased outside the central area, it is relatively more augmented as we approach the periphery. That is to say, it is not increased at all where cones alone are present, and the increase becomes more marked as the rods become more and more the predominant element. It has therefore been argued, with reason, that the rods are the elements concerned in the appreciation of light, or, rather, of the change produced in the pigment cells by light, while the eye is thus adapted; although whether or not the retinal purple is visually concerned may be considered still an open question. So definite is the physiological area of diminished light-sense in this condition that it can be shown to correspond with the projection of the rod-free foveal retina.

The only possible argument that can be adduced against this conclusion is the possibility that there may be a difference in the behaviour of the pigment cells themselves, in the central and peripheral regions of the fundus, but no evidence in favour of this has ever been brought forward. Granted, then, that the rods have this particular function, it by no means follows that the cones are not serviceable in the appreciation of light in ordinary illumination, though their peculiar office is presumably concerned with the recognition of differences of stimulation associated with variations in wave-length recognised as colours. Indeed, we know that light is ordinarily appreciated with marked efficiency by the macular area, but it is possibly always in virtue of the same function that is concerned in colour vision, white light being recognised, not as a simple result of stimulation, but as a consequence of, say, three simultaneous stimuli any one of which alone would excite a central impression of colour. It would seem as if a minor amount of stimulation that can be appreciated only by the rods must be excited before the cones come into functional activity. It is possible that the first action of light on the pigment cell is instrumental in providing a product of secretion or decomposition that is required so that the finer differences in wave-lengths be appreciated by the cones and the colour-sense stimuli be thereby initiated. Very possibly the movement of the cone-myoid is of service in this association.

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PURE BUTTER.—Recently a firm of grocers at Rhyl sued a Liverpool firm of butter merchants for costs sustained in defending an action in which they were charged with selling butter adulterated with boric acid. Judge Lloyd decided in favour of the plaintiffs on the ground that butter containing boric acid was not absolutely pure. The case was then taken to the High Court and remitted back to Judge Lloyd for consideration as to whether it was pure butter according to the trade. At the Rhyl County Court on June 22nd it was stated that the plaintiffs had consented to a judgment for defendants and agreed to pay £15 costs. His Honour consented to the settlement, but remarked that although butter which contained boric acid as a preservative might be regarded as pure in the trade, it could not be absolutely pure according to the customers' idea.

## UNUSUAL COMPLICATION FOLLOWING GASTRO-JEJUNOSTOMY.[1]

BY W. H. BROWN, F.R.C.S. IREL.,
SURGEON TO THE LEEDS GENERAL INFIRMARY.

I RELATE the following case to offer another instance of a good result following operative interference when there seemed to be but a forlorn hope of giving relief.

The patient, a woman, aged 62 years, had suffered for many months from pain after food, the pain gradually becoming most acute so that opium in full doses was needed to obtain anything like comfort. Latterly regular attacks of vomiting occurred about every 48 hours, when most of the nourishment taken during the preceding two days returned. No tumour could be felt but the symptoms all pointed towards pyloric stenosis. As the condition of the patient was getting unendurable I decided, after consultation with Dr. T. Churton, to open the abdomen to see if anything could be done. At the operation I found the pylorus greatly thickened and masses of enlarged glands constituting too great an area of disease to be attacked with any degree of safety. I therefore joined up a loop of jejunum to the stomach, using Senn's plates as the scaffold of anastomosis.

For the next two weeks all went as well as such cases usually do; the vomiting ceased and the pain gradually subsided. At the end of that time, however, the symptoms of obstruction began to reassert themselves, the pain again grew severe, and again the regular vomiting began, the amount corresponding with the quantity of fluids taken. It seemed clear that the new opening had for some reason or other ceased to be effectual. I therefore was face to face with a most discouraging chain of events and the patient herself was as badly off as she was before she submitted herself to operative interference. I decided to act on the assumption that the new opening between the stomach and the jejunum had closed and determined to re-open for the purpose of ascertaining the reason. Accordingly I re-opened the abdomen and I found that the junction between the bowel and the stomach externally was quite satisfactory. I then made an incision into the stomach two inches above the junction, and putting my finger inside found that all trace of the bone-plate had disappeared and also that all trace of the opening was absent. After a minute or two I felt the edge of the oval cut of the former operation and pressing firmly in the centre of this tore through a membrane by which the opening had been occluded. My finger then passed easily into the bowel and I stretched the opening freely in all directions. I then closed the exploratory incision into the stomach and finished the operation in the usual manner. After a day or two, during which time vomiting was incessant, improvement set in. The pain again left and it has not since returned. The patient is able to take light food and the vomiting has ceased. She is now out of bed daily and is gaining strength.

I have had occasion to operate for the relief of pyloric stenosis a good many times and in each instance I have used Senn's plates, but never before has the disaster I have related taken place. The membrane through which I tore was about as thick as ordinary note-paper. I do not know what occasioned the formation.

I said at the commencement of the notes of this case that I related it to add to the number of recorded surgical successes under desperate circumstances. With the condition which I have related to hold one's hand was to let the patient die in great distress; to operate again gave her one chance, but it also exposed her to the risk of death upon the operating table. Problems such as these come before us only too frequently and end only too often disastrously. I think it right, therefore, to put upon record this case, as it may possibly afford a guide as to the line of action to be decided upon should failure to relieve attend upon operation for a like condition.

June 24th.—The patient is now well, taking ordinary food and doing her ordinary work.

Leeds.

[1] A paper read before the Leeds and West Riding Medico-Chirurgical Society on May 4th, 1900.

# A CASE OF PRIMARY CARCINOMA OF THE VERMIFORM APPENDIX.

WITH REMARKS.

BY H. D. ROLLESTON, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN AND LECTURER ON PATHOLOGY AT ST. GEORGE'S HOSPITAL; SENIOR PHYSICIAN TO OUT-PATIENTS, VICTORIA HOSPITAL FOR CHILDREN.

A WOMAN, aged 26 years, was admitted into St. George's Hospital, on March 26th, 1900, under the care of Dr. F. G. Penrose, with a fourth attack of appendicitis, the first attack having occurred in January, 1899. On March 27th, 1900, the day after admission, the appendix was removed by Mr. A. Marmaduke Sheild. There was a small peritoneal adhesion connecting the apex of the appendix with the posterior surface of the uterus. No enlarged glands or anything in any way suggesting secondary growths were seen at the time of the operation. When the appendix was cut open a globular mass, a little larger than a marble, was found near the apex arising in the mucous membrane. It was somewhat caseous in appearance and suggested the possibility of tuberculous disease. The patient recovered from the operation, but during the middle of April she had an erratic temperature with some pain on the left side of the abdomen. This, however, subsided and she went to the convalescent home in May. I have recently (June 27th) heard from Mr. Sheild that the patient is losing flesh and strength, and that it is possible secondary growths are developing in the abdomen. The appendix was sent to me, for microscopical examination and report, by Mr. Sheild, to whom I am greatly indebted for permission to publish this interesting case.

Microscopical examination of the vermiform appendix showed, most unexpectedly, that it was the site of primary spheroidal-celled carcinoma. In its earliest stage the growth was seen to be limited to the mucous membrane (*vide* Fig. 1), but its histological structure in this situation was exactly the same as in other sections of adjacent parts of the appendix, where it was seen to be widely infiltrating the muscular coats and extending nearly up to the peritoneal covering (*vide* Fig. 2).

FIG. 1.

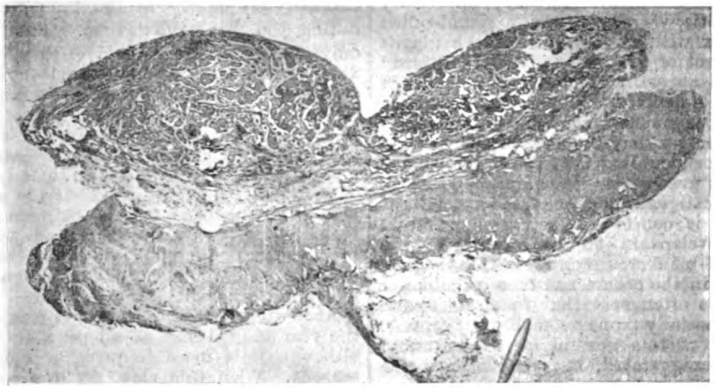

Photo-micrograph No. 1. Section of vermiform appendix showing carcinoma beginning in mucous coat. × 6.

FIG. 2.

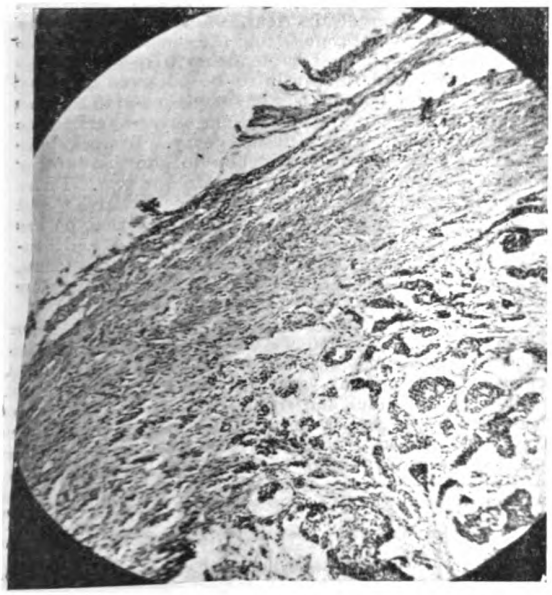

Photo-micrograph No. 2. Section of vermiform appendix showing carcinoma invading muscular coats. × 126.

The facts that (1) the growth was most extensive in the mucous coat, (2) that it could be traced outwards into the muscular coats, and (3) that there was no growth on the outside of the peritoneum, showed that the growth originated in the mucous membrane of the appendix, and that it was not a secondary growth either implanted on the peritoneum or arising as a result of embolism within its substance. I have several times seen secondary growths, in generalised malignant disease of the peritoneum, invading the appendix from without. If such an appendix were removed during life it might, if only superficially inspected, give rise to an erroneous diagnosis of primary malignant disease of the vermiform appendix. In the case of secondary malignant disease of the bowel due to emboli of infective tumour-cells the growth arises, and is most prominent, in the sub-mucous or muscular coats and only secondarily involves the mucous membrane. For the excellent photo-micrographs I am greatly indebted to the kindness of Mr. E. J. Spitta of Clapham, and Mr. Harold R. D. Spitta, a senior student of St. George's Hospital.

## THE RARITY OF THE DISEASE.

Primary malignant disease of the vermiform appendix is not mentioned in Hawkins's work on "Diseases of the Vermiform Appendix" (1895) or in Allbutt's "System of Medicine." Kelynack in his monograph on "The Pathology of the Vermiform Appendix" (1893) could not bring forward any undoubted case, but he refers to three cases in a tabular statement drawn up by Leichtenstern, and to a case of colloid carcinoma described by Draper, which he (Kelynack) thinks probably arose in the ileo-cæcal valve.

Lafforgue[1] collected no less than nine cases of primary carcinoma of the appendix. Mosso and Daunic[2] found the

[1] Thèse de Lyon, 1893.
[2] Bulletin de la Société Anatomique de Paris, Novembre, 1897.

appendix of a woman, aged 50 years—who had not presented any special symptoms pointing to disease of the vermiform appendix, death being due to morbus cordis—to be affected with carcinoma. The appendix was four centimetres in length and 45 millimetres in its greatest circumference. On section the muscular coats could be distinguished surrounding a tumour growing in the inner coats. In this way it resembled the section of the early stage of carcinoma seen in my case (Fig. 1). The growth was regarded as a columnar-celled carcinoma with a transition to the spheroidal-celled type. Letulle and Weinberg [3] in a careful investigation into the histology of 12 cases of obliterative appendicitis discovered quite unexpectedly that two of their cases showed microscopical evidence of developing carcinoma at the level of the cicatricial obliteration of the tube. Wright [4] described a columnar-celled carcinoma of the appendix close to its insertion into the cæcum which had perforated near this spot and set up fatal peritonitis. It must be admitted that this last case and one recorded by Thiersch [5] are very much the same as carcinoma of the cæcum—a much commoner condition. In a boy, apparently the subject of appendicitis, Warren [6] found a round-celled sarcoma of the appendix with involvement of the glands extending back to the root of the mesentery. H. Gilford [7] removed the cæcum and appendix from a woman, aged 27 years, who had had trouble in that region for 13 years. It is described as a sarcoma around a calculus in the vermiform appendix, but after reading the case I do not see any convincing reason for doubting that the microscopical appearances were those of granulation tissue.

The rarity of primary malignant disease of the appendix is rather striking when it is considered how comparatively frequently carcinoma develops in another annexe of the alimentary canal, the gall-bladder, which resembles it in its liability to infection and in the occurrence of a calculous or lithogenic catarrh.[8] It is often said that fœtal relics and atrophying organs are especially prone to malignant disease, but whatever the value of this general statement, and I believe it to be rather exaggerated, it is not true of the vermiform appendix.

Primary malignant disease of the appendix is perhaps not so rare as would appear from literature for two reasons. 1. Because in the early stage of carcinoma the appendix may be removed for symptoms of appendicitis, and in the absence of a routine histological examination of removed appendices some cases may thus escape recognition. The present case is an instance in point, the condition naturally being unsuspected until a microscopical examination was made. It is the only case I have met with in a histological examination of 34 morbid appendices. 2. Because if the disease runs its course without interference a large mass of growth would probably result which might become adherent to the cæcum, the bladder, or the bowel, and then be thought to have originated there, rather than in such an unusual site as the appendix.

### CLINICAL FEATURES.

It is remarkable that in three of the cases referred to above there were practically no clinical symptoms. When symptoms are present they are those of appendicitis. It is possible, on the analogy of tumour myelitis in the spinal cord that the growth sets up appendicitis, or, as suggested by Wright's case, that a small perforation may set up peritonitis around it. On the other hand Letulle and Weinberg's discovery of carcinoma developing in cases of obliterative appendicitis suggests that the growth is related to appendicitis much in the same way that carcinoma of the gall-bladder is related to cholelithiasis, which is of course the outcome of cholecystitis. It is, however, quite possible that the growth alone, without the addition of any ordinary inflammation, may account for the symptoms in some instances.

It may be worth while putting forward the suggestion that when apparently multiple primary (nodular) malignant disease of the liver occurs the vermiform appendix should always be carefully examined at the necropsy. It is hardly likely that multiple secondary growths would develop in the liver while the primary growth in the appendix is so small as to require microscopical examination. But it is quite conceivable that in a case of multiple carcinoma, apparently primary in the liver, the really primary growth might have been in an appendix previously removed for supposed appendicitis.

Upper Brook-street, W.

[3] Ibid., 1897, p. 47.
[4] Boston Medical and Surgical Journal, Feb. 17th, 1898.
[5] Berliner Klinische Wochenschrift, 1882.
[6] Boston Medical and Surgical Journal, Feb. 24th, 1898.
[7] THE LANCET, July 29th, 1893, p. 241.
[8] "Fæcal concretions" are, like gall-stones, products of inflammation of the surface surrounding them and not concentrated residues of its normal contents.

## ON THE TREATMENT OF THE SO-CALLED "HAY-FEVER" OR SUMMER CATARRH.

BY KARL GRUBE, M.D.

SUMMER catarrh (*catarrhus æstivus*), also called "hay-fever," was first described at the beginning of this century by Dr. John Bostock [1] of London, who himself suffered from it. As the name implies, the affection occurs during the summer months, but chiefly at the time when grass flowers and during the haymaking time. But while many patients only suffer from it when they come near a hay-field others are also affected by any strong-scented flowers or by ordinary dust; several of my patients were always attacked on railway journeys in hot and dusty weather. The catarrh affects the mucous membranes of the eyes, nose, and lungs. In the same person the mucous membrane of all the parts mentioned may be affected or the catarrh may be limited to either the eyes and nose or to the bronchi. In the intervals between attacks the patients are either perfectly well without any affection of the respiratory organs, or there may be a tendency to catarrh of these organs or a chronic morbid condition of the nasal mucous membrane with thickening.

According to Beard,[2] hay-fever may arise at any season of the year and it is not at all peculiar to summer or autumn, although it is more frequent or more persistent at these seasons. With this view my own experience agrees, as I have seen cases of so called hay-fever as early as February.

In most of my cases, and in all cases which were treated successfully, a gouty tendency could be traced to be underlying the local affection, the patients either coming of a gouty stock without themselves having any other symptoms of gout or suffering from gout in some form or other—e.g., gouty rheumatism.

Strictly speaking the universally used term "hay-fever" is misleading, for, as I have already mentioned, the catarrh is not produced only by grass or hay, nor is it entirely limited to the summer months. One frequently finds on inquiry that persons who pronounce themselves to be suffering from hay-fever also suffer more or less freely from catarrhs at other times of the year, only the attacks are more frequent and more severe during the summer. In these cases, then, one sees that general tendency to catarrh of the mucous membranes so frequently to be observed in gouty subjects. Of course, not all cases of summer catarrh are due to gout, but according to my observations a large percentage of the patients suffering from it are gouty. Bostock himself mentions that he had a tendency to gout, and other writers also speak of a connexion between the two. I may quote, for instance, Gueneau de Mussy,[3] Leflaive,[4] and Lermoyez.[5] Sir Dyce Duckworth [6] also states that he has sometimes noticed the connexion between gout and hay-fever. A further proof of this connexion may also be found, I think, in the fact that hay-fever, like gout, is more common in England than in any other country.

If it should be true that the gouty disposition is often underlying the local affection we can *a priori* only expect success from a treatment that is directed against both. I have always acted on this principle and have always laid great stress on a careful and strict regulation of the diet on lines that are so well known as not to require to be detailed here. The local treatment consists in the application of the Neuenahr waters in the form of inhalations,

[1] Case of Periodical Affection of the Eyes and Nose, Medico-Chirurgical Transactions, 1819, x., and 1828, xiv.
[2] New Facts and Suggestions relating to Hay-Fever, New York Record, 1876, vol. iii., p. 680.
[3] Sur la Rhino-bronchite Spasmodique ou Fièvre de Foin, Gazette Hebdomadaire de Médecine, 1872, vol. ix., p. 9.
[4] De la Rhino-bronchite Annuelle, &c., Thèse de Paris, 1887.
[5] Sur la Pathologie de l'Asthma de Foin, Annales des Maladies de l'Oreille, &c., 1888.
[6] A Treatise on Gout, p. 219.

gargle, and nose-douche. In cases in which there have been muscular and articular pains in addition to the catarrhal affection hot baths and massage have proved to be of great use. The best time for this sort of treatment, according to my experience, is during the months of May and June—that is to say, before the attacks of hay-fever have begun to show themselves. July I should not recommend; in August and September, however, I have treated cases with success. There are cases of hay-fever which do not respond to the treatment. These I have always found to be cases in which there was no history of gout, while in those cases in which the combination of gout and summer catarrh existed I have scarcely ever failed to obtain a good result. The following is the history of a few of my cases.

CASE 1.—The patient, a female, aged 19 years, had suffered from hay-fever for many years. There was a history of gout. The affection generally began towards the end of May. Hay, roses and other flowers, as well as heat and dust, immediately brought on an attack which began with sneezing and running at the eyes and nose, and which after a short time was followed by coughing. During June and July the attacks were of almost daily occurrence. In other respects the patient was perfectly well. There was some thickening of the mucous membrane of the nose, especially on the left side. Bleeding from the nose was easily brought on. The treatment as described above was carried out in April and May, 1897, with the result that there were no attacks of hay-fever during that summer. A second shorter course of treatment was thought advisable in April, 1898. There has been no recurrence of the attacks of hay-fever up to the present time (March, 1900).

CASE 2.—The patient, a female, aged 36 years, had suffered from hay-fever since the age of 15 years. Both her parents were gouty. The patient herself had suffered from rheumatic pains and articular swellings. She had severe attacks of hay-fever from May till August, recurring almost daily and much exhausting her. During the attacks there was great swelling of the upper part of the face, intense frontal headache, much secretion from the eyes and nose, together with coughing and a wheezing respiration. Local treatment of every description had been useless. Relief was only to be obtained by residing in a bracing place at the seaside. The patient was treated at Neuenahr during part of May and June, 1897, and though the attacks became less violent they did not entirely cease. The treatment was repeated in the following year with the result that no attacks of hay-fever occurred during that summer, nor has there been any recurrence since 1898, but I should mention that the patient has lately been more subject to rheumatic pains.

CASE 3.—In this case a history of gout was obtainable. The patient, a female, aged 42 years, was first treated for hay-fever at Neuenahr during 1895 with good results. She remained free from attacks during the following two years. In 1898 a relapse occurred which made her return to Neuenahr; she had after that no more attacks during 1898 and 1899.

CASE 4.—The patient, a girl, aged 10 years, came of a very gouty family and was herself a very delicate child. She has been suffering from severe attacks of hay-fever for the last four years. She was quite disfigured by the attacks. Her face was swollen and red, her eyes were inflamed, and there was constant running at the nose together with coughing and wheezing respiration. She contracted the attacks everywhere and from all sorts of causes, but especially from heat and dust. When she arrived at Neuenahr she was in the midst of one of her most severe attacks and was very prostrated. During the following four weeks she kept quite free from the attacks, nor did the long journey to St. Moritz affect her, although the weather was hot and dusty. She has since kept wonderfully well.

CASE 5.—This case is one of those treated without any success. The patient had suffered from hay-fever and asthma for several years. There was no history of gout. The attacks occurred almost daily during May and June. They began in the usual way with sneezing and increased nasal secretion, but their chief feature was violent coughing, a feeling of severe tightness round the chest, and a difficulty in breathing. The usual treatment was carried out but had to be given up after its ineffectiveness had been proved.

The following are the conclusions to which I am led. 1. There are cases of summer catarrh (so-called hay-fever) which can be cured, or at least relieved, by treatment with the waters of Neuenahr. 2. The cases especially suited for this treatment are those in which the affection is a part of the gouty dyscrasia. 3. Cases without a history of gout do not seem to be benefited by the treatment.

Neuenahr, Germany.

# EXERCISES IN THE TREATMENT OF LATERAL CURVATURE OF THE SPINE.

BY NOBLE SMITH, F.R.C.S. EDIN., L.R.C.P. LOND.,
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THE beneficial influence of gymnastic exercises upon the general health of the body has been recognised for ages and it is needless, in discussing the present subject, to dwell upon this fact further than to state that in treating curvatures of the spine everything which benefits the general health will materially assist other treatment.

My present purpose is to consider the local effects which may be produced upon a crooked spine by specified muscular exercises, either by correcting the shape of and strengthening the joints, or by strengthening any particular set of muscles connected with the deformity. In the first place it should be noted that it is impossible to lay down any hard-and-fast rules for gymnastic exercises by which to deal with every instance of curvature, because cases differ to such an extent that what is suitable to one individual would be totally wrong for another. Moreover, patients differ as regards the muscles they bring into use in carrying out the same movements. I will in the first place describe briefly the various kinds of lateral curvature and the application of gymnastics to their peculiar requirements.

CLASS 1.—That in which the most notable condition is debility occurring after illness or from some other cause. In these cases the muscular system being especially affected the patient is unable to hold his spine erect except for short periods, but in the early stage there is not any well-marked bony deformity. For such a condition a course of general active and passive exercises of the trunk and neck, and also of the legs and arms, will have a beneficial effect. As a rule, these exercises should be carried out while the patient is in a recumbent position. The general health of these patients always requires treatment by means of a nutritious diet and tonic medicines, some form of lime being especially beneficial. Massage is also helpful. It is usually also advisable to limit the amount of voluntary active movements in order to avoid producing fatigue.

CLASS 2.—In this class we find, in addition to the above symptoms, laxity of the ligaments of the spinal joints. For these patients exercises will be beneficial, but greater care must be taken to prevent the spine from subsiding into curves during the intervals between the exercises.

CLASS 3.—In which alterations in the form of the bones has already occurred. In these cases the exercises must be directed not only generally, but specially, in order to overcome these curves. For instance, the special exercise to be presently described to correct rotation is one of the most important.

CLASS 4.—In which the curves are more severe. For these patients some good may be done doubtless by a course of exercises, but less permanent effect must be hoped for than in the less severe cases.

In Class 1 mentioned above it is nearly always desirable to commence treatment by exercises and in many cases with the addition of massage. In Class 2, also, exercises may be carried out, but the patient should be carefully watched to determine whether he is really recovering and to detect when the disappearance of curves is more apparent than real. In Class 3 and Class 4 a combination of methods must be brought to bear upon the case.

*Description of exercises.*—A great variety of complicated exercising machines have been devised and used from an early date in the study of this deformity, but although these apparatus are very beneficial under some circumstances, it should be the object of the surgeon to simplify as far as possible the various movements carried out, with the view of teaching the patient to continue the treatment by himself as far as possible subsequently.

In the early periods of treatment of any case, however, the knowledge of the surgeon and the efforts of the skilled teacher are both necessary, and unless the curvature be very

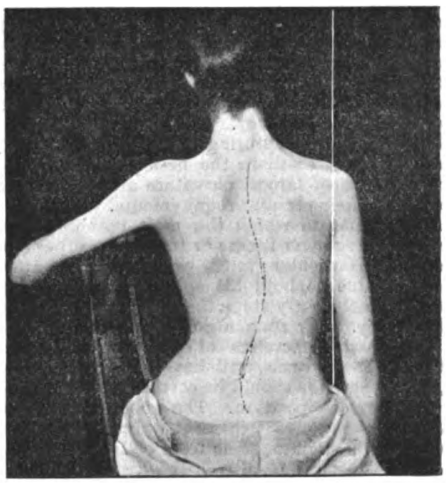
slight the medical supervision is required for a considerable time.

*General exercises.*—I have already stated that, as a rule, the patient should rest in the recumbent position whilst carrying out the general exercises. The object of the recumbency is to remove the weight of the body from influencing the curves.

We almost invariably find that where there is general debility and a weak muscular system there also exists laxity of the joints. Under such circumstances whenever the spine is in an upright position, whether the patient be standing or sitting, there is a certain deforming influence upon these lax joints caused by the superincumbent weight, and the spine consequently tends to give way in one or other direction.

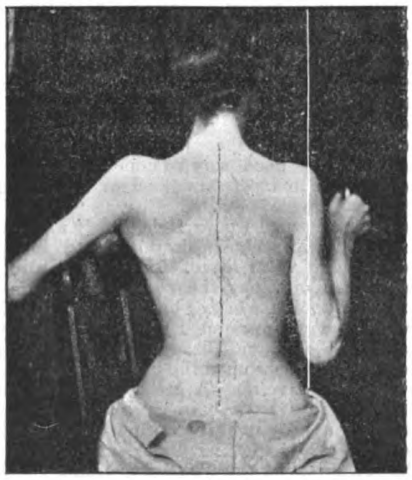
The object of general exercises is to strengthen the muscles and also, by bringing more blood to the weak parts, to nourish and strengthen the whole spine. The test as to when a patient may safely undertake exercises in an upright or sitting position must be his ability to control his spine in a straight posture for a sufficient length of time. For instance, when we have first examined the case the patient, upon sitting in a chair, will, after a certain short period, have relapsed as regards his spine into one or other or several curves. When the time has arrived that he can sit up easily with the spine in a perfectly normal position not only as regards lateral but also in respect to antero-posterior posture for at least five minutes, then we need not restrict the exercises to the recumbent position.

FIG. 1.



Dorso-lumbar curvature, the dorsal curve being most prominent about the tenth dorsal vertebra.

FIG. 2.

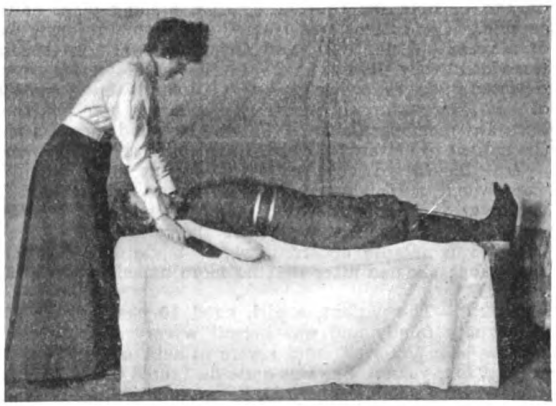


The same patient as in Fig. 1 drawing back the elastic expander with the right arm, thus using the muscles between the shoulder and the spinous processes of the deflected dorsal vertebræ, straightening the whole spine and un-rotating the vertebræ. The vertical lines from the outer side of the pelvis show the relative positions of the sides of the body, without and with the active exercise.

FIG. 3.

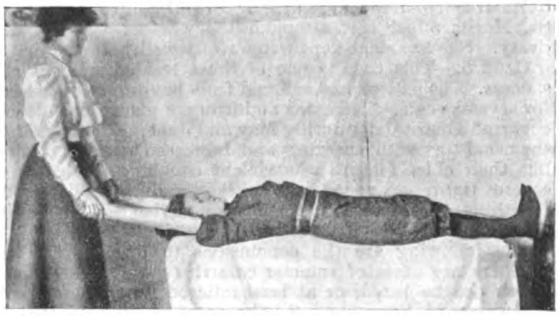
The exercise for drawing back the prominent side of the thorax. Here the dorsal curve was to the left. The patient in Fig. 1 and Fig. 2 would have done this exercise with the left arm.

FIG. 4.



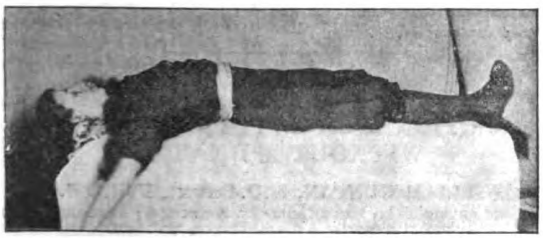
Arm extension, first position, with resistance by the patient. In the second position the arms are raised and the operator resists.

FIG. 5.



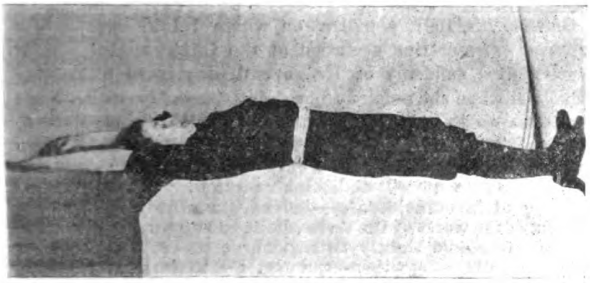
Arm extension, second position, in which the operator resists.

FIG. 6.



Arm extension without resistance, second position. In the first position the arms are flexed and the fingers touch the shoulders.

FIG. 7.



Arm extension, third position.

FIG. 8.

Simultaneous leg elevation. The arms are extended to balance the body. This exercise has a powerful effect upon the abdominal and lumbar muscles and has to be attained by gradual slighter movements.

FIG. 9.

Simultaneous leg and arm circling. The combination of these exercises is only carried out in exceptional cases and requires considerable strength.

FIG. 10.

This figure shows the first position for the exercises in Fig. 11 and Fig. 12.

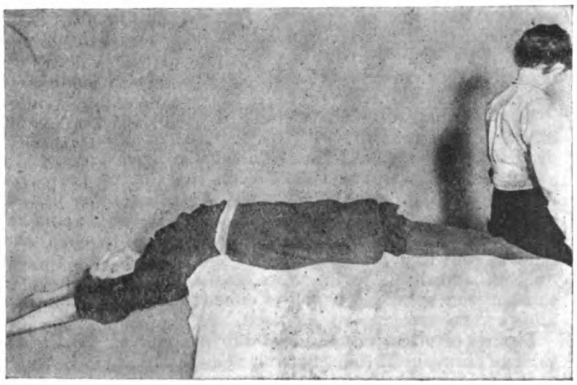
FIG. 11.

Body flexion backwards and forwards. his exercise requires considerable practice before it can be done *evenly* to the extent shown.

FIG. 12.

Kneeling body movement. It would require many figures to show the details of this exercise. Before it can be carried out satisfactorily more simple degrees of the position have to be practised.

FIG. 13.



Backward bending with legs fixed. If forward bending to a sitting position is required the patient must have the knees bent over the edge of a shorter couch and there fixed.

*Exercises to act directly upon the curves.*—In order thoroughly to realise the effect of exercises upon a curved spine it is necessary to consider carefully the exact action of the muscles which we propose to bring to our aid and the exact position of the parts which are distorted.

One exercise which has been recommended for acting directly upon the dorsal curve has been devised with the object of drawing out the concave side of the curve by use of the arm of that side, but this exercise tends to increase the twisting of the spine which is the most serious part of the deformity.

The muscles which extend from the arm to the spine are the trapezius, the rhomboidei, and the latissimus dorsi and these are attached to the spinous processes of the vertebræ.

It should be remembered that the spinous processes are directed, in consequence of the rotation of the vertebræ, towards the side of the *concavity* and that the rotation is the part that offers the more serious obstruction to treatment. The effect of this exercise is obviously to draw the spinal processes further in the direction of the concavity and consequently to increase the rotation.

The plan of special exercises which I have devised for acting upon the dorsal rotation consists in the use (1) upon the *convex* side of the curve of the muscles above referred to, with the object of drawing the vertebræ round towards their proper position; and (2) upon the *concave* side of the curve of the muscles which extend from the arm to the front of the body, with the object of drawing backwards that prominent side of the thorax. Although this plan of exercise acts directly only upon the dorsal curve, yet the resistance of the pelvis to the action of the arms tends to twist the lumbar part of the spine in the opposite direction and thus produces the exact action that is required. If more direct action is needed for a lumbar curve the quadratus lumborum may be brought into use upon the *convex* side of this curve, and this is best done with the patient in the recumbent position. The object of this system is to lessen the curves upon their convexities and to rotate the vertebræ back to their normal position.

Slight variations in these exercises must be made to suit individual cases, as there is nearly always some difference in the form and condition of the curves. The general exercises of the erector spinæ muscles of both sides should, as a rule, be carried out in addition to the special exercises now described and avoidance of fatigue and suitable rest should be observed.

In the earlier stages of treatment the special exercises should be conducted while the patient is lying recumbent both in the supine and prone position, but it will perhaps suffice here to describe these exercises as carried out in the sitting position.

For this exercise upon the convexity a hook should, in the first instance, be placed, as a rule, on a level with the top of the patient's shoulder while sitting, but often it is necessary to vary this position higher or lower before the desired effect upon the curve can be attained. It is remarkable how plainly this action when correctly performed, affects the curve. In slight cases the spinous processes may be drawn completely into a straight line at once and the projection of the ribs depressed towards a plane with the opposite side, showing that the vertebræ are rotated into or towards their normal position. Of course, this effect only lasts as long as the muscles are held in contraction, but the value of the exercise is thus proved, and the practical result is eventually a permanent lessening or removal of the rotation (Fig. 1 and Fig. 2).

In the exercise upon the front of the thorax (Fig. 3) the effect is less evident. The patient, in a sitting posture, draws the elastic cord forwards from a fixed point on or about a level with the shoulder on the side of the dorsal concavity, this point being situated behind the patient. This plan brings into use the muscles between the arm and the front of the thorax (the pectoral muscles), which thus tend to pull the front wall of the thorax, unduly prominent on this side, backwards. Here, as in the former instance, the surgeon must see that the effect is beneficial before he allows the exercise to be practised.

Figures 4 to 13 show some of the postures adopted in the various exercises in the recumbent position.

It would be almost impossible to give illustrations of all the exercises which may be used beneficially in the treatment of curvatures of the spine; they have to be varied to meet the requirements of each individual case. Those given above will, however, afford a fair illustration of some of the more important positions produced in this treatment.

Queen Anne-street, W.

# 100 CONSECUTIVE CASES OF ABDOMINAL SECTION IN HOSPITAL PRACTICE WITHOUT A DEATH.

BY WILLIAM DUNCAN, M.D. BRUX., F.R.C.S. ENG.,
OBSTETRIC PHYSICIAN TO THE MIDDLESEX HOSPITAL; SENIOR PHYSICIAN TO THE CHELSEA HOSPITAL FOR WOMEN.

SUCH a series of cases as that about to be given is sufficiently rare to merit publication; indeed, I am not aware that a similar series has occurred hitherto in this country—at all events it has not been recorded.

On Oct. 7th, 1897, a patient on whom I had operated for ruptured extra-uterine gestation at the Chelsea Hospital for Women died suddenly on the seventh day from pulmonary embolism when she seemed to be doing perfectly well. From that date up to now (June 10th, 1900) all my sections at the above hospital are included in the following table. The cases, I may add, were the only ones admitted into my wards which required abdominal section. There was no choosing of favourable cases—indeed, the ninety-eighth case was about the worst of the series, being a suppurating ovarian cyst with pedicle tightly twisted three times, and the cyst wall was universally adherent, anteriorly to the parietal peritoneum and in the rest of its extent to the intestines, so intimately that the latter could only be freed by leaving a thin layer of the cyst wall adherent to them.

*100 Abdominal Sections performed at the Chelsea Hospital for Women between Oct. 7th, 1897, and June 10th, 1900.*

| | | | |
|---|---|---|---|
| Uterine fibroids: | | | |
| hysterectomy | 17 | 20 | |
| myomectomy | 3 | | |
| Ovarian cysts: | | | |
| left | 6 | 23 | |
| right | 9 | | |
| double | 4 | | |
| dermoids (one single and three double) | 4 | | |
| Ventro-fixation | 7 | | |
| Extra-uterine gestation: | | | |
| ruptured | 6 | 11 | |
| unruptured | 5 | | |
| Pyosalpinx (double) | 9 | | |
| Hydrosalpinx (one single and three double) | 4 | | |
| Parovarian cysts | 2 | | |
| Suppurating broad ligament cyst | 1 | | |
| Tubo-ovarian cysts (two simple and five suppurating) | 7 | | |
| Diseased and adherent appendages: | | | |
| right appendage removed | 4 | 12 | |
| left appendage removed | 2 | | |
| both appendages removed | 4 | | |
| adhesions broken down | 2 | | |
| Ventral hernia | 1 | | |
| Exploratory incisions | 3 | | |
| | | 100 | |

In most of the cases of pyosalpinx and suppurating tubo-ovarian cysts the tumours were so bound down by adhesions that during removal they burst, allowing the purulent contents to escape into the peritoneal cavity. Whenever this occurred the abdomen was thoroughly flushed out with sterilised water. Ventro-fixation was performed either for old-standing prolapse or for retroflexion with adhesions binding the fundus down to the sacrum. The most difficult operations of the series were those for diseased and adherent appendages. The patients had had repeated attacks of peritonitis and they suffered more or less continual abdominal pain, so that they were chronic invalids. In these cases on opening the abdomen all the pelvic organs were usually found to be densely matted together; the tubes and ovaries were matted to one another, to the pelvic wall, and to the intestines, so that usually the greatest difficulty was experienced in their removal. The one case of ventral hernia was in a woman on whom I had performed ovariotomy five years previously when the abdominal walls used to be sewn up with one layer of sutures. Nowadays, by sewing up the peritoneum, the rectal sheath, and the skin separately, ventral hernia is prevented. Exploratory incision without removal of any organ was performed three times. One case proved to be extensive malignant infiltration, the second was chronic cellulitis in the left broad ligament, and in a third a tumour of the size of an orange (probably malignant) was found to be growing in the posterior wall of the bladder.

The results of abdominal section at the Chelsea Hospital

for Women by my colleagues and myself have been so excellent for the last few years that I propose describing in detail the method of procedure. In the first place, the members of the Council deserve the greatest praise for carrying out so thoroughly and at such expense the recommendations of the Medical Committee. They have given us a perfect operating-theatre, complete in all its details, but even more important than that is the fact that they have fitted up a sterilising-room, opening out of the theatre, with boilers, &c., by means of which all instruments, towels, operating-aprons, &c., are rendered completely aseptic so that every possible precaution is taken to prevent the patient being exposed to noxious germs. Given, then, the above surroundings and given a resident medical officer and staff of nurses thoroughly imbued with the vital importance of asepsis, it is not to be wondered at that our mortality is so very small. I will now make a few remarks on certain details.

1. *Preparation of the patient.*—The day before operation the patient's pubes and abdomen are shaved and are then well scrubbed with carbolic soap and a nailbrush, special attention being paid to the umbilicus; a layer of wool soaked in a 1 in 1000 solution of perchloride of mercury is then applied and kept in position by means of a many-tailed binder until the time of operation.

2. *Operator and assistants.*—The hands and arms up to the elbow of the operator and his assistants are thoroughly scrubbed with soap and a nail-brush and then dipped (for at least a minute) in a 1 in 2000 hot solution of perchloride of mercury. A basinful of the same solution is kept at each side of the operating-table so that if during the operation the hands get fouled they can be rinsed in the solution. Personally I always prefer if possible that no other fingers than my own shall enter the peritoneal cavity.

3. *Instruments.*—Just before each operation the special theatre nurse sterilises all the instruments which are likely to be required. They are transferred from the steriliser direct to a glass tray containing plain-boiled water. If during the operation an instrument has to be got from the air-tight instrument-case the nurse at once sterilises it before handing it to the operator. The silk (I use nothing else) after being thoroughly sterilised is kept ready for use in glass bottles full of carbolic solution.

4. *Sponges.*—Although some operators use pads of aseptic wool sewn in gauze bags, I prefer sponges thoroughly cleansed, as they are less irritating to the intestines. During the operation they are simply wrung out of hot sterilised water, and of course if used in purulent cases or where the contents of an ovarian cyst consist of dirty grumous material, they should be destroyed directly after, but in these cases the gauze pads are best as they are inexpensive.

5. *Flushing.*—In all cases where a cyst with purulent or unhealthy grumous contents bursts during the operation I flush the peritoneal cavity thoroughly with plain sterilised water at a temperature of 110° F. but in no other cases. In operations on ruptured tubal pregnancies, after removing the large blood-clots with the hand and carefully mopping out the pelvis with a sponge on a pair of long forceps, I do not flush the peritoneal cavity unless the patient be very collapsed from loss of blood; then the flushing acts as a stimulant.

6. *Drainage.*—Some years ago I used to employ drainage frequently by means of a glass tube. Now I hardly ever drain, unless there be oozing from torn extensive adhesions low down in the pelvis on which a ligature cannot be put and the application of pressure forceps for a few minutes does not stop the oozing. I am confident that it is of the greatest importance to control all oozing before closing the peritoneal cavity and I do not hesitate to prolong the operation somewhat with that object. Drainage is not necessary after flushing out, but whenever it is employed the drain should be a piece of indiarubber tubing or iodoform gauze in those cases where some pressure is required to stop oozing. The drain should, if possible, be removed after 24 hours, though in some cases it might have to be left in for two or three days.

7. *After-treatment of the patient.*—In cases of hysterectomy which are accompanied by a good deal of shock, and in cases where the patients are feeble or collapsed, a nutrient enema of two and a half ounces of beef-tea and half an ounce of brandy should be given within an hour or two and repeated every four or six hours. Nothing is given by the mouth for 24 hours unless there be no sickness and the patient craves for some fluid. She may in that case commence six hours after to take a teaspoonful of hot water every hour. Where the sickness and retching are very persistent and troublesome the administration of half a pint of hot water with 20 grains of bicarbonate of soda dissolved in it will often act most beneficially. Opium in any form should, if possible, not be given. After 24 hours nourishment can be taken (provided there is no sickness). Most patients crave for a cup of tea (about four ounces) with plenty of milk, and every hour afterwards half an ounce of equal parts of milk and hot water can be given. When the sickness continues I stop everything by the mouth and feed per rectum.

The two great dangers after abdominal section are, in my experience, shock and tympanites from intestinal paralysis. The shock is combated by hypodermic injections of three minims of solution of strychnia three times a day. For tympanites my plan is to try to prevent its occurrence by having a soft rectal tube passed up the bowel every four hours, and if after 24 hours flatus is not freely passing (either naturally or by the tube), an enema containing an ounce of oil of turpentine to a pint of hot water is injected high up and, if necessary, is repeated two or three times a day. Once the escape of flatus is satisfactorily established my mind is at rest and the patients almost invariably do well. Nowadays the onset of peritonitis after abdominal section should be practically never met with, unless some unavoidable occurrence (such as the rupture of a pyosalpinx) has happened during the operation, and even then with careful and thorough flushing out the risk is small. I am not a believer in the efficacy of saline aperients, either for tympanites or peritonitis; they certainly have not proved in my hands anything like so effectual as the turpentine enemata.

Such are the methods which were adopted in the series of cases just recorded, but I cannot conclude these cursory remarks without expressing my warmest thanks to my colleague, Dr. Ewen J. Maclean, for his valuable assistance at the operations; to our most excellent and energetic resident medical officer, Dr. Victor Bonney, who was unsparing of himself in his devotion to the after-treatment of the cases, and who, after two years as an indefatigable and courteous officer, is leaving the Chelsea Hospital for Women in order to take up another sphere of work to the great regret of every member of the lay, medical, and nursing staff; and, lastly, my thanks are cordially given to the matron (Miss Heather Bigg) and to the nurses for the excellent manner in which they always perform their important duties.

*Note.*—Since the above was written there are eight more cases to be added to the list, making altogether 108 successful cases.

Harley-street, W.

## SUPPURATIVE PERITONITIS; SPONTANEOUS EVACUATION; RECOVERY.

BY JAMES R. WALLACE, M.D. BRUX., F.R.C.S. IREL.,
SURGEON TO THE HOME HOSPITAL, CALCUTTA.

THE patient was an English girl, four years of age, who was admitted into the Home Hospital on Feb. 18th, 1899, suffering from febrile symptoms, intestinal pain, and diarrhœa, with fœtid evacuations. She was pale, emaciated, and had a marked cachectic appearance. She had suffered now and then from a low form of intermittent fever and occasional diarrhœa, and had been under my care four or five times. On admission the abdomen was found to be tense, tympanitic, and tender, the skin was hot and dry, the temperature was 102° F., and the face was pinched and anxious-looking. The child was peevish and she cried a good deal. Her bowels were relaxed, the motions being watery, slate-coloured, and very fœtid; they consisted of mucus and serum, somewhat fæcal stained; there was a slight cough, but the lungs were quite clear. Urine was passed freely and was of a natural colour. She was given castor-oil emulsion containing two drops of terebene and one of laudanum every four hours, alternated with five drops of mercuric bichloride solution (British Pharmacopœia) in water every four hours. The body was sponged with tepid water every six hours to reduce the

temperature. The abdomen was smeared with belladonna suspended in glycerine. Her diet consisted of raw arrow-root (a teaspoonful of the flour in a wineglassful of water) alternated with strong beef-tea every two hours. Within three days the intestinal fœtor had disappeared, the temperature had fallen to 100°, and the child was discharged from the hospital, at the mother's request, on March 5th, 15 days after admission. She seemed very much improved in condition and was able to walk about, though there was still tenderness on pressure in the umbilical area. Three days later the mother brought her into hospital again, as the fever had returned accompanied by severe abdominal pain and tenderness on pressure. It was now noticed that the umbilicus bulged a good deal forward, and on palpation distinct fluctuation was apparent quite two inches around the umbilicus. The temperature was 101°. A condition of subacute general peritonitis, probably tuberculous in origin, with effusion tending to suppuration, was diagnosed, and laparotomy was recommended. Colonel Havelock H. R. Charles, I.M.S., Professor of Clinical Surgery to the Medical College Hospital, saw the little patient on March 9th. He concurred with the diagnosis and plan of treatment and it was decided to open the abdomen on the following day. As a preparation for it the abdomen was thoroughly cleansed and a layer of sterilised boric cotton was used as a protective over the abdomen and kept in position by a binder of iodoform gauze. On the next day, after removing the binder and cotton dressings, a small portion of the latter was found to be adherent above the umbilicus, and in the effort to remove it the tissue beneath peeled off, and instantly a stream of pus welled up in a jet, quite six inches high, and flowed for about three minutes, till no less than 24 ounces had escaped. It was perfectly healthy in colour and devoid of shreds or clots or flocculi. Gentle pressure over the abdominal wall seemed thoroughly to empty the peritoneal cavity of its purulent contents, and when this was effected the spontaneous aperture above the umbilicus was dusted with iodoform and dressed with boric wool and iodoform gauze. There was immediate improvement in the child's general condition, there being no further rise of temperature, no pain, and no further evidence of the intestinal disturbance. The appetite improved and the child slept and ate well. There was no soaking of the dressings up to the fourth day, when they were removed and the child was made to wear a light flannel binder for another week. She gained flesh rapidly, and in a fortnight she was able to get about as briskly and gleefully as though she had not been ill at all. She was discharged from hospital on March 27th—i.e., 17 days after the spontaneous rupture of the abdominal wall. It is now nearly 14 months since she left the hospital and she has not had a day's illness during this time. When I last saw her—i.e., on May 8th—I was struck with her remarkably healthy and robust appearance. This case would seem to corroborate the modern belief that tuberculous peritonitis is curable by laparotomy and aseptic irrigation, on the theory that while in the one instance the morbid products are removed by direct lavage, in the other, as in this case, the degenerated tuberculous matter was completely thrown off in the form of healthy pus.

Calcutta.

## CONTAGIOUS CATARRH OR ROUP IN FOWLS, AND DIPHTHERIA IN MAN.

BY J. GORDON SHARP, M.D. EDIN.

*Distinction between gapes and roup.*—Two diseases of fowls—namely, "gapes" and "roup"—are often confounded, but the two are distinct and at the outset I must make this point clear. Gapes is caused by the presence of a nematode worm—*syngamus trachealis* (*sclerostoma syngamus*)—in the windpipe. The disease is found not only in the domestic fowl but also in the lapwing, the magpie, and the pigeon. The disease receives its name from the gaping attitude assumed by the affected animal. The eggs of the worm probably live in the soil. Gapes does not further concern us at present. Roup, on the other hand, probably depends on a micro-organism. This, then, is the disease or diseases which especially concern us at present. I say "disease or diseases," for it is not possible to say definitely whether the name "roup" covers only one or more than one disease. The name is given to a condition common among poultry, especially among those which are kept in towns and in overcrowded, damp, and badly ventilated hen or poultry runs. So far as I am aware very little has been written on the subject from the scientific standpoint although every hen-keeper possesses a specific for the condition which generally fails to cure his own birds, however successful it may be, or may have been, with the birds of others. The name of the disorder would appear to be given because of the peculiar sound which the bird emits, although my observations lead me to the view that the sound only appears in the cases in which the disease attacks the windpipe. In such a case the sound may be due to the air passing over the fibrinous exudation. Where the membrane occupies the mouth only or the mouth and alimentary tract no such sound is heard. The sound is a rough rasping one and the name "roup" describes it very faithfully. The laity describe a "dry roup" and a "wet roup." Dry roup is commoner in old birds and is not very fatal, while wet roup is commoner in young birds and is highly fatal. Dry roup answers to the condition in children spoken of as "croupy," while wet roup may resemble membranous croup—at least, it does so in its effects. Roup further resembles diphtheria in that it may kill with great suddenness, and epidemics of roup, like epidemics of diphtheria, vary in severity and malignancy. At one time we find that the disease breaks out in a coop and attacks only two or three birds and the deaths may be limited, while no other coop in the neighbourhood is marked out for attack. The next epidemic may be as severe as the former was mild and all save the old birds may be cleared out in the course of a week and the disease may spread to all the coops in the neighbourhood and be equally fatal. Roup is most common in autumn and spring but may be prevalent at other times provided the weather be mild and moist.

*A short history of some epidemics.*—In 1893 I had experience of the disease in a district where outbreaks occasionally occur and where likewise diphtheria in the human subject is endemic or almost endemic. Here the disease was confined to one hencoop, which was completely cleared out by it. The disease did not spread, but this may be due to the fact that the house was removed some distance from others. The owners of the fowls did not have diphtheria, but diphtheria did appear in the nearest houses to this particular house. This is all one can say. I may here say something about the character of the soil of the district. The surface soil is made up of a sandy loam, while the soil and subsoil consist of a bed of permeable clay.

In the same district in June, 1895, there was an extensive outbreak of roup. 57 hens and chickens died in one yard, 27 in another, 15 in a third, and 15 in a fourth, besides large numbers in other yards, but as I am not sure of the exact details I mention no numbers. These coops were all within a radius of half a mile and the disease started at the foot of a rising ground and slowly spread upwards. How far the disease might have spread it is impossible to say had not the various proprietors disposed of the remaining healthy birds and whitewashed their henhouses and left them untenanted for several weeks. In one of the families at least severe cases of sore-throat occurred, but I could not say that it was diphtheria. Soon after this outbreak among the fowls—but certainly after the epidemic had ceased—two or three cases of true diphtheria were seen in the families of those who had possessed affected animals. For the present I make no deductions, I merely state the facts.

So far I have been reasoning from roup in fowls up to diphtheria in man and for a moment I turn to consider the converse, or the relationship of diphtheria in man to roup in fowls.

In the district already mentioned during 1899 there was an extensive outbreak of diphtheria affecting both children and adults. The epidemic started at the end of January and extended into February, when it abated till the middle of June and continued till the end of December. During all this time, I think I may safely say, not a single case of roup occurred in the area covered by the diphtheria outbreak.

In 1896 I investigated another limited outbreak of roup which took place in another district removed some four miles from the one already mentioned. The owner had about 20 hens, several of which had died during the past two months. The disease had spread to the neighbouring hen-run (divided by a high brick wall), but I failed to get an examination of the fowls in this yard. None of the members

of the family had suffered from sore-throat, and diphtheria was hardly known in the district.

Later (in 1896) I inquired into another outbreak of roup in this district. In this outbreak hens and pigeons were attacked and the death-rate had been high and chiefly among young birds. None of the family had suffered from sore-throat and diphtheria was hardly known in the district.

*Morbid anatomy.*—The following particulars may be taken as typical of the conditions found in all the outbreaks. One bantam hen standing about, or walking lazily when aroused, I examined carefully. The mouth was red, swollen, and highly inflamed, and at the angle on one side was a piece of sloughing tissue which I removed, and part of which I examined under the microscope after staining with picro-carmine solution. The epithelium was healthy in some parts, while in others it showed a granular disintegration. Large cells with one, two, or three nuclei were also seen in the field and some of the cells showed nuclei almost extruded. The mouth contained on certain parts of its surface a fine membrane, a bacteriological description of which follows. The bird from which these specimens were obtained had a very unhealthy appearance, but it emitted no roupy noise. In another hen-run one bird which made a very roupy noise was examined. The mouth was congested and covered with a whitish sticky membrane. The entrance to the air-passages was deeply congested and swollen and this latter probably accounted for the roupy noise. In other birds the membrane was tough, whitish-grey, and possessed a foul odour; in others the mouth, nostrils, gullet, and entrance to the windpipe were deeply injected and were covered by a yellowish tough membrane; in others, again, the eyes appeared to suffer severely. In none of the cases was any paralysis observed, but this may have been owing to the rapidity of the fatal result.

*Bacteriology of the membrane.*—Without entering into details one may say that a micro-organism was found which after the most careful observations could not be distinguished from the Klebs-Löffler bacillus. But it cannot have been a virulent microbe, for the persons handling the affected fowls and without any special precautions did not directly contract the disease. This is an important point, for although, morphologically, the microbe isolated could not be distinguished from the micro-organism of true human diphtheria yet it did not seem to set up the disease in those brought into close contact with it. Further, it must be stated that a bacillus resembling the Klebs-Löffler micro-organism has been found in the mouth of healthy fowls.[1] On the other hand, it must also be stated that according to many reliable observers the Klebs-Löffler bacillus (or one morphologically indistinguishable from it) is often found in the throats of perfectly healthy people.[2]

*Conclusions and deductions.*—1. Roup-like diphtheria (including the somewhat indefinite term "croup") varies in its malignancy, sometimes being mild with only one or two deaths in a large hen-run, while the next epidemic may almost clear out the whole coop. 2. The disease does not appear to be transmissible to man, for those handling the affected birds without any precautions do not suffer from any disease resembling diphtheria. 3. Paralysis was, according to my observations, absent in roup cases. 4. The disease is evidently a highly contagious catarrh and may correspond to the *morve* or fowl glanders of the French.[3] 5. Roup probably differs entirely from "fowl diphtheria," so called. 6. As we have already seen, bird fanciers distinguish between a "dry" roup and a "wet" roup. Dry roup is most likely a simple benign catarrh corresponding to the recurring croup affecting children, especially those inhabiting valleys and near a river bank. Wet roup, on the other hand, in its malignancy resembles diphtheria and membranous croup. 7. The micro-organism of roup (the wet variety or malignant variety) probably lives for a considerable time at least in the earth near the surface[4] and thus it is readily spread from animal to animal (as well as by direct contact with affected birds). 8. Conditions of soil and surroundings favourable to the spread of diphtheria would likewise appear to favour the spread of roup in fowls.

Leeds.

[1] Dr. Allan MacFadyen and Dr. Hewlett, Brit. Med. Jour., April 21st, 1900, p. 994.

[2] Park and Beebe, quoted by Osler, Principles and Practice of Medicine, second edition, pp. 103 and 104. Others have also discovered the microbes in throats which were apparently healthy.

[3] M. Gallez fils made a report to the Belgian Academy of Medicine on "The Relation of Diseases of Fowls to Diphtheria." I have not seen the report itself but the following summary of it is given in THE LANCET of April 18th, 1896, p. 1082: "There are two perfectly distinct diseases to which such birds as domestic fowls are subject. First a contagious catarrh, called also *morve* or fowl glanders, characterised by a glairy secretion from the mucous membrane of the mouth, nostrils, and eyes, and also by rapid emaciation and paralysis of the legs. It is very contagious and very fatal and may give rise to diphtheria in the human subject. Its primary cause is a bacillus similar to Löffler's but far less virulent. ..... This disease differs from the second one which is known as fowl diphtheria both in its symptoms and in its etiology but has nothing corresponding to human diphtheria except its name."

[4] I found the Klebs-Löffler microbe (or one indistinguishable from it) in organically laden soil (see Brit. Med. Jour., August 22nd, 1896).

[1] Diseases of India, p. 624.

# HYDATID CYST IN A NATIVE OF INDIA.

BY W. J. BUCHANAN, B.A., M.B. DUB.,
MAJOR I.M.S.; SUPERINTENDENT, CENTRAL JAIL, BHAGALPUR.

THE following case is published not on account of any clinical interest which it may have, but solely to put on record the fact that hydatid cysts are found, though very rarely, in natives of India who have never left their homes.

A native of the district of Bhagalpur was sent to jail in August, 1896, pending trial for rioting and murder. He complained at once of fever and pain in the right side and was admitted to hospital. On examining him I discovered a large abscess-like tumour in the right flank. No point of fluctuation being found I put in an aspirator needle and evacuated about a pint of highly fœtid thin pus-like fluid. The cavity of the cyst or abscess was then laid open, drained, and washed out with antiseptic lotions. In spite of this the patient did not improve and his temperature remained high (from 102° to 103° F.) up to the time of his death two days after. Death, I believe, was due to septic poisoning from the contents of the suppurating cyst. The abscess did not communicate with the peritoneal cavity.

The post-mortem examination made a few hours after death showed a large abscess cavity extending from the mid-axillary line, below the costal arch, up to the spinal column. All the other organs were found to be normal, but on removing the liver a yellow-white patch of cartilage-like colour was seen on the upper diaphragmatic surface of the right lobe of the liver. On cutting into this a considerable quantity of thin clear limpid fluid poured out containing numerous small cysts of a mother-of-pearl colour. The parent cyst was about as large as an infant's skull. Recognising it to be an hydatid cyst and knowing the extreme rarity of this affection in natives of India I did not further disturb the parts, but sent the liver to the professor of pathology at the Medical College, Calcutta, Dr. F. J. Drury, who reported to me as follows: "It is undoubtedly an hydatid cyst, containing a number of daughter and granddaughter cysts and numerous degenerated scolices." The abscess appeared to me to be a cyst which had suppurated. No cysts were found in any other organ.

Though not unknown, it is very rare to find this disease in India. Several cases have been recorded, but generally in Europeans or natives of India who have lived for some time in other countries. There are four specimens in the Calcutta Medical Museum, two from Europeans and two from persons of unrecorded nationality. Dr. Drury found hydatids post mortem in the body of an Eurasian who had lived in Australia. The Lahore Medical College Museum also contains a few specimens, but the nationality of the patients from whom they were taken is not known. Chevers[1] writes: "Our only evidence that hydatid disease can *originate* in India rests upon the debatable case of a low caste woman of Bhopal (Central India) who died with hydatids of the spleen." In this case, the woman being of the "sweeper" caste, who take care of and feed dogs, it is easy to understand the source of infection. Other cases are cited by Chevers, but in none of them is there clear evidence that the disease could not have been acquired out of India. It is this point which gives special interest to the present case, for I have ascertained from the deceased patient's family that *he never left his native home* except for a few months some years ago when he worked at the Raneegunge coal-mines in a neighbouring district.

The comparative exemption of natives of India from hydatid disease is strange as Dr. Cleghorn many years ago proved that tænia echinococcus very frequently occurred in cattle and sheep slaughtered for food in the Punjab. The same writer even started a theory that many cases of liver

abscess *might* be due to suppurative changes in hydatid cysts previously existing in the liver. This, however, has never been proved. Davidson in his "Geographical Pathology" makes no mention of India in his account of this disease and, strangely, the articles in Quain's Dictionary on this subject give no details as to the distribution of the parasite. The above case, however, proves beyond a doubt that hydatid cyst can occur in a native of India who has never left his own country.

Bhagalpur.

## NOTE ON A NEW MEDIUM FOR THE GROWTH AND DIFFERENTIATION OF THE BACILLUS COLI COMMUNIS AND THE BACILLUS TYPHI ABDOMINALIS.

BY ALFRED THEODORE MACCONKEY.

(*From the Thompson-Yates Laboratories.*)

IN this medium advantage is taken of two well-known facts: (1) that the salts of bile are precipitated by acids, and (2) that bacillus coli communis produces acid in the presence of lactose while bacillus typhi abdominalis does not. The composition of the medium is sodium glycocholate,[1] 0·5 per cent.; peptone, 1·5 per cent.; lactose, 0·3 to 0·5 per cent.; agar, 1·5 per cent.; and tap-water, q. s. The lactose is added after filtration.

If stab cultures be made in this medium with bacillus coli communis and bacillus typhi abdominalis and incubated at 42° C. for from 24 to 48 hours it will be found that the tube inoculated with bacillus coli communis has become cloudy while the tube containing bacillus typhi abdominalis remains quite clear. If glucose be used instead of lactose both tubes become cloudy, but the cloudiness due to bacillus coli communis begins from below and that due to bacillus typhi abdominalis from above. In plates made with the glucose medium incubated for 48 hours at 42° C. and then left for from three to four days exposed to the light at room temperature the colonies gradually become orange coloured.

Though my experiments are not quite concluded I venture to draw the attention of bacteriologists to this medium because it has a more marked inhibiting effect than carbolised media upon the growth of ordinary soil and water organisms and may prove useful to those who are engaged in examining water, soils, and food-stuffs.

[1] The sodium glycocholate was supplied by Messrs. Baird and Tatlock and is, I understand, a mixture of the glycocholate and taurocholate.

THE EPILEPTICS AT WITHINGTON.—The Chorlton Board of Guardians are not at ease about the sane epileptic patients in their charge. From want of accommodation they are at present compelled to occupy the same wards as the imbecile and insane patients. This is obviously a state of things that should be remedied as soon as possible, for to some sane people, even though paupers, such association would be absolutely cruel. Dr. Rhodes said that the guardians were not responsible and that the blame should be laid on the Local Government Board who "were in default through their delay in giving sanction to the scheme which would make provision for these unfortunate people." Other places had the same complaint to make. Few will be found to contradict his further statement that "the methods of the Local Government Board were far too slow." He said he called a few days before at their offices and complained of the manner in which the Board treated the guardians, giving quite "a bit of his mind" to the, no doubt, astonished officials—i.e., if they could be astonished, for by this time such complaints must have lost all their novelty. "He considered the present methods of the Local Government Board were neither satisfactory nor even courteous to the guardians and were certainly not creditable to the former authority. He hoped the guardians would not further delay the provision of the additional accommodation at Withington workhouse. The treatment of epileptics was a matter concerning not merely the guardians of the Chorlton Union but almost every board in the country."

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.**

## ROYAL FREE HOSPITAL.

### A CASE OF OBSTRUCTION DUE TO NEW GROWTH OF THE SIGMOID FLEXURE; INGUINAL COLOTOMY, FOLLOWED LATER BY RESECTION OF THE GROWTH; RE-ESTABLISHMENT OF THE INTESTINAL TRACT; RECOVERY.

(Under the care of Mr. W. H. BATTLE.)

AT the present day the treatment of malignant growths of the large intestine presents a very great contrast to that which was recognised as advisable even a few years ago. We seldom receive any intimation that a malignant growth is forming in the colon until symptoms of subacute or chronic intestinal obstruction arise. When such a case presents itself what treatment should be followed? Twenty, or even ten, years ago it was customary to remain satisfied with the performance of a colotomy, no attempt even being made to interfere with the primary cause of obstruction. At the present time much better results are obtainable. If the symptoms of obstruction are very severe a preliminary colotomy may be advisable, but in the less acute cases by far the best treatment is to resect the affected portion of bowel and re-establish the intestinal channel.

A man, aged 41 years, was admitted into the Royal Free Hospital on March 11th, 1900, complaining of intestinal obstruction. A fortnight before admission he had severe pain all over the abdomen and on March 1st his bowels were opened, but there had been no motion since, though some flatus had passed. As the abdominal pain steadily grew worse he took to his bed on the 4th. He was treated by a medical man but the pain did not abate. On the 6th vomiting commenced and had continued at intervals; he described the vomited matter as resembling coffee-grounds. He had been able to take nothing but milk and water since the 5th. There was nothing remarkable in his family history.

On admission the patient looked thin and ill; the abdomen was distended and tympanitic on percussion, but no distinct swelling could be made out and no peristaltic movements were visible. On examination per rectum nothing abnormal was discovered. Obstruction of the large bowel was diagnosed and, in the absence of Mr. Battle, Mr. T. P. Legg, the senior resident medical officer, decided to operate.

The skin of the abdomen having been washed and the patient anæsthetised an incision three inches long was made at right angles to a line drawn from the umbilicus to the anterior superior iliac spine, one-third of the distance from the spine, with the centre of the incision on the line. The incision was deepened until the peritoneum was reached; when this had been incised the large intestine was found and the sigmoid flexure was drawn out into the wound. The bowel was greatly distended and was secured to the edges of the wound by two stitches which did not penetrate the intestinal wall. Another stitch drew together the edges of the incision under the bowel, passing through the mesentery; this was in order to form a well-marked spur. The bowel was then covered with protective and gauze and the wound was dressed. On the next day the patient felt a little better and had no vomiting, but the bowels did not act. On March 13th he vomited a little. The intestine was opened and a Paul's tube was inserted for drainage; his temperature had not exceeded 100° F. Much fæcal matter came away, but he vomited no more. The patient's condition steadily improved and the wound looked well. By April 5th he was allowed to get up every day.

On April 6th Mr. Battle decided to explore the abdomen for the purpose of discovering the cause of the obstruction and removing it if possible. The skin having been cleansed

Mr. Battle made a median incision, four inches in length, between the umbilicus and the pubes; the recti were separated and the peritoneum was incised. The operator's hand was then introduced and a hard mass was felt at the lower part of the sigmoid flexure, with some scattered hard mesenteric glands. The growth was brought outside the wound and as it was distinctly limited it was decided to remove it. The wound all round the exposed piece of bowel was packed with gauze and clamps of rubber-tubing were passed through holes in the mesentery and fastened with pressure forceps; two of these clamps were placed on each side of the growth and an inch apart. The bowel was then divided with scissors between each pair of clamps and the growth with some of the corresponding portion of mesentery was removed. There was some amount of hæmorrhage during the division of the mesentery, but it was soon stopped with pressure forceps. The divided vessels were then tied and the wound was packed afresh with gauze and the cut ends of the bowel were washed. These ends were then inverted and sewn up with Lembert's sutures. The pieces of bowel were then placed side by side with the ends in opposite directions and so placed that the posterior aspect of one piece lay against the anterior aspect of the other. Then the serous coats were united by continuous Lembert sutures for two inches in the long axis of the bowel, the ends of the silk being left long for future use. An incision of two inches in length was made in each piece of bowel parallel to the seam and passing through all the coats of the intestine. The adjoining edges of the incisions were united by continuous sutures passing through the mucous and muscular coats. Then a needle was threaded on to the long end of silk left from the first seam and the remaining portion of the suturing of the serous coat was performed by Lembert's method. The bowel was washed and replaced in the abdomen. The abdominal wall was then closed in successive layers and the wound was dressed with cyanide gauze. A length of about six inches of the bowel was removed. On section it was found that the lumen was almost closed; it proved to be a columnar-celled carcinoma.

The patient did well after the operation and free escape of fæcal matter occurred from the rectum through a tube which had been placed there to prevent any accumulation. He steadily progressed and on April 23rd a curved piece of wood covered by rubber tubing was introduced into the colotomy wound to press on the "spur." It caused a little pain, but the spur became much less obvious. The bowel was washed out daily both through the anus and through the colotomy wound. He was allowed to get up every day. On May 5th a different instrument was employed to exert pressure on the spur and in a few days solid motions were passed through the rectum. On May 15th Mr. Battle decided to close the colotomy opening. After the patient was anæsthetised and the skin around the wound had been washed an oblique incision was made above and another below the opening, and these were then joined so as to surround the artificial anus. By careful dissection the edges of the opening were dissected up without opening the general peritoneal cavity. Then the opening in the mucous membrane of the bowel was closed with 16 silk interrupted sutures. The sub-peritoneal tissue was united over the stitches and the muscles and skin were sutured separately. A drainage-tube was inserted.

After the operation the patient progressed satisfactorily. A small quantity of pus escaped for a few days from the tube and after the latter was removed a small collection of pus was found and opened, but later the wound healed and on March 5th the patient left the hospital completely recovered. He was seen at the hospital on June 29th, having recently returned from a convalescent home. He looked bronzed and well, having gained seven pounds in weight during his stay at the home. The bowels acted regularly and without difficulty; there was a small sinus in the site of the former colotomy opening from which there had been a little fæcal-smelling discharge.

*Remarks by* Mr. BATTLE.—On account of the distension of the abdomen and general condition of the patient no search was made for the cause of the obstruction when colotomy was performed. It appeared probable that this cause was a malignant stricture of the large bowel, probably the upper part of the rectum or sigmoid flexure, and it seemed a pity to let a man with the possibilities for further usefulness of this patient pass out of observation condemned to the life of an invalid, with a prospect of death in a few months from extension of growth to other parts, when it might be possible to lengthen life by removal of the growth and make it much more comfortable by a lateral anastomosis and closure of the colotomy wound. The details of the case do not differ much from those given in the description of similar cases treated in this way by me, and I need not refer to them. The apparatus made for getting rid of the spur is perhaps of interest, as it has proved useful. It consists when completed of a T-shaped instrument which can be easily made in the wards without special apparatus. Two pieces of ordinary firewood are taken, a long one (about three inches in length) and a short one (about two inches). The long one is drilled longitudinally through its centre by means of a red hot skewer; the short one is shaped like a bow. Both are covered with drainage tubing, a double piece of thread encircling the smaller is carried from its convex border up the centre of the longer one. The smaller piece is then placed astride the spur of the colotomy opening and the long arm is fastened to it by pulling on the string which is secured so as to complete the T. Pressure is applied by means of the dressings and body bandage. It is inexpensive, easily made, permits fæcal matter to pass it, and effectively acts on the spur. I have tried other methods of getting rid of the spur after colotomy, but none have given me quite such satisfactory results.

## GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

### A CASE OF PNEUMONIC PLAGUE TREATED BY LARGE DOSES OF CARBOLIC ACID; RECOVERY.

(Under the care of Mr. J. BELL, Assistant Superintendent.)

As we have on some previous occasions pointed out, carbolic acid is much less poisonous than it is usually considered to be. The toxic symptoms which appear when the drug is taken in an undiluted form are almost entirely referable to the local caustic action. When taken with free dilution phenol gives rise to very few symptoms indeed; in many cases even the darkening of the urine ("carboluria") may not be present. With regard to the question of its therapeutic value in plague, it is as yet impossible to form an opinion, and we await with much interest the result of the extended trial of carbolic acid in the treatment of plague which Mr. Bell tells us he is carrying out.

A healthy Greek sailor, aged 24 years, was admitted into the Government Civil Hospital, Hong-Kong, on April 17th, with gonorrhœa. His temperature was 101° F. and save for the local condition he seemed to be well and made no complaint. His temperature for the next two days kept slowly rising and his tongue became more furred till the morning of the 20th when he was very apathetic, the temperature being 105° and the tongue very dry and furred; there were no buboes. The principal civil medical officer (Dr. J. A. Lowson) now saw the patient and agreed that there was a probability that he was suffering from plague. His lungs were full of coarse râles all over, but there was no dulness. Shortly after the consultation he began to spit thick bloody sputum, which on examination was found to be full of typical bacilli. As he was too ill to be moved to the Infectious Diseases Hospital he was at once isolated and put on a suitable diet with stimulants. Hypodermic injections of digitalis and strychnia were made every four hours and 12 grains of pure carbolic acid in solution were given every three hours. He continued to be very ill all day, the pulse was very quick and intermittent, he was delirious, and the temperature ranged between 105° and 106·4°. On the next day there was a marked though slow change for the better. His temperature slowly fell to 102° and only rose to 103·4° in the evening. The tongue was more moist, though it was still very furred, and the breath was offensive. Injections were not required so frequently as his pulse was stronger and not so quick, varying from 94 to 102. Bacilli were still in the sputum both morning and evening. His temperature slowly fell each day till the 24th, when it became normal. The sputum soon ceased to contain blood, though it was very free for 48 hours. His tongue remained moist and slowly cleaned and the patient expressed himself as feeling much better in every way. On the 24th there was no sputum and the lungs were quite clear. The carbolic acid was decreased after 48 hours to four hourly doses and was stopped on the 24th, from which date the patient convalesced rather rapidly. It was ascertained through his friends that he contracted the original trouble

at a house in the infected area some 14 days previously to his admittance to hospital.

*Remarks by* Mr. BELL.—This form of plague is extremely fatal and I know of no cure here. The case came under treatment early and he was a strong healthy patient, but the effect of the carbolic acid was most marked, and I report the case in the hope that others will at once try it, especially on Europeans, who come under treatment as a rule early. It is now being tried on every case admitted to the Plague Hospital, and as soon as 50 cases have been under treatment the results will be communicated. In all this patient had 280 grains of carbolic acid without any symptoms of poisoning by the drug. The original trouble for which he came to hospital was unaffected both by the plague and its treatment.

# Medical Societies.

## PATHOLOGICAL SOCIETY OF LONDON.

*The Bacteriology of Dysentery, Yellow Fever, and Diphtheria.—The Way in which Bones Break.—The Relation of Mosquitoes to Malaria.—The Composition and Action of Brown-Séquard's Fluid.—Neutralisation of Culture Media.*

A MEETING of this society was held on June 30th in the Pathological Laboratories of the University of Cambridge by the invitation of Professor SIMS WOODHEAD, Dr. W. OSLER occupying the chair.

Professor SIMON A. FLEXNER (Philadelphia) made a communication on the Pathology of Tropical Dysentery. He said that an acute and a chronic form could be distinguished on clinical and pathological grounds. The acute form might terminate fatally in from 48 to 72 hours or it might be recovered from or become chronic. The chronic dysentery *per se* of the tropics was amœbic in nature. The acute variety was not caused by amœbæ; but from the stools a bacillus had been isolated differing from the normal intestinal flora and showing specific properties. It agglutinated with the blood serum of dysenteric cases. Its properties placed it very near the bacillus typhosus, from which organism it could be distinguished by biological and physiological peculiarities. The bacillus which was obtained from cases of dysentery occurring in and about Manila apparently was identical with an organism isolated by Shiga from the disease endemic in Japan. From a case of dysentery contracted in Puerto Rico the same organism had been obtained.

Professor FLEXNER also made some remarks on the Supposed Bacillus of Yellow Fever. The widespread fatty degenerations produced in the viscera in this disease were not special to this organism. Other organisms produced these changes and also hyaline necroses, just as the yellow fever bacillus did.

Dr. J. GRIFFITH (Cambridge) gave a demonstration on the Way in which Bones Break. He referred chiefly to the method of breaking by torsion. That was the easiest method of breaking a bone. He illustrated his remarks in the case of the femur, the ribs, and the clavicle and the tibia. A spiral fracture resulted from torsion. If the long axis of the bone was bent as well as twisted the spiral would be shorter.

Dr. GEORGE H. F. NUTTALL (Cambridge) gave a demonstration upon the Relation of Mosquitoes to Malaria. The demonstration consisted in the exhibition of the developmental changes undergone by avian and human parasites in species of culex and anopheles respectively, these being illustrated by means of specimens, photo-micrographs, and drawings. Living specimens of anopheles maculipennis, caught by Dr. Nuttall in the vicinity of Cambridge, as also of culex, were shown in tanks, and their biological characters were referred to. Maps showing the geographical distribution of malaria over the world and its former prevalence in England were exhibited, and the present geographical distribution of the genus anopheles, as far as was known, was described. A decided agreement between the former distribution of malaria in England and the distribution of anopheles (anopheles maculipennis, anopheles bifurcatus, anopheles nigripes) at the present time was observable. The studies regarding this distribution were, however, not as yet concluded. The development of human malarial parasites had been observed in nine species of anopheles in different parts of the world (India, Africa, Italy, and the United States), whereas all experiments made with species of culex, at least ten (in Italy, Africa, and India), had given negative results. Although it was quite possible that a species of culex might be found which was capable of serving as intermediary hosts to human parasites, the evidence hitherto gathered pointed solely to anopheles as fulfilling this function. The interesting fact that anopheles persisted in England whilst malaria had to all appearances disappeared was a subject for further investigation. The disappearance of the malarial parasites might very well be due to a progressive diminution in the number of anopheles, a plentiful supply of which was absolutely necessary for their continued existence. There might, however, be other factors concerned in their disappearance which still remained to be discovered. The suggestion that it might be due to the anopheles in England not sucking blood was untenable, for Dr. Nuttall had proved the contrary by experiments upon himself.

Dr. LOUIS COBBETT (Cambridge) showed some Cultures of Bacillus Diphtheriæ which had been obtained from the nasal discharge of a pony. The original culture was sent by Dr. Mearns Fraser, medical officer of health of Portsmouth, who while investigating the causation of an attack of diphtheria in a little girl had noticed that her father's pony was suffering from a purulent and slightly sanguineous nasal discharge. Experiments were described which established the identity of the bacillus. The horse had hitherto not been known, among animals, to suffer from diphtheria.

Dr. COBBETT also described experiments showing that Diphtheria Toxin was Excreted in the Urine, both from susceptible and from relatively insusceptible animals—e.g., the guinea-pig and the rat. From these animals, injected with diphtheria toxin, the urine secreted during the next few hours was collected with a catheter and injected subcutaneously into guinea-pigs. It produced an inflammatory swelling at the seat of inoculation, followed by dry necrosis, falling out of the hair, and in one instance death. Control experiments were made with the same urine to which a little antitoxin had been added. Other control experiments also were made with the urine of normal animals.

Dr. W. E. DIXON (Cambridge) made a communication on the Composition and Action of Brown-Séquard's Fluid. He gave an abstract of the results of experiments which he had performed by injections of orchitic extract of different animals. The composition of orchitic extract of all animals was practically identical. The active principles consisted chiefly of two bodies—(1) nucleo-albumin; and (2) spermine. The former he showed was very toxic, producing great cardiac inhibition reflexly through the cardiac nerve centres. The latter, spermine, which was also present in considerable quantity in semen, produced its effect principally by producing congestion of the abdominal viscera, including both the testes and ovaries.

Dr. J. W. H. EYRE made a communication on the Neutralisation of Culture Media. He remarked on the uncertainty of litmus paper and of litmus solution. He advocated a standard medium among English bacteriologists by the use of phenyl-thalein as an indicator of the alkalinity of culture media.

Votes of thanks to Professor Sims Woodhead and the University authorities and to those who had communicated their researches terminated the meeting.

## EDINBURGH OBSTETRICAL SOCIETY.

*Exhibition of Specimens and Micro-photographs.—Suppression of Urine following Cystitis.—Cæsarean Section followed by Sub-peritoneal Hysterectomy.—Cleansing the Peritoneum during Cœliotomy.—Eclampsia treated by Saline Effusion and Veratrum Viride.*

A MEETING of this society was held on June 27th, Dr. R. MILNE MURRAY, the President, being in the chair.

Professor A. R. SIMPSON showed (1) a Dermoid Cyst of the Ovary which formed the channel of a Fæcal Fistula; and (2) two Fibroid Uteri removed by Panhysterectomy.

Dr. J. LAMOND LACKIE showed an Early Extra-uterine Gestation.

Dr. J. HAIG FERGUSON showed a Uterus removed by Vaginal Hysterectomy for Cancer of the Cervix.

Mr. J. STUART NAIRNE (Glasgow) showed a Uterus with Placenta *in situ* removed from a Dwarf by Cæsarean Section at full term.

Dr. N. T. BREWIS showed (1) a Subperitoneal Fibroid

removed from the Uterus; and (2) an Appendix removed just on the point of bursting.

Dr. JAMES FOULIS exhibited Micro-photographs of Sections of the Embryo and Yelk Sac of the Deer showing the double layer of the amnion continuous with the somatopleure.

Dr. LAMOND LACKIE read a paper on a case of Suppression of Urine following Cystitis. The patient first came under observation eight years ago when she had all the symptoms of chronic cystitis. The usual treatment by irrigation, diet, and drugs was adopted without effect and the pain during micturition continued in an aggravated degree. The urethra was dilated by Hegar's bougies so that the bladder might be explored. This gave complete relief of all the symptoms, but, unfortunately, the patient never regained control over the act of micturition. By the aid of a portable urinal, however, she became fairly comfortable. Although repeatedly advised to do so she always refused to submit to any further treatment to cure the incontinence as she dreaded a return of her former symptoms. In March of this year Dr. Lackie was called to see her and was informed that except for some sickness she was quite well, but she had not passed any urine for nine days. Diuretics were given and hot-air baths were used with the result that 24 hours afterwards urine commenced to flow freely. For eight days the patient improved when suddenly excessive sickness set in and complete suppression of urine supervened. She had none of the usual symptoms of uræmia which are supposed to be always present in non-obstructive suppression. The patient gradually became comatose and died 48 hours after the onset of the second attack of anuria. Post-mortem examination showed that the bladder was reduced to the size of a small tube and that the right kidney was in a condition of acute septic nephritis, whereas the tissue of the left kidney was entirely replaced by tuberculous material. In conclusion Dr. Lackie discussed the literature of the subject.

Dr. N. T. BREWIS read notes of a case of Cæsarean Section followed by Sub-peritoneal Hysterectomy. It was performed at term for contracted pelvis. The patient was pregnant for the fifth time. Her first child was stillborn at seven months, delivery being brought about by forceps and great force being required to effect it. Two early miscarriages followed and then came a labour at full time which was completed by basilysis. The true conjugate measured from two and a half to two and three-quarter inches. The question of the particular operation to be adopted in this case was discussed. Symphysiotomy was out of the question because it had been premised that measures would be taken to prevent a future conception. One of the following operations might be chosen: (1) Sänger's Cæsarean section; (2) Porro-Cæsarean section; (3) Cæsarean section followed by panhysterectomy; or (4) Cæsarean section followed by sub-peritoneal hysterectomy. Dr. Brewis had performed the Porro operation some years ago in two cases and panhysterectomy four times for new growths between the fourth and sixth months of pregnancy with success. The latter operation was attended with no special difficulty and was as easily performed as the Porro operation. The subsequent risks of hæmorrhage and sepsis, he considered, were greater with the Porro operation. He would restrict Porro Cæsarean section to cases where the patient was in an exhausted state and where the operator had not proper assistance, as it was an operation which could be done very quickly. He decided against improved Cæsarean section on account of the danger of the subsequent gaping of the uterine wound, hæmorrhage, and peritonitis, and because the patient was liable to all the risks associated with the puerperium. There was little to decide between Cæsarean section followed by panhysterectomy and that by subperitoneal hysterectomy. The latter method was selected owing to his having had experience of the technique in removing fibroids. In this case the child was born alive and the mother made an easy recovery.

Dr. N. T. BREWIS also read a paper on Cleansing the Peritoneum during Cœliotomy. Irrigation was now less frequently resorted to than formerly, as surgeons had more confidence in their technique and in the power of the peritoneum to dispose of fluids and minute solid particles and to resist the invasion of pyogenic bacteria. There was, however, special danger of peritoneal contamination in the bursting of a pyosalpinx, ovarian abscess, or similar condition during operation. In removing pus sacs of the appendages the patient was placed in the Trendelenburg position. On opening the peritoneal cavity numerous adhesions would probably be found between the omentum and pelvic organs, intestines, and parietal peritoneum. These being separated would be drawn up and packed off with gauze pads, so that the only part of the intestinal tract left in the pelvis was the rectum. The pus sacs could now be liberated and brought out through the abdominal wound. Careful handling was necessary to prevent rupture, and with this object the sac might be aspirated before it was drawn up. In this way the operator would in many cases be able to successfully remove the diseased parts without contaminating the peritoneum. But in spite of precautions pus would escape by rupture of thin walls or from swellings where its presence was unsuspected. Was the surgeon then to consider the pus sterile and unlikely to produce serious results and simply to trust to sponging; or was he to look upon the presence of even a small quantity of pus as dangerous and to do all in his power to get completely rid of it? Most surgeons adopted the latter view. The plan adopted should not spread the infection and the irrigation should thus be confined to the peritoneal area already contaminated. Care should be taken to prevent the water from flowing up among the intestines and distributing the infection. Whenever pus was seen to be escaping from a ruptured sac the part should be covered over with a large gauze pad. Then the general cavity of the peritoneum was carefully packed off and protected in a similar manner. The diseased structures were then removed. A long pair of forceps or blunt-pointed scissors were then passed into the vagina and their points were pushed through the posterior fornix into the pouch of Douglas; the opening was enlarged by separating the blades. The pelvis was then lowered and its cavity was irrigated from above by introducing the end of the douche through the abdominal wound. The stream of water or normal saline solution washed out the pelvis and escaped through the opening at the bottom of the pouch of Douglas into the vagina and out at the vulva. By this method there was no chance of infection being carried up into the general peritoneal cavity and it permitted of the most thorough cleansing.—Mr. J. STUART NAIRNE, Dr. F. W. N. HAULTAIN, Dr. J. W. BALLANTYNE, Dr. J. FOULIS, Dr. W. FORDYCE, and the PRESIDENT discussed the papers.

Dr. J. W. BALLANTYNE read a clinical note on a case of Eclampsia treated by Saline Infusion and Veratrum Viride. The patient was at the sixth month of her second pregnancy; her first had passed off normally without any appearance of dropsy or abnormal symptoms. For a week before the fits she had noticed that her urine was unusually pale and for a month she had suffered from some swelling of the legs. Shortly before the first fit she experienced a severe pain in the epigastrium followed by violent headache. The urine passed previously to the fit contained two-thirds of albumin and nothing was found on microscopical examination. The condition was treated with enemata of bromide of potassium and chloral hydrate and hypodermic injections of veratrum viride, and the convulsions were controlled by the inhalation of chloroform. A pint and a half of saline infusion were injected into the loose tissue below the breasts. Shortly afterwards the urine was drawn off by catheter, the patient being comatose, and was found to amount to several ounces; it contained blood and more than two-thirds albumin, with numerous epithelial and granular tube-casts. As the condition was grave it was thought advisable to procure abortion. This was done by inserting and leaving a bougie in the uterus; neither Champetier de Ribes's nor Barnes's bag would pass the internal os. Labour pains came on very slowly and the child was born on the next day. In all 18 fits occurred. The fits had subsided and the patient had regained consciousness before the labour had properly started. As the fœtus was born alive fœtal death could not be invoked as a cause of the cessation of the fits. The patient steadily improved and in a week the urine contained only a trace of albumin and in 16 days it was normal. An interesting point with regard to the urine was noticed. Specimens were preserved of urine passed before the onset of the convulsions, during the fits while the patient was comatose, after the delivery, and daily for the next four days. All were kept in corked bottles with no special precautions. Three weeks afterwards the last four were found to be alkaline in reaction and then showed signs of decomposition; later specimens showed more marked evidences of decomposition. The first three specimens, however, which were much older than the others, were still all acid; the first one, although acid, was now beginning to show slight signs of

decomposition; the second one, drawn off during the eclampsia, was quite undecomposed, although nearly a month in the bottle; and the third, which was also acid, was equally sweet.—In the discussion it was suggested that the non-putrefaction might be due to some special recondite substance in the urine associated with the occurrence of eclampsia and excreted by the kidney; also that it might be due to the presence of chloral in the urine, but the first specimen was obtained before any drug was given.—The PRESIDENT and Dr. FOULIS discussed the paper.

## ROYAL ACADEMY OF MEDICINE IN IRELAND.

### SECTION OF SURGERY.

*Dupuytren's Contraction of the Palmar Fascia.—Operation for Cleft Palate.—Truss Gauge.*

A MEETING of this section was held on May 11th, Mr. R. L. SWAN, the president, being in the chair.

Dr. J. KNOTT read a paper on Dupuytren's Contraction of the Palmar Fascia. He had recently observed a series of cases in elderly soldiers, most of whom gave no history of local injury or irritation. One had suggested that the prolonged holding of the rifle had something to do with the flexion. One had received a bullet wound in the groove between the thenar and anti-thenar eminences of the right hand. The cicatrix was limited to this region, yet it proved the starting-point for the contraction of the whole palmar fascia, the condition afterwards developing on the left side, as it had done in all the cases which he had seen. He had recently met with two strikingly contrasted cases — one in a free-living man who presented the extreme degree of flexion in the ring finger, the little finger, and the middle finger of both hands; the other in a teetotaller, in whose case the deformity was but slight but perfectly typical. Dr. Knott looked upon the process as essentially of the nature of gouty or rheumatic-gouty inflammation. He had operated on two cases with a fair degree of success, but from the nature of the conditions he considered a "perfect cure" impossible in any case.—Mr. E. H. BENNETT remarked that he had the condition, which had developed in his right hand and was beginning to develop in the left also. He could appreciate the justice of the remark that it commences in the ring finger. Being a racket player he might attribute it to the irritation caused by the butt-end of the racket, but this explanation would not apply to the left side, and its symmetrical development therefore puzzled him. He had dissected many preparations, but could discover no satisfactory explanation of its causation.

Mr. TAYLOR described his New Operation for Cleft Palate, drawing special attention to the anatomical facts that the principal vessel distributed to the hard palate reaches it at its posterior part, having emerged from the posterior palatine foramen at the inner side of the alveolus of the last molar tooth, and that in the palate this vessel takes a curved course close to the alveolar border of the maxilla, its main offshoots proceeding towards the middle line from its inner concave border. He stated that his operation was essentially indicated for clefts of the complete variety—namely, those which advanced quite up to or near the teeth in front. For the operation the patient was put in Rose's position on a low operating table. A Smith's gag was introduced into the mouth, and the edges of the cleft were pared freely. Blood and saliva were removed by a suction apparatus and as far as possible sponging was dispensed with. A curved incision was made on each side close to the alveolar margin of the palate from the level of the last molar tooth behind, and terminating in front of the middle line behind the incisor teeth. The posterior palatine artery was thus included in the flap. The latter was reflected on each side by means of a rugine, and not by any of the various forms of raspatory which are usually recommended. The flap, thus completely lifted up from before backwards, was held back and the junction of the soft with the hard palate was divided with a knife or with a pair of curved scissors. Bleeding was easily controlled by digital pressure. Silkworm gut or silver wire was employed in bringing the edges of the flaps together and Mr. Taylor laid great stress upon the facilities afforded by the mobility of the flaps in carrying out this step of the operation. The free ends of the flaps in front were securely fixed to the tissue of the gum behind the incisor teeth, care having been taken in marking out the flaps to leave enough for this purpose. Should it be necessary a lateral incision might be made on each side at the junction of the hard and the soft palate, and at the inner side of the hamular process, so as to relieve tension and secure rest to the palate during the process of healing. — Mr. E. H. BENNETT, Dr. G. J. JOHNSTON, Mr. J. LENTAIGNE and others discussed the paper.

MR. T. KELLY of Enniscorthy described the Truss Gauge, an instrument consisting of two overlapping steel truss springs. On the surfaces where this overlapping took place divisions were marked, and in each division there was a corresponding character or number. In the case with each set there was a bundle of cards with divisions printed to correspond to the division on the truss gauge, so that the necessary dimensions could be filled in and transmitted to the instrument maker.

### SECTION OF ANATOMY AND PHYSIOLOGY.

*Cranio-cerebral Topography.—Nasal Fossæ.—Configuration of the Heart.—Lymph Circulation.*

A meeting of this section was held on June 1st, Professor D. J. CUNNINGHAM being in the chair.

Dr. E. H. TAYLOR read a paper on Recent Researches on Cranio-cerebral Topography conducted by himself and Dr. W. S. Haughton. They recommended the employment of the following landmarks, which were easily located and were of undoubted utility: the centre of the naso-frontal groove or nasion; the external angular process of the frontal bone; the depression immediately above it, or the orbito-temporo angle; the external auditory meatus; the pre-auricular point; the zygoma; the external occipital protuberance or inion; and a straight line connecting the nasion and the inion. The procedure adopted was as follows. Several subjects, of ages varying from one year to 60 years, were injected with a 10 per cent. solution of formalin. By this means the tissues were well hardened and could be readily cut *en bloc*. The head in each case was removed from the trunk and was divided accurately in the sagittal plane. The cerebral hemispheres were then removed, and this was easily done in consequence of the very firm consistency of the brain substance. Before removal, however, their exact position inside the skull was carefully noted. The pia mater was removed and strips of very soft and pliable tin wire were introduced into the principal fissures. The corresponding half of the skull was now brought down over the hemisphere, which, by its mesial aspect, lay on a smooth slab of glass. Skiagrams were then taken of each half of the head and this part of the investigation was conducted by Dr. Haughton. In all cases good views were obtained, and as the result of the information which they afforded a method was adopted for mapping out the principal fissures, of which the following is a summary. There are three fundamental fissures which it is necessary to localise, as they separate the four main lobes of the brain—namely, the fissure of Silvius, the fissure of Rolando, and the external parieto-occipital fissure. The distance between the nasion and inion is first carefully estimated and is divided into four equal parts. From the orbito-temporal angle a line is drawn to the junction of the third and fourth segments of this line (naso-iniac). It corresponds to the posterior limb of the Sylvian fissure for the greater part of its extent, and is, therefore, called the Sylvian line. The Sylvian point is the term employed to indicate the level at which the main stem of the fissure reaches the outer aspect of the hemisphere and divides into its anterior, vertical, and posterior limbs. It corresponds to the intersection of the Sylvian line with another drawn from the junction of the first and second segments of the naso-iniac line to the pre-auricular point. In certain of the heads examined it would have been more correct to have made this line terminate opposite the centre of the external auditory meatus. The posterior extremity of the Sylvian line overlies the external parieto-occipital fissure. This point represents 75 per cent. of the distance between the nasion and the inion. The general direction of the fissure of Rolando is found by connecting the two following points by a straight line. The upper point is on the middle line of the head and three-quarters of an inch behind the centre of the naso-iniac line, or as near as possible 55 per cent. of the naso-iniac distance. The lower point corresponds to the intersection of the Sylvian line with another line starting from the pre-auricular point and perpendicular to the upper

borders of the zygoma, or to a line connecting the centre of the infra-orbital margin with the centre of the external auditory meatus.—Professor CUNNINGHAM and Dr. DAWSON discussed the paper.

Dr. FAGAN gave a lantern demonstration of a series of normal and pathological Nasal Fossæ prepared to show the various parts of these cavities and their relations to the surrounding structures.

Dr. CHARLES J. PATTEN read a paper on the Configuration of the Heart in Man and some other Mammalian Groups. The communication dealt chiefly with the modifications in form which have taken place in the heart of man following the erect posture. In specially hardened specimens the conical shape of the human heart had almost disappeared. In many quadrupeds which carried the trunk prone the true conical shape of the heart persisted.

Mr. J. S. ASHE read a note on the Lymph Circulation, in which he advanced the view that one of the forces which helped to carry on the lymph circulation was the dilatation of the aorta which took place at each systole of the heart, pressing on the thoracic duct and increasing the pressure in the posterior mediastinum. His theory was illustrated by a schema which showed by means of elastic tubes the suggested effect of the dilatation of the aorta on the thoracic duct.

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ULSTER MEDICAL SOCIETY.—The annual meeting of this society was held in the Belfast Museum on Thursday, June 21st, the President, Dr. James Graham, being in the chair. After the reading of the minutes the various reports were presented and passed. From these it appeared that there were seven meetings held during the past session with an average attendance of 36 members on each occasion. There are now 148 members on the roll of the society, and there is financially a balance in hand of over £55. The following office-bearers were then elected for the session 1900–1901:—President, Professor W. H. Thompson; Vice-presidents, Dr. E. C. Bigger and Dr. R. W. Leslie; Council, Dr. W. Calwell, Dr. H. McKisack, Professor Byers, Dr. John Campbell, Dr. A. Dempsey, and Dr. J. Colville; treasurer, Dr. John McCaw; pathological secretaries, Dr. J. Lorrain Smith and Dr. T. Houston; librarian, Dr. T. S. Kirk; secretary, Mr. Robert Campbell. A discussion took place on a report of a committee appointed by the North of Ireland Branch of the British Medical Association and the Ulster Medical Society in reference to the formation of an Ulster Board for the examination of nurses, but it was decided to refer the whole subject back to the councils of these two societies for further consideration. On the motion of Professor Byers a very cordial vote of thanks was accorded to the retiring secretary, Dr. James Colville, who for the past three years has devoted much time and attention to the affairs of the society.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.—The following have been elected as office-bearers for the ensuing year:—President: Mr. John Ackery. Vice-Presidents: resident, Mr. W. A. Maggs, Mr. Arthur S. Underwood, Mr. F. J. Bennett; non-resident, Mr. J. Henry Whatford (Eastbourne), Mr. G. Brunton (Leeds), Mr. W. S. Woodburn (Glasgow). Treasurer: Mr. W. H. Woodruff. Librarian: Mr. H. Baldwin. Curator: Mr. Storer Bennett. Editor of Transactions: Mr. J. F. Colyer. Honorary Secretaries: Mr. J. H. Mummery (Foreign), Mr. C. F. Rilot (Council), Mr. A. Hopewell Smith (Society). Councillors: resident, Mr. E. Lloyd Williams, Mr. W. J. England, Mr. J. O. Butcher, Mr. J. H. Reinhardt, Mr. H. G. Read, Mr. H. Lloyd Williams, Mr. W. Rushton, Mr. R. Wynne Rouw, Mr. G. Northcroft; non-resident, Mr. Walter Harrison (Brighton), Mr. Alexander Kirby (Bedford), Mr. Martin Henry (Folkestone), Mr. D. Corbett, jun. (Dublin), Mr. Rees Price (Glasgow), Mr. G. O. Whittaker (Manchester), Mr. T. Mansell (Birkenhead), Mr. W. A. Rhodes (Cambridge), Mr. W. Glaisby (York).

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BRISTOL EYE HOSPITAL.—On June 28th and two following days a very successful carnival was held at the Zoological Gardens, Clifton, in aid of the funds of the Bristol Eye Hospital. The carnival was opened by the Dowager Duchess of Beaufort and it is hoped that a considerable sum has been raised for the institution.

# Reviews and Notices of Books.

*Recollections of My Life.* By Surgeon-General Sir JOSEPH FAYRER, Bart., K.C.S.I. London: William Blackwood and Sons. 1900. Price 21*s*.

THIS volume, which is most appropriately dedicated to Lady Fayrer in remembrance of 45 years spent together, is a brilliant record of experiences the equal of which have befallen few members of our profession. It contains the memories of a varied and eventful life, and from the way in which it is written we feel it must have given the author as much pleasure to put together as it does to the reader to peruse. The book will no doubt have a large circulation among the general public, and we can recommend it strongly to Sir Joseph Fayrer's civil brethren, who will thus have very clearly brought before them the great responsibilities attaching to the higher places in medical official life. By the medical officers of the army both at home and abroad the book will be read and treasured as the record of the life-work of a brother-officer who has been peculiarly successful in a higher sense than the one which usually appeals most strongly to human nature.

In some 500 pages Sir Joseph Fayrer has given us a record of the most notable incidents in which he has borne a part. The reader rises from his study of this book impressed with the thoroughness of Sir Joseph Fayrer's life-work, with the high ideal which he as a medical officer has ever sought to attain, with the feeling of how loyal he has been to the great profession of which he is proud to be a member, and how constant he has ever been in promoting the true dignity of the calling which he considers most noble. The story of his life is told in simple language and in a way which makes those who know the author almost feel that he is indeed speaking to them. In other words, the book is not merely a record of the man's doings, but also of the man himself—of his strong individuality.

The son and grandson of naval officers, Sir Joseph Fayrer in early days was attracted by the sea. His father, who retired from the navy with the rank of commander, was afterwards one of the pioneers of steam navigation and commanded the *Great Liverpool*, which was then the largest ocean-going steamer. At the age of 16 years young Fayrer was appointed a midshipman in the West Indian Mail Steam-packet Service and sailed under Captain Hart to the West Indies and South America, but in his nineteenth year, while at Bermuda during an epidemic of yellow fever, he became strongly impressed with the importance of the medical profession, seeing how highly it was valued and how great an influence its members exercised for good. In August, 1844, he started for England and became a pupil at the Charing-cross School of Medicine, where his chief friends were W. G. Hunter (now Sir William Guyer Hunter, M.D., K.C.M.G., Q.H.S.), subsequently Surgeon-General of the Bombay Army, and the late Professor Huxley. In July, 1847, having passed his examination at the Royal College of Surgeons of England, he was commissioned to H.M.S. *Victory* for service at Haslar Hospital, where one of his comrades was Andrew Clark, afterwards President of the Royal College of Physicians of London. In the month of October, 1847, having been allowed to resign his commission temporarily, he left England as physician to Lord Mount-Edgcumbe, and with him he travelled on the continent for a few years. While with the earl, in February, 1849, he received the degree of M.D. from the University of Rome, being the only graduate of the University who was not a Roman Catholic. It was at Rome that he had the good fortune to afford medical aid to one of Lady Malcolm's daughters, thereby securing the interest which subsequently obtained him his appointment

in India. Towards the end of the year 1849, through the interest of Lord Mount-Edgcumbe, he obtained a commission in the Ordnance Medical Department, then presided over by Sir John Webb, but after four months at Woolwich the service was reduced in numbers and then it was that, through the interest of Lady Malcolm, Sir R. Campbell, a Director of the Honourable East India Company, gave him an Indian appointment and he proceeded to Bengal as an assistant surgeon. On June 29th, 1850, he left Gravesend in the *Camperdown* for Calcutta, and he commenced his Indian service at Fort William on Oct. 9th, 1850. In April, 1852, he sailed for Rangoon as one of the medical officers forming the hospital staff of the Burmah Field Force and was present at the escalading of the Thilawa stockade. During the war he was literally field surgeon to the Burmese army. As a reward, in July, 1853, Lord Dalhousie wrote and offered him the Residency Surgeoncy at Lucknow, which he said he had reserved to bestow upon the assistant surgeon who rendered the most approved services during the war with Burmah. When he joined his appointment Colonel Sleeman was the Resident, and he duly instructed Fayrer in the ceremonial and etiquette which are deemed of such importance in a native court. His designation in his early days at Lucknow was "Residency Surgeon, Superintendent of the King's Hospital, and Postmaster"; he was also in charge of the Martiniere School and Superintendent of the Char Bagh, a large public garden. Sir William Sleeman was in due course succeeded by Outram, whose arrival was celebrated with great pomp. In September, 1854, Fayrer was appointed an honorary Assistant Resident, and thus had political combined with other duties.

It was at Lucknow, on Oct. 4th, 1855, that Fayrer married a daughter of Brigadier-General A. Spens, and it was about this time that Outram, charged with instructions from the Governor-General in Council, carried into effect the last important act of Lord Dalhousie's administration—the reorganisation of the Oudh Government, which necessitated the deposition of the King, and henceforward Oudh became a British province. Under the new *régime* Outram recommended that Fayrer should be made a Deputy Commissioner, but the Governor-General wrote to him suggesting that, as he had done so well in his profession, it would be a pity to give it up. In consequence he was appointed Civil Surgeon of Lucknow and Superintendent of Charitable Institutions. Part of his work at this time was to reorganise the postal arrangements and extend them over the whole province. Sir Joseph Fayrer relates many incidents connected with his professional life while at the court of Oudh—many of them are full of humour and all are well told.

There is much in this work which will please the sportsman, for Sir Joseph Fayrer relates tales of shooting expeditions in which all wild animals, from the lordly elephant to the humble snipe, formed a quarry. Many and varied also are his observations of animal and vegetable nature in the jungle and Terai, the contemplation of which evidently added a freshness and charm to his everyday life.

As Sir Joseph Fayrer is one of the survivors of the Lucknow garrison during the ever-memorable siege, the reader naturally turns to the story of those days and is not surprised to find that he has devoted more than 100 pages to the insurrection in Lucknow and Oudh and the siege of the Residency. Here every line is worth reading, for the descriptions are vivid and the excellent maps and plans enable the reader to follow with ease each detail and incident of those memorable days. Fayrer's work in those days as physician, hygienist, and soldier was indeed stupendous. He devotes but small space to the final act in the drama of the life of that great Anglo-Indian, Sir Henry Lawrence, for of this he has written elsewhere more fully, but he tells enough to enable his readers to follow the course of events on that saddest of the days which dawned for Lucknow's heroic defenders. The whole story of those days in Lucknow is both circumstantial and thrilling. Years after Sir Joseph Fayrer tells how he presented the aged survivors of his own garrison to the Prince of Wales, to whom also he pointed out the old positions and the ruins of his former home. Vivid also is the tale of the perilous march of the garrison to Cawnpore after the relief. His strong remarks on the subject of Havelock's deserved "V.C." are a vigorous testimony against the absurd regulations which at times prevent the decoration of brave men with the soldier's most coveted distinction.

In 1858 Fayrer returned to England and went to reside at Edinburgh with a view to take his M.D. degree. He relates that he was allowed a special examination just before returning to India to take up his appointment as Professor of Surgery in the Calcutta University. In the descriptions of his surgical work in Calcutta, of his labours as member of the Syndicate of the University and President of the Faculty of Medicine, as President of the Asiatic Society, and Trustee of the Indian Museum, and of his experimental work which led to the publication of his great work on the "Thanatophidia of India," there is much to interest and attract the reader.

Invested at an early age with the badge of the higher of the Indian Orders of Knighthood he rode with the Companions of the Order at the memorable Chapter when the Duke of Edinburgh was invested as a G.C.S.I. on the Calcutta maidan and at the Viceroy's request accompanied the Duke on his travels through the north-west of India—an opportunity which led to his appointment as physician-in-ordinary to His Royal Highness.

The year 1873 saw Fayrer appointed as a member of the Medical Board at the India Office under the presidency of Sir Ranald Martin, whom he afterwards succeeded, and brought him his election as a Fellow of the Royal College of Physicians of London, a circumstance which subsequently restricted his practice to that of a consulting physician, for etiquette henceforward forbade surgical work in which he had excelled in India and to which he was much attached.

About a hundred pages of the volume are devoted to incidents connected with the Prince of Wales's visit to India. The part that Fayrer played in that great and memorable journey through the Indian Empire is told with a becoming modesty, but leaves the reader impressed with the manner in which he prepared for his arduous and difficult duties and very sensible of the care with which he carried out the charge intrusted to him by the Queen. It was while at Dholpore in Rajputana that the Prince informed him that Her Majesty had telegraphed to the Viceroy saying that he was to be made a Knight Commander of the Star of India, and he afterwards received the accolade and the insignia from the Prince's hands at a Chapter held at Allahabad.

Of the later stages of his career in London and of the important work he carried out as President of the Medical Board and member of the Army Sanitary Committee the reader can obtain due knowledge. One of his most important acts was certainly the firm and consistent support which he gave during many years to the Army Medical School at Netley. Twice in bygone years was its existence threatened and twice was his strong hand put forth to stay the destroying mandate, Sir Joseph Fayrer going the length of privately addressing the Queen through Sir Henry Ponsonby and asking her to avert the danger. He also spoke strongly at a meeting of the Royal College of Physicians of London about the medical services and thereby helped forward the new warrants. On the many honours which have been accorded to Sir Joseph Fayrer by Her Majesty and by universities in this country and abroad we will not dwell; they

are, of course, noted in this volume which is the record of a long official life well spent.

Prefixed to the book is the best portrait of Sir Joseph Fayrer which we remember to have seen, his expression and attitude being faithfully reproduced. The illustrations of the book are excellent, among the most interesting being the pictures of his house at Lucknow before and after the siege. The binding and letter-press of the book add to it an additional charm.

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*Heart Disease in Childhood and Youth.* By CHARLES W. CHAPMAN, M.D. Durh., M.R.C.P. Lond. With an introduction by Sir SAMUEL WILKS, Bart., M.D. Lond., F.R.S. London: The Medical Publishing Co., Limited. 1900. Pp. 98. Price 3*s.* 6*d.*

IN this small book Dr. Chapman has given a clear and interesting account of modern opinions with regard to heart disease in the young. He follows the views of Cheadle and Sturges as to the different clinical course, prognosis, and treatment of the disease in early life. He draws special attention to the frequency with which heart disease is overlooked in children owing to the ease with which compensation occurs and the consequent absence of symptoms, and quotes a number of clinical cases which bear this out. Dr. Chapman's directions with regard to the hygienic management of children who are suffering from heart disease is most sound and judicious. He protests against their being treated as having only a few years to live and strongly urges that where there is good compensation the boy should live an ordinary life, going to school and, under medical supervision, being allowed to take part in the less violent school games and sports. A large number of illustrative clinical records are given, as well as photographs and sphygmograms. Altogether the book forms an interesting and useful contribution to the literature on the diseases of early life.

A protest, however, must be entered against the practice of announcing books as accompanied by an "introduction" by some eminent man. The introduction by Sir Samuel Wilks in this book contains no information with regard to his own views but is merely a short testimonial.

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*The American Year-book of Medicine and Surgery.* Under the general editorial charge of GEORGE M. GOULD, M.D. Medicine. London: Rebman, Limited. 1900. Pp. 656. Price 17*s.* (The two volumes, Medicine and Surgery, 30*s.*)

THE general scope of the American Year-book is so well known that no introductory remarks are needed from us. The excellent standard of the publication is well maintained in this volume and all the subjects are brought fully up to date. In a glance through the pages the reader is at once able to perceive the work which has recently been done by various observers in any particular disease. The plentiful but judicious use of bold type greatly adds to the use of the work for reference, and the wished-for information is soon found.

Dr. Alfred Stengel and Dr. D. L. Edsall (Philadelphia) are responsible for the section on "General Medicine." The article on Typhoid Fever is of great interest; we may especially note the remarks on Combined Typhoid and Malarial Infection, a subject which is now receiving a considerable amount of attention. Another sub-section well worthy of perusal is that on Congenital Lesions of the Throat.

The section on Pediatrics is edited by Dr. Louis Stair and Dr. Alfred Hand of Philadelphia. The subjects to which attention has been paid in greatest measure are those of hygiene, infant-feeding, and the disturbances of the digestive tract.

Dr. David Riesman of Philadelphia has put together the section on Pathology. He draws especial attention to Birch-Hirschfeld's valuable observations on primary pulmonary tuberculosis, enlarging on this writer's statement that "pulmonary tuberculosis in its first stage is, as a rule, a mucous membrane tuberculosis located in a medium-sized apical bronchus." The more recent discoveries in bacteriology are also duly chronicled and a large amount of attention is paid to toxins, antitoxins, and agglutination.

Dr. Archibald Church is the editor of the section on Nervous and Mental Diseases and gives a good summary of the work performed during the year 1899 in addition to the usual extracts collected from medical literature. Dr. Louis A. Duhring and Dr. Milton B. Hartzell of Philadelphia have collected the information on Cutaneous Diseases and Syphilis, while Dr. R. W. Wilcox of New York and Dr. A. A. Stevens of Philadelphia are responsible for the section on Materia Medica, Experimental Therapeutics, and Pharmacology. They remark that the trend of therapeutic investigation during last year was rather toward a working out of details and following out of theories prepared than in presenting new measures, and that praiseworthy attempts have been made in the direction of harmonising the results of laboratory work and bedside study. Dr. G. N. Stewart of Ohio has produced an interesting collection of the advances made in Physiology, while Dr. Wyatt Johnston of Montreal has collected some valuable statistics from writings on Legal Medicine. The section on Public Hygiene and Preventive Medicine is by Dr. S. W. Abbott of Boston, and the one on Physiologic Chemistry is by Dr. Walter Jones and Dr. Reid Hunt of Baltimore.

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## LIBRARY TABLE.

*The Pasteurisation and Sterilisation of Milk.* By ALBERT E. BELL, F.I.C., F.C.S. London: Rebman, Limited. Pp. 41. Price 1*s.* 6*d.*—This unpretentious little book is a reiteration of the well-worn arguments in favour of the pasteurisation and sterilisation of milk. Since milk is known to be a means of spreading disease there can be little doubt of the great advantages of a sterilised milk-supply, but as our only method adopted is that in which the milk is submitted to the action of heat it cannot be doubted that some important changes in the composition of the milk take place also in this process. The precise nature of these changes and their effect upon the dietetic value of milk are still wrapped in some mystery. The author describes several forms of apparatus both on a large and small scale which are well adapted for the sterilisation of milk and he details also the organisms which occur in milk and which give rise to disease. He might have extended his observations on the effect of sterilisation upon milk inasmuch as the subject has been somewhat widely discussed during the past year. One sentence which occurs on page 41 should have been a little more positive. It is stated that "it is therefore most probable that the milk sold in large towns which is a mixture of milk from numerous cows contains tubercle bacilli." Quite recently, it is added, the experiments and researches made by Dr. Obermüller established this fact beyond all doubt. If the author will refer to our columns he will find that the fact has been established again and again at times which can hardly be described as "quite recently." The book will be read by the lay reader with advantage since it points out the dangers arising from infected milk and the advantages of sterilised milk.

*A Pocket-book for Chemists.* By THOMAS BAYLEY, Assoc. R.C.Sc.I. Seventh edition, enlarged and revised. London: E. and F. N. Spon, Limited. 1900. Pp. 559. Price 5*s.*—We shall not be surprised if this book reaches many more editions than the present number, seeing that it is so useful. Indeed, to the chemical manufacturer, the metallurgist, the dyer, the distiller, the brewer, the sugar

refiner, the photographer, and the medical man in the quest of analytical data it is a *sine quâ non*. The present edition has been quite brought up to modern requirements. Although a pocket volume it contains an enormous number of data which must have entailed considerable work, while the task of editing and revising must have been no small one. We cordially congratulate the author not only on the excellent plan of arrangement but also upon the accuracy which characterises the pages of data and formulæ. This is no small compliment considering the great number of formulæ, figures, and mathematical data with which the pocket-book abounds. To the busy practical chemist the book is of greater value than a dictionary, for reference is easier and the subjects are limited to practical work.

*A Text-book of Physiological Chemistry*. By OLOF HAMMARSTEN. Authorised translation from the author's revised fourth German edition by JOHN A. MANDEL. Third edition. New York: John Wiley and Sons. London: Chapman and Hall. 1900. Pp. 628. Price 17*s*.—This work was reviewed in THE LANCET of March 18th, 1899, when the second edition was under consideration which was a translation of the third German edition and there are no essential changes either in plan or material in the present edition. But of course the subject has been brought completely into accord with the modern developments of science. The number of pages in the present edition, which is called "enlarged," is reduced by 80, which is due rather to altered paragraphing and arrangement of type than to the condensation of discussion. The translation is admirably done, and is clear and intelligible. The order in which the subjects are treated betokens also a systematic faculty. We still find no reference in the section on the Respiratory Processes to the elaborate work of the late (as we must now write) Dr. Marcet, F.R.S., although the work of German collaborateurs is freely cited. Hammarsten's original work has been frequently translated into other languages besides our own, of which several editions have appeared, a fact which is an indisputable argument in its favour as a book that is much sought after as an educational help. An admirable feature of the work is the copious references given in the foot-notes to original papers on some of the great physiological problems. The index, also, is very complete. The book may be recommended to the student commencing this subject, and besides, as a source of reference, to those who have completed their ordinary curriculum.

*A Glossary of Botanic Terms*. By BENJAMIN DAYDON JACKSON. London: Duckworth and Co. Philadelphia: J. B. Lippincott Company. 1900. Pp. 326. Price 6*s*.—Botanical science has accumulated such a vast number of technical terms, many of which are only occasionally met with, that a glossary of terms is really necessary to the right understanding of modern works on botany. The book under notice gives the derivation and accentuation of the words and in addition to the glossary contains an appendix giving a list of signs and abbreviations, a bibliography, and other supplementary matter. Bearing in mind the use of such a book it is a pity that a page of *errata* should have been necessary, and also that the list of additional words could not have been incorporated in the main list. These things will, no doubt, be put right in a second edition, but their existence in the first edition does not add to the convenience of the book, which, however, should prove of use in the reference library of any one interested in the science of botany.

*Lehrbuch der Histologie und der Mikroskopischen Anatomie des Menschlichen Körpers. (Text-book of the Histology and Microscopical Anatomy of the Human Body.)* Von Dr. Ladislaus Szymonowicz, ausserordentlichem Professor der Histologie und Embryologie an der Universität Lemberg. Lieferung III. Würzburg. 1900. London: Williams and Norgate. Preis M.3.—The third part of Dr. Szymonowicz's text-book includes about 60 pages of the text and 11 beautifully executed drawings in addition to some 50 figures scattered throughout the different pages of the work, in illustration of the thorough manner in which microscopical anatomy is taught at Lemberg. The parts of the body which are described and illustrated are the veins, the heart, the lymphatics, the thyroid, the suprarenal capsules and the coccygeal body. These are followed by a minute account of the digestive system from the mouth to the small intestine. The text is very clearly expressed, and the illustrations, mostly original, are most excellently drawn. We may at once say that Professor Szymonowicz's treatise will, when completed, be one of our most valuable works on human histology.

## JOURNALS.

The *Veterinarian* for June exposes a singular dearth in its usual number of original clinical case notes. For this to be the case in a journal the strong point of which used always to be its clinical side makes it seem as if the veterinary practitioner was becoming very apathetic. It may be that, as the war in South Africa has removed a large number of rivals from England, he is too busy to jot down notes and write them up into clinical articles in his spare time. This month's number consists almost entirely of extracts from colonial or foreign sources. The first article is taken from the report of Mr. J. A. Gilruth, chief veterinary officer and bacteriologist to the New Zealand Government, and is headed "Tumour Formation in certain of the Domestic Animals." It is an interesting extract and is well illustrated. A summary of the same author's work on Actinomycosis, Parasitic Gastritis, Red-water, Milk Fever, Acute Congestion of the Kidneys, and other diseases of cattle and sheep is also given. A valuable editorial note summarises the recent work of Professor van Gehuchten and M. Nélis, wherein these writers assert that by a microscopical examination of one of the cerebro-spinal ganglia of a supected animal the diagnosis of rabies can be confirmed or refuted in a few hours instead of waiting until the result of inoculation becomes known. The annual report of the Principal of the Royal Veterinary College is concluded, this instalment including the Summary of the Researches made upon South African Horse Sickness and the Curability of Glanders. Mr. John Dollar contributes translations from Professor Cadiot's lectures on Clinical Cases and there is also an article on Tuberculosis Antitoxins by E. Merck of Darmstadt. Scientific extracts under the heading of the Month's Progress and reviews of books conclude the number.

The *Veterinary Journal* for June is even worse off than its contemporary the *Veterinarian* for clinical articles. The June number is almost entirely made up of reports of the proceedings of the various veterinary societies, the account of the quarterly meeting of the Council of the Royal College of Veterinary Surgeons, extracts from foreign or colonial sources, and reviews of books. Amongst the first-named are papers on Influenza, Anæsthetics, and Joint Evil. Dr. Bradford's paper on Rabies is concluded and a list of the successful candidates at the recent professional examinations in Edinburgh is given. As a great deal of this matter has already been published in the weekly organ of the profession it seems a pity that it should be utilised to fill up the monthly journals, particularly as the weekly paper is well known to have a wide circulation. More original work would be better appreciated.

TEIGNMOUTH HOSPITAL.—The fête which was recently held in aid of the funds of the Teignmouth Hospital resulted in the sum of £250 being raised for the institution.

# THE LANCET.

*LONDON: SATURDAY, JULY 7, 1900.*


MR. BURDETT-COUTTS'S letter to the *Times* of June 27th was terrible reading. No wonder it stirred the feelings of the British people and caused the most anxious inquiries to be made in every direction at all calculated to elicit information on the subject—and no wonder also that much of the correspondence which ensued in the press owed its inspiration to the heart rather than to the head. Despite all that human foresight and ingenuity can devise wounds and privation are inseparable from war. Some writers seem to have forgotten this. The real terror of Mr. BURDETT-COUTTS'S letter lay not in his statement that horrors had occurred but in his deliberate allegation that they had occurred from causes which might have been foreseen and which were wholly preventable. The case is one of national concern, one which touches the national sense of honour and humanity, and should be kept altogether above any mere party interest. However painful the subject may be, heated and impassioned discussion is quite out of place on such an occasion. The aim and object of everybody should be to elicit the truth, and the whole truth, in a spirit of independence, and in that spirit we propose to discuss the subject to the best of our ability. It goes without saying that everything which affects the honour and reputation of the medical profession deeply concerns us, and we fearlessly accept the position that the medical service in South Africa is to be held accountable for the trust committed to it. If it can be shown that it was within the power of the medical service to have prevented the terrible scenes described by Mr. BURDETT-COUTTS, or if the things which he alleges to have happened appear on investigation to be attributable to any culpable neglect on its part, then a well-deserved obloquy and punishment should fall upon the culprits. On the other hand, unless war is to be rendered impossible it is surely conceivable that exceptional conditions arising out of the circumstances of a campaign may occur which are practically beyond human control, or which at any rate in the judgment of those in supreme command are of so imperative a nature as to render the vicarious suffering and sacrifice of some unavoidable in order to secure the safety of the remainder or the achievement of strategical success. Decision in such momentous situations falls, and rightly falls, within the province of the Commander-in-Chief and that of his staff. The duty of the medical authorities is to represent the facts and to advise as to what should be done; there their official responsibility ends.

The picture presented to us by Mr. BURDETT-COUTTS of the almost indescribably bad condition of the sufferers from typhoid fever closely packed together in bell tents and marquees—and we purposely select this as the most graphic, tangible, precise and striking instance of alleged neglect—was such as to lead the least sensitive to exclaim: Are the facts correctly stated, and, if so, were these horrors unavoidable under the circumstances and exceptional, or were they more or less typical of the general condition of the medical arrangements? Again, if these things were unavoidable how long did such a state continue and was it remedied with the least practicable delay or not? Such were the questions we asked ourselves at the moment, accepting Mr. BURDETT-COUTTS'S statements as substantially true in the meantime. If neglect can be proved the offenders must be punished. But the fullest inquiry should precede punishment and the military exigencies must not be lost sight of. We rose from a perusal of the debate in the House of Commons with a well-grounded feeling of assurance that the Army Medical Service will turn out after an honest and unbiased investigation to have been both powerless and blameless in this matter. We confine ourselves to the occurrences at Bloemfontein and Kroonstadt, putting aside for the present all other allegations emanating from any places elsewhere. And it seems to us quite irrelevant to the subject to inquire whether there was any want of physicians and nurses, because where the most elementary necessaries for the accommodation, feeding, and treatment of the sick were absent no amount of physicians and nurses could, practically speaking, have been of any avail. Again, while we thoroughly accept as indisputably true all that Sir WILLIAM MAC CORMAC, Mr. TREVES, and others have said about the condition of the hospitals, we may put much of their evidence aside as irrelevant to the present issue, because the results of their personal inspections were only applicable to the times and places at which they were made. We are quite content to accept, for the sake of argument, Mr. BURDETT-COUTTS'S description of what he saw. We only ask that judgment on the whole question may be suspended until more is known.

No fair-minded or reasonable person can hesitate, after reading Mr. WYNDHAM'S speech, to arrive at the conclusion that the provisions made in this country for the hospitals of the army in South Africa were most carefully considered, while the transit of all supplies to the Cape was thoroughly well arranged. We see no reason for altering the opinion which we expressed months ago that everything had been provided for the medical service on a more liberal scale than had ever been attempted before. It is a ridiculous assumption that the medical authorities of the War Office were not thoroughly alive to the fact that there would be a large amount of enteric fever. The experience of every modern campaign on record furnished the information. They could not, of course, foresee the occurrence of the sieges at Ladysmith and elsewhere, or the capture of the waterworks by the Boers at Bloemfontein for example; nor could anyone have foretold the incidence of disease in the form of big outbreaks at any given time or place; but the War Office took care to provide for the occurrence of a large aggregate amount of enteric fever. We can only suppose that Sir WALTER FOSTER'S speech in the House of Commons with reference to the sending out of a small sanitary commission was prompted by political motives, for the efforts of such a commission would, it seems to us, have been completely useless unless the commissioners

had explored, say, Kroonstadt and Bloemfontein some weeks before Lord ROBERTS'S arrival. Would not the commissioners have been impeded in their work by the Boers? Such a commission would have been valueless, and its proposal shows that Sir WALTER FOSTER did not know where to look for a clue to the difficulty. Transport is *the* difficulty in every war and it has been pre-eminently so in this one. At the beginning of the campaign the British forces were not only outnumbered, but their plans were frustrated by the mobility of their foes. When Lord ROBERTS assumed command he had a larger and much more mobile force at his back. A number of very rapid and sweeping marches were made, by which the army altogether outmarched its supplies and had to depend upon a single and precarious line of rail. This was frequently interrupted, while his convoys were also captured and his stores raided by the enemy. Lord ROBERTS either might not have gone to Bloemfontein and Pretoria at all or might have doubled the carrying capacity of his railway before doing so. We cannot suppose that either alternative would have been deemed by anyone a satisfactory proceeding on his part. Still, the matter rested with him and with his chief of the staff, who was supposed to have the army transport under his special charge. Whether Mr. BURDETT-COUTTS was right or wrong in his contention that if the railway trucks had been properly utilised all would have been well is a matter which he must settle with the military authorities. Lord KITCHENER is probably the only officer in a position to give full and complete information on the point. It is clear, however, from the extracts which Mr. WYNDHAM read from the diary of the Principal Medical Officer at Cape Town that Surgeon-General W. D. WILSON was thoroughly alive to the importance of getting his general hospitals to Bloemfontein, but was unable to do so on account of the great pressure of traffic.

Mr. BURDETT-COUTTS will pardon us for remarking that he is not the sole and exclusive possessor of feelings of humanity or the only person animated with a keen sense of responsibility in regard to the requirements of the sick. Let it be clearly understood that we fully credit him with having been shocked and distressed by what he saw and with having been actuated by a conscientious sense of duty in the course he has taken; and we most sincerely hope that it will have the effect of leading to the fullest inquiry and be productive of the greatest benefit to the sick and wounded soldier. But we do find fault with him in that he did not, whilst on the spot and enjoying peculiar advantages in the matter of introductions, make a representation to Lord ROBERTS or apply for advice and information to the Central Red Cross Society which has large funds at its disposal and agents and depôts at the seat of war. He should have done either or both of these things before having recourse to the publication of his letter.

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WE have recently[1] published a communication by Dr. PAVY on Differentiation in Diabetes. It has long been recognised by physicians that one of the most striking features belonging to diabetes is its varied manifestations in different cases; also that correct prognosis and treatment mainly depend upon an accurate knowledge of the phenomena, clinical and chemical, by which the forms met with in actual practice are characterised. In Dr. PAVY'S article two classes of cases are most ably differentiated, and a study of his remarks will enable practitioners more fully to understand the principles upon which cases of diabetes may be treated and the facts upon which a prognosis may be founded.

As is well known there is a class of case in which the eliminated sugar is solely derived from the food. It constitutes what has been appropriately named the "alimentary" form of diabetes. Dr. PAVY'S observations are chiefly from a practical point of view and therefore he does not enter into a theoretical discussion. He states that in this variety of the disease the carbohydrate matter of the food fails to be dealt with in the system in such a way as to be placed in a proper position for utilisation. As a consequence it becomes discoverable as sugar in the circulation and is thence discharged as waste material with the urine. It is important to remember that in this "alimentary" form of diabetes the abnormal state observed in connexion with the urine consists purely and simply of the presence of dextrose. As a result when the urine is examined quantitatively by cupric oxide reduction and the polarimeter the figures given by the two methods stand in accord or sufficiently so for the difference noted to fall within the limits of error of observation. As a further point in connexion with this kind of urine it is found that when the dextrose has been removed by fermentation with yeast and Fehling's solution no longer gives any reaction the polarimeter also fails to afford any evidence of either right-handed or left-handed optical activity. Simply placing the urine aside in a warm situation for 24 hours with some broken-up German yeast ordinarily suffices for the complete removal of the dextrose. One other point has to be taken note of for a full understanding of the chemical phenomena in connexion with urine in diabetes—namely, that the urine belonging to the "alimentary" form of the disease does not possess the abnormality which leads to the production of a coloured reaction with ferric chloride. Turning now to the second class of case which Dr. PAVY describes we find that the dextrose in the urine, instead of being derived solely from the carbohydrate matter of the food, is also present as a consequence of abnormal proteid disintegration. This is a much more serious matter. By faulty metabolism a tissue breaking-down occurs, attended with the production of sugar associated with other abnormal degradation products. Through this proteid disintegration consequences arise which do not follow on the simple faulty assimilation of carbohydrate matter. Dr. PAVY points out that pernicious results may ensue from the sugar that reaches the system from mal-assimilated carbohydrate matter, but further and graver effects arise from the condition attended with the production of sugar from faulty degradation metabolism. It is to the presence of one or more of these products of disintegration accompanying the sugar that diabetic coma is attributable. Thus a form of danger is engendered which does not attend the abnormal existence of the sugar alone. The term "grave" has usually been adopted in defining this class of case.

[1] THE LANCET, June 16th, 1900, p. 1706, et seq.

After reading Dr. PAVY'S description, however, we agree with him that the conception to which that term gives rise does not felicitously fit in with what is desirable for general use. The term he proposes—"composite"—more accurately meets the circumstances in relation to the existing condition and also stands more appropriately in contrast with the "alimentary" or simple form of the complaint. We think, therefore, that the expression "composite" should be accepted to distinguish that form of diabetes in which evidence is presented of tissue disintegration constituting a partial source of the dextrose eliminated from that in which the dextrose is derived solely from the food. In brief the "composite" form of the disease is characterised by the presence in the urine of sugar, together with the products of faulty tissue breaking-down. Dr. PAVY then goes on to explain what are the series of abnormal products discoverable in the urine in the "composite" form of diabetes. The chain in its successive stages of descent runs as follows: β-oxybutyric acid, diacetic acid, and acetone. It is known that traces of acetone may be met with in normal urine, but the presence of the other principles is usually regarded as pathological. They are indicative of abnormal proteid destruction and their amount may be taken as furnishing a measure of the extent of its occurrence. This is of course an important point, as we are thus enabled to read off in a given case the magnitude of the morbid action in play in the direction in question. Dr. PAVY proceeds to show the manner in which the estimation can be effected by methods adapted for clinical application. We do not propose to dwell in detail on these measures, but we may mention it is the levo-rotatory β-oxybutyric acid that is found and consequently this action takes away from the dextro-rotatory effect produced by dextrose, and thus the results given by estimation with cupric oxide reduction and the polarimeter are not in accord as they are with the "alimentary" form of diabetes; in the "composite" variety a reading is given it may be much below that which would have resulted if the dextrose had stood alone, and consequently correspondingly below the figures given by cupric oxide reduction. By the difference in the result noticed between this test and that afforded by the polarimeter an indication is given of the extent to which abnormal proteid disintegration is occurring. Supplementary information is obtainable by fermenting the dextrose away and then examining with the polarimeter. The optical activity of the oxybutyric acid is then allowed to come into unopposed play and a left-handed rotatory effect is shown, standing proportionate to the amount that is present. Finally, the presence of diacetic acid may be demonstrated by the ferric chloride test.

We have not space to comment further on Dr. PAVY'S interesting and instructive article. We have laid especial stress upon the chemical phenomena of the urine because they are less understood and appreciated than the clinical manifestations of the disease, but are equally important in the treatment. It is true that the examination has to be made by an expert, but at the present time no difficulty need be experienced in having the required analysis carried out at the numerous laboratories established for the purpose. It is obvious from what we have said above that it is of supreme importance that the practitioner should be able to decide as to which variety of the disease he has to deal with in any particular case. If it should prove to be of the "alimentary" form the treatment is simple and the prognosis favourable; should it prove, however, to be of the "composite" form the treatment is more complicated and severe whilst the prognosis is much less favourable. In a recent leading article[2] we drew attention to a paper published in our columns by Dr. SAUNDBY, and Dr. PAVY'S remarks are closely in accord with his. We need not, therefore, dwell again on the subject. We feel, however, that these two writers by their recent communications deserve the thanks of practitioners for bringing before their notice the most modern views as regards the prognosis and treatment of a disease so prevalent as diabetes.

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THE Bill to amend the Companies Act, the second reading of which was carried through the House of Commons on June 26th, contains two clauses which, as the Minister in charge of the Bill remarked, are not germane to it. This is doubtless a truism, but whether the clauses be germane or not they are of the utmost importance to the medical profession. The object of the new Bill is, we take it, to render impossible for the future such instances of fraudulent trading under the guise of a company as have of late years shocked the public mind. Parliamentary Bills as a rule say what shall be done and not what shall not be done, and until lately it would have been considered as likely that medical practice should be carried on by a company as that the revision of the Nautical Almanac should be dealt with in the same manner. But the idea has been seriously acted on and various recent instances have occurred of companies, with more or less medical names implying medical function and practice and composed of persons with no real medical qualifications, pretending to practise medicine and to perform duties only legally to be done by practitioners on the Medical Register. Therefore, although the clauses dealing with medical and dental practice by companies may not be strictly germane, yet we contend that in a Bill such as the present the subject may very well be dealt with.

Nothing can be more clear from the various Acts and Charters regulating medical practice than that the Legislature intends that qualification to practise medicine in any or all of its branches is to be a personal matter. It is to apply to individuals and not to companies. There is something especially unsatisfactory in the idea of companies undertaking to carry on the profession and practice of medicine, and it has been recognised on all hands that such practices should be rendered impossible. The only question was as to the best way in which to stop this abuse—whether by a separate Bill of one clause, as in the Bill of the Lord Chancellor last year, or by a clause in the Companies Bill as recommended by a strong committee of the House of Lords. Happily, the latter course has been pursued by the Government, and in the Companies Bill of this session, with the names of Mr. RITCHIE and the Attorney-General

[2] THE LANCET, June 2nd, 1900, p. 1596.

and the Solicitor-General on the back of it, and ordered to be printed on Feb. 12th, we find the following section:—

3. It shall be unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife, and if any company contravenes this enactment it shall be liable, on summary conviction, to a fine not exceeding *five pounds* for every day during which the contravention happens.

We hope to see the Bill with this section included safely through Parliament during the present session. It is true that the medical profession, which is well informed as to the dangerous and audacious attempts by companies to practise medicine, was a little shocked when the President of the Board of Trade on the second reading of the Bill in the House on June 26th suggested, as we have already mentioned, that this section and another with reference to pharmacy might be left out of this Bill as being, though good in themselves, not really germane to it. This was a most disappointing line for Mr. RITCHIE to take at this advanced period of the session in regard to so admirable a part of his own Bill. We cannot doubt that he will reconsider this position and abandon it. He will admit that the chances of getting any such clause through as a separate measure at this late period of the session and after the passing of a Bill dealing generally with the abuses of the Companies Acts will be very slight. Fortunately we have his own authority for approving the principle of Section 3. He is the chief sponsor for the Bill, and in the debate on the second reading he admitted frankly that the amendment of the law which the section provides would be a beneficial alteration. His real object must be to make "companies" respected and to restrict their undertakings within limits that will make them safe and beneficial to the public. We do not gather that he has any strong objection to the clause remaining in the Bill. He said that the Standing Committee to which it has been referred must decide whether it should be proceeded with or struck out and relegated to some other Bill at some other time, but we are glad to learn as we write that the Committee has voted in favour of retaining the section. It would be a mere academic waste of time for the Government after this action of the Committee to argue further for leaving out the clause, the more so as, if we are rightly informed, Mr. RITCHIE has promised its promoters to urge the Lord Chancellor to re-introduce it as a separate measure if it be dropped out of the Bill. Mr. RITCHIE has already left this question practically to the Committee, and though its decision is against him it is only formally so. The decision is against him only in the sense of method and time and not in that of principle. It will gratify not only the General Medical Council and the medical profession, but all who have the reputation of companies at heart, to know that the principle involved in Section 3 has the approval of Mr. RITCHIE and the legal members of the Government and has found a place in the Companies Bill, which is likely to be one of the few measures of a memorable session dealing with domestic and peaceful questions. We venture to hope that he will cheerfully accept the vote of the Committee and give Section 3 the same Government help which he gives to the other portions of the Bill.

# Annotations.

"Ne quid nimis."

## THE NEW UNIVERSITY OF LONDON.

THE statutes and regulations made for the new University of London by the Commissioners appointed under the University of London Act of 1898 were passed in the House of Commons without opposition on Friday, June 29th. On July 2nd the foundation-stone of a new hall for the teaching of Economics and Political Science, which is a new faculty included in the University by the Commissioners, was laid by the Bishop of London in Clare Market almost on the line of the projected street from Holborn to the Strand. The site has been given by the London County Council, who will also contribute £2500 a year towards the expense of carrying on the work of the school, while Mr. Passmore Edwards has vested the sum of £10,000 in three trustees for the erection of the building. A new start has thus early been made for the future education of the metropolis. We presume that the different bodies interested will soon begin to elect a Senate and that the constitution of the three standing committees—viz., the Academic Council, the Council for External Students, and the Board to Promote the Extension of University Teaching, will at once follow. The members of Convocation and the teachers of the University in its eight faculties of Theology, Arts, Laws, Music, Medicine, Science, Engineering, and Economics and Political Science, are qualified as members of the University by the fact that the statutes are now in force. It is most important to the medical students of London that the Senate of the new University should quickly come into existence, in order that arrangements may be made with the Royal College of Physicians of London and the Royal College of Surgeons of England, or either of them, to conduct jointly with the Senate examinations in such portions of the subjects included in the course of study for a medical degree as may be agreed upon. It is now 12 years since Lord Selborne's Commission was appointed for the hearing of the evidence for and against the formation of a Teaching University in London and to report thereon. The granting of medical degrees by the two Royal Colleges had been discussed by a joint committee and the movement for promoting a Teaching University had been thoroughly considered for some years before the appointment of the Royal Commission. We are naturally anxious that organisation of the new University should not be unduly delayed, for the medical profession has long waited for reform.

## THE "LIGHT TREATMENT."

MR. MALCOLM MORRIS has had under treatment by the Finsen electric-light method for more than two months several exceptionally severe cases of lupus vulgaris, and on Saturday afternoon last, June 30th, was able to give a very successful demonstration of the method to a number of medical men interested in the new departure. The premises which Mr. Morris has secured for the purpose of carrying out the "light treatment" are situated at 1A, Berkeley-gardens, Campden-hill, and are fitted up with every requisite for applying the new method. The particular apparatus used at 1A, Berkeley-gardens was procured by Mr. Morris from Copenhagen and has been in this country for nearly two years, but circumstances have prevented the apparatus being put into systematic use until some months ago. The apparatus required for the treatment by means of artificial light consists of three portions. First, a powerful electric

arc lamp is needed of from 55 to 75 ampères current; secondly, means must be provided for cooling the light; and, thirdly, it is essential that the operators should be able readily to concentrate the light in a suitable manner. The electric arc lamp is employed because it is found that its light is not only rich in chemical rays but is also less endowed with heat rays than ordinary sunlight. Further, in this country it is not possible to depend on a regular supply of sunlight which may, however, when available, be substituted for electric light with some necessary variation in the apparatus. For purposes of treatment the light is too hot and it is therefore passed through a form of telescope fitted with lenses of crystal and with distilled water for the purpose of absorbing the heat rays. Jackets of cold water are also so arranged that any chance of complications from the action of heat is avoided. Inasmuch as only a small portion of the diseased surface can be treated at one sitting provision is made for concentrating the light on a small spot a little larger than a florin. To those watching this process carried out it seemed that the attendants manipulated a patient with a view rather of bringing the part to be treated into focus than of focussing the light itself on to the desired place. Though naturally pleased with the favourable course taken in the cases of lupus vulgaris submitted to this treatment Mr. Morris very clearly pointed out to those present that the whole subject must be considered in a tentative way only and they must not allow themselves to make exaggerated statements about curing lupus, though of course the procedure was very satisfactory in many ways. It could be fairly said from the cases demonstrated by Mr. Morris that the method was painless, that no anæsthetic was required, and that there was nothing in it to frighten or repel a patient. Put very briefly a medical man could safely assert that given a powerful electric arc light, with suitable telescopes fixed at the right distance so as to concentrate the light properly cooled on to the patient's skin as he lies on a couch (if the situation of the lupus was convenient for focussing), the results would be in a large proportion of cases exceedingly satisfactory. The drawbacks are that the treatment is a tedious operation, the patient requiring very long and frequent exposure to the light, and that the longer the treatment the less power the light has of piercing the tissues in any particular case. In fact, there seem to be three factors specially detrimental to the success of this method: scar tissue, blood, and pigmentation. Mr. Morris does not appear to accept the theory that the chemical rays act in a remedial manner entirely by their bactericidal power, but space does not permit of discussing this point. The curative agency of these chemical rays does not seem to be confined to lupus vulgaris, for Mr. Morris showed a case of lupus erythematosus in which great improvement had resulted, and he also exhibited a typical case of rodent ulcer in which the hardness had disappeared, leaving only a superficial healing ulcer. The success of the demonstration was added to by some interesting remarks from Dr. A. Barry Blacker and Dr. F. Harrison Low. Mr. Morris was helped by Mr. S. E. Dore, his clinical assistant at St. Mary's Hospital, in carrying out the method of treatment.

## SEPTIC SORE-THROAT AND INFECTED MILK.

DR. J. KING WARRY, medical officer of health of Hackney, has forwarded to us a copy of a report which he laid before the Health Committee on June 7th. The report deals with an outbreak of sore-throat which occurred in his district in April and also during a part of May. The disease was of a septic character and appeared to be connected with one particular milk-supply which in the report is designated as X. An analysis of 10 cases showed that in every case there was tonsillitis. In two cases there was also superficial ulceration. In every case there was cervical adenitis and in one case this went on to suppuration. The temperature was raised and the rise persisted for as long as a fortnight after the tonsillitis had disappeared. The temperature was of an intermittent type with profuse sweating. In one case acute septicæmia with fatal pneumonia supervened. In two cases acute nephritis with hæmaturia came on about a week after the commencement of the attack. In one case purpura hæmorrhagica occurred. Dr. Warry sent out a circular to every medical man in the district asking whether he had met with such cases as those of which the symptoms are detailed above and if so whether the milk-supply to the affected patients was from a common source. A bacteriological examination of suspected samples was carried out at the Jenner Institute, but no light was thrown on the matter. The circular resulted in providing details of 151 cases occurring in 88 households, all, with very few exceptions, being in Upper Clapton and Stamford Hill. Of these 138 cases occurred in 75 households, all of which were supplied with milk by X. Dr. Warry inquired of X from whom he got his milk, but X declined to say, being within his legal rights in so doing. "In some way," concludes Dr. Warry, "the milk supplied by X was the cause of the septic sore-throat disease."

## THE EAST SUFFOLK HOSPITAL.

AT the anniversary Court of Governors of the East Suffolk Hospital, which was held on June 27th, a most important resolution was passed by the narrow majority of one which in future may have very serious results for the honorary medical staff. Hitherto the honorary medical staff have been elected for life and the elective body has consisted of the governors, or rather of some 400 members of the general body of governors. By the new rule members of the medical staff were to be elected for only ten years with the option of re-election at the end of the first ten years for a like period, and in addition the election was to be taken out of the hands of the 400 governors and transferred to the members of the board of management, who number 80. The motion was put by the Rev. T. M. Morris, who said that he spoke as the representative of the late board of management. Dr. W. A. Elliston, in opposing the proposed alteration, said that if carried it would cause a great deal of friction. Besides this the proposal did not come from the whole 80 members of the board of management, but only from the 12 members of it who were elected annually as a weekly board. The proposed new rule would simply put the medical staff in the position of being practically servants to the board of management. Personally he thought that there should be an age-limit, and for his own part he should be quite ready to retire at the usual retiring age—namely, 60 years. The proposal to disfranchise the governors in favour of the board of management simply meant the curtailing of the privileges of the governors and that would be disastrous for the funds of the hospital. The medical staff had quite made up their minds on the matter. Dr. R. K. Casley, in endorsing Dr. Elliston's views, said that a medical man's judgment was better at the end of ten years than when first elected. Some people thought that a change of clergyman at the end of ten years, or even of three years, was desirable. A hospital existed for the benefit of the patients and not as a dumping-ground for various young medical men. Eventually the proposal was carried by 19 votes to 18. The chairman then put to the meeting certain alterations which the rule just carried entailed, among others one which would make the whole of the medical staff members of the elective body, but eventually the matter was left over to be decided at a future meeting of governors. It must be remembered that the essence of a hospital consists of three things—money, patients, and

medical men. The last two are interdependent, and without either a hospital is non-existent. But although a hospital cannot get on without funds and subscribers it probably could get on without a lay board of management, and this is a fact which many boards of management seem to forget.

## THE POSITION AT THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

AS a result of the statement which has been issued to the governors by the medical and surgical staff of the National Hospital for the Paralysed and Epileptic we understand that a full inquiry will be instituted without delay. We have received a letter from the medical committee conveying their desire to settle the questions at ssue between themselves and the board of management without appeal to the public. Under these circumstances we refrain from publishing either the statements of the staff or the rejoinder made by the board, and content ourselves at this juncture with saying that we trust that under no circumstances will the staff forego their just demand for representation on the governing body of the institution which owes its public utility to their efforts.

## THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE programme of fêtes which we published in our issue of June 23rd, p. 1821, has been slightly modified owing to the wish expressed by the President of the French Republic that he should close the Congress. The programme will therefore now run as follows. On August 2nd Dr. Lannelongue, the President of the Council, will give an evening fête in the name of the Government of the Republic. On August 3rd members of the Congress will be invited to an evening fête by the President of the Congress. On August 5th the fête given by the Bureau and Organising Committee of the Congress will be held in the Palais du Senat and the gardens of the Luxemburg. On August 7th the municipal council will hold its fête in the Hôtel de Ville. And, finally, on August 9th the President of the Republic will give his reception in the Elysée.

## EXEMPTION OF PARALYSED LIMBS FROM THE SYPHILITIC EXANTHEM.

AT the meeting of the Société Médicale des Hôpitaux of Paris on June 15th M. Danlos related the following case. A man, aged 23 years, contracted syphilis. Six weeks after the appearance of the chancre a papular eruption appeared on the trunk, which took about three weeks to become generalised. Then the patient entered hospital with a confluent papulo-acneiform eruption which was very abundant on the trunk and less marked on the arms and left leg. The face was only slightly affected. The right lower limb was completely free from the eruption. On the right buttock and right side of the abdomen the lesions were numerous, but below the groin and the gluteo-femoral fold there was not one. In infancy the patient had suffered from infantile paralysis and the development of the right lower limb had been greatly checked. It was eight centimetres less in length than the left. The knee was semi-flexed and the foot was in a condition of equino-varus. All the tissues of the limb were decidedly atrophied except the skin which appeared to be normal. The temperature was lower on the right than on the left side. When the surrounding temperature fell the limb readily became purple. In spite of this it was, according to the patient, always moist. When the patient stood for a short time it became manifestly redder than the sound limb. The immunity from the eruption evidently depended on the atrophic condition of the limb. Similar cases have been recorded. In 1896 M. Jolly brought an almost exactly similar case before the society. Dr. Boulogne published a case in his *Thèse de Lille*, 1897, which differed in the fact that the paralysis was infantile spasmodic hemiplegia, and another in which the eruption was not the syphilitic exanthem but tuberculo-ulcerative syphilides, lesions which, however, are usually localised. Immunity of paralysed limbs to specific eruptions is not constant. M. Danlos observed in a man, aged 61 years, the subject of old hemiplegia, that the secondary syphilitic eruption was a little more abundant on the paralysed side. In the discussion which followed M. Merklen referred to a case of small-pox in a child the subject of infantile paralysis in which the pustules did not develop on the atrophied limb, and also to a case of psoriasis in which a limb, atrophied from infantile paralysis was exempt from the eruption. As to the explanation of such cases, nervous influence, alteration in the structure of the skin, defective circulation, and lowering of temperature may all be invoked, but definite proof as to the cause is wanting.

## POST-GRADUATE CLINICAL STUDY IN THE METROPOLIS.

THE endeavour of the metropolitan schools of medicine to supply some sort of post-graduate teaching in London has proved far more successful than was at first anticipated. It was felt that the patients had already reached the limit of their endurance in the way of examination and the teachers the limit of their endurance in the way of teaching; for this reason it was decided to admit qualified medical men to the ordinary clinical instruction and clinical advantages of the medical schools, rather than to organise an independent post-graduate course. In this way it has been possible to throw open the best clinical material of the metropolis by issuing tickets at an almost nominal fee conferring the right to attend the practice of all departments of nine of the large metropolitan hospitals. Not a few of those who have come for a flying visit from Canada and the United States, after testing the scheme for a period of three months or more, have thought it worth while to stay a year or so as ordinary students to obtain the diploma of the Conjoint Board. Detailed information and prospectus may be obtained from the honorary secretary, West Wing, Examination Hall, Victoria-embankment, W.C., by letter or by interview between the hours of 12.30 P.M. and 3 P.M. daily, excepting Saturdays.

## THE PLAGUE IN SAN FRANCISCO.

SOME two months ago rumours were current that plague had broken out in the Chinese quarter of San Francisco and reports which from time to time came to hand from that city, although vague, conveyed the impression that the true situation was being concealed and that the disease prevailed much more extensively than was generally supposed. Owing to this belief a feeling of dread sprung up throughout the United States that the plague had indeed gained a foothold in San Francisco and the fear was freely expressed that unless the most stringent measures were taken the pestilence, as in Australia, might be disseminated along the Pacific coast. In order to ascertain the exact position of affairs and to relieve the minds of the American public the *New York Herald* induced Dr. George F. Shrady of New York to proceed to San Francisco to make a careful inquiry into the matter. Dr. Shrady, after a stay of a week in San Francisco, during which time he visited every section of Chinatown under the escort of the police and health authorities, and after assisting in a necropsy on the body of a Chinaman suspected of dying from plague, came to the conclusion that, while there could be no doubt that the malady was, and had been, present in a

sporadic form, the scare was absolutely unwarranted, and that to all intents and purposes all fear of a widespread epidemic was ridiculous and unfounded. With regard to the condition of Chinatown and the duty of the San Francisco health authorities Dr. Shrady has this to say: "It matters not what money it may cost or what labour may be involved, the Board of Health of San Francisco has upon its shoulders a solemn duty which it must perform. The excitement created by the plague has called to the attention of the authorities the outrageously unhealthy state of Chinatown. Neither the people of San Francisco nor the authorities who represent them can afford to wait. Chinatown is known throughout the world as one of the filthiest quarters in existence, and San Francisco will not be relieved from the suspicion of other cities and States until it has removed this plague spot." It would therefore appear that the alarm caused by the occurrence of plague in San Francisco will really prove to be a blessing in disguise. Unsavoury Chinatown will doubtless be thoroughly cleansed and a district which has always been a menace to the whole city will be placed in a proper sanitary condition.

## BARKER ANATOMICAL PRIZE.

STUDENTS who are expert dissectors will be interested in the announcement that the Barker Anatomical Prize of £21 is offered for competition and is open to any student whose name is on the anatomical class-list of any school in the United Kingdom. The subject appointed is a dissection of the fifth nerve, especially with reference to the Gasserian ganglion. The preparations must be sent to the Curator of the Museum, Royal College of Surgeons in Ireland, Dublin, before March 31st, 1901, each being marked with a fictitious signature and accompanied by a sealed envelope bearing outside the same signature and containing the competitor's name, together with a declaration that the work has been carried out by himself. The printed form necessary for the declaration can be obtained from the Curator. The cost and risks of transport must be borne by the student.

## THE CLOSING OF PUBLIC ELEMENTARY SCHOOLS.

THE procedure to be adopted in order to enforce the closing of public elementary schools is so simple and can so speedily be brought into action that it is surprising to find not only members but even clerks of School Boards who appear to be quite unacquainted with the precise requirements of the Education Code. An instance in point reaches us from a district in South Wales where measles is now epidemic. The head-master of the Board school found his attendance had fallen from 97 pupils to 17 and he appeared before the School Board armed with an "order" from the local medical man to close the school. The Board was about to pass a motion to close when their clerk stated that such a motion was quite unnecessary but an "order" must be obtained from the medical officer of health of the district, whereupon the head-master and the clerk were deputed to wait upon this official who without demur gave the required document. Article 88 of the Education Code reads:—

"The managers must at once comply with any notice of the sanitary authority of the district in which the school is situated, or any two members thereof, acting on the advice of the medical officer of health, requiring them for a specified time, with a view to preventing the spread of disease, or any danger to health likely to arise from the condition of the school, either to close the school or to exclude any scholars from attendance; but after complying they may appeal to the department if they consider the notice to be unreasonable."

*It will be observed* that the proceedings may be likened to a *safe* with two keys, both of which are required to open its door. One key is in the possession of the medical officer of health and the other in that of the district council or any two of its members. Either is powerless to act alone, but with joint action a school or a department of a school may be closed at a few hours' notice. The medical officer of health may advise the closing, but can go no further; he certainly cannot issue an "order" to close. The district council or any two of its members can require a school to be closed, but only "acting on the advice of the medical officer of health."

## TENDENCY TO HÆMORRHAGES IN EXOPHTHALMIC GOITRE.

IN a recent number of the *Neurologisches Centralblatt* (April 15th) Dr. J. Popoff reports two fresh cases of exophthalmic goitre with pronounced tendencies to hæmorrhage from the mucous membranes. He regards this as a valuable symptom in early stages of the disease and has observed such a tendency in three cases out of six or seven. The cases recorded in his present article are as follows. Case 1. A woman of middle age observed after losing her teeth that hæmorrhages occurred from her nose and gums, vagina, and mucous membranes generally. She was accordingly admitted to hospital, in which she remained for 31 days, and during this time she suffered from three attacks of bleeding from the mucous membranes and large hæmorrhagic extravasations into the skin. She gradually improved under treatment and the hæmorrhages ceased entirely. Case 2. The patient was a young woman, aged 27 years, who suffered from similar hæmorrhages at the commencement of exophthalmic goitre. During her residence in hospital, extending over a period of five weeks, she had no less than six severe recurrent hæmorrhagic attacks. Both patients were subject to slight and commencing exophthalmos, and Dr. Popoff is inclined to include the hæmorrhagic tendency among the earlier diagnostic signs of exophthalmic goitre.

## OBSERVATIONS ON TUBERCULOSIS IN ITS EARLY STAGES.

A NUMBER of interesting papers constituting a symposium on the above subject was presented by various physicians at the American Medical Congress held at Atlantic City, N.J., from June 5th to June 8th. Dr. J. M. Anders of Philadelphia stated that the pre-bacillary stage of phthisis was one of long duration and extended to the time when the bacilli had invaded the lungs and could be detected in the sputa. During this pre-bacillary stage diagnosis was to be made by three methods: (1) the use of the x rays; (2) the application of the tuberculin test; and (3) a careful study of the history, symptoms, and physical signs. Among the most important indications of the last class was a two hours' temperature record which would show elevation of temperature at a given hour daily. Dr. S. Solis-Cohen of Philadelphia stated that in the incipient stage of tuberculosis the time of the highest temperature was between 12 noon and 2 P.M., except in cases of inverse temperature. Dr. Victor C. Vaughan of Ann Arbor, Michigan, said that the temperature of tuberculosis in its early stages was more characteristic than that of typhoid fever, though many things might cause it to vary. Rest was one of the great benefits of sanatorium treatment. When the temperature was not high a moderate amount of out-door exercise might be indulged in. He further pointed out that many patients suffering from argyria as the result of the use of silver in the treatment of epilepsy developed tuberculosis. This view, however, was controverted by others. Dr. Delancey Rochester of Buffalo thought that the spread of the disease among tailors and seamstresses might in a measure be accounted for by the fact that they had a habit of wetting

the thread in the mouth. Dr. W. Freudenthal of New York City stated that in 1500 cases of tuberculosis present in persons following various occupations tailors were the most frequently affected, those who worked in "sweat shops" or who lived in dark, unventilated rooms being particularly attacked. Dr. C. P. Ambler contended that cases of pulmonary tuberculosis should not be reported as cured until a long time had elapsed. Thus of 46 cases classed as A 35 were regarded as cured. These numbers referred to the present condition of cases treated during 1898 which were reported at the annual meeting of the American Medical Congress in 1899. Again, of 28 cases classed as B six were apparently cured, and of 32 cases classed as C, nine were greatly improved. The treatment adopted was as follows: hygienic supervision, climatic influences, medication, and serum-therapy. Cases apparently cured under serum-therapy were less liable to relapse. Dr. Mayo of New York believed that no tuberculous patient would throw off the liability to the disease, no matter how long he might live, but if a tuberculous patient were relieved of his symptoms for a year he was practically well. Dr. Upshur illustrated the importance of hygiene by citing the case of the negro in the Southern States; when a slave he was practically free from consumption, but at present in the first and second generations since slavery was abolished the march of consumption was so great "as to warrant the feeling that the solution of the social problem lay in consumption," which bade fair to reduce the negro to the same unimportant position in the country as the Red Indian occupied.

## SIR W. FOSTER AND THE MEDICAL ARRANGEMENTS AT THE SEAT OF WAR.

SIR WALTER FOSTER'S speech in the House of Commons on the occasion of the debate on June 29th on the treatment of the sick in South Africa does not seem to have been fully reported in the papers. He is stated by some who were present and had the privilege of listening to him to have made some statements which certainly appear to require elucidation, for, taken as they stand, they are calculated to raise the eyebrows of astonishment, as the Germans say. Sir Walter Foster is alleged to have stated that the opinion of the late Professor de Chaumont with regard to the provision of hospital accommodation for an army in the field was that it should be calculated at 25 per cent. As we have been unsuccessful in our attempts to verify this perhaps Sir Walter Foster would be kind enough to furnish a reference to the publication from which he obtained the record of this opinion on the part of Professor de Chaumont. He also stated that in his (Sir W. Foster's) judgment, had prevision been exercised and due provision made the case mortality of enteric fever might have been brought down to 12 per cent. Does he really mean to say that the mortality during a campaign should be less than what it is in hospitals at home where every agency for good is available? If so, he should lose no time in instructing the medical officers, not only of the British, but of all European, armies how this improvement is to be effected, especially under the conditions of war where the sick have in any case to be relegated from the front to hospitals in the rear. We think we recollect that it was the late Sir William Jenner's opinion that the movement of typhoid fever cases was injurious, in which we fancy most medical authorities would be inclined to concur, but this, to mention only one of the things incidental to war, is unavoidable. Moreover, Sir W. Foster seems to have implied or suggested by his remarks that medical officers are in the habit of recording enteric fever as "simple continued fever," with the object of minimising the number of cases of the former. He surely could not have meant this. That cases of enteric fever are occasionally so recorded is a well-known fact, but from no such motive as that implied. Not to mention such cases as are of a mild (ambulant) type, Sir W. Foster's experience must have been of an exceptional character if he has not encountered many in which the true nature of the fever is not (and cannot be) determined with any accuracy in the initial stages of the disease. As a matter of fact, however, it is a common practice among medical officers to regard and return every fever case with a rise of temperature lasting over six days as one of enteric fever. It is easy to understand, however, that as the subsequent "change of disease" (in the statistical returns) entails a certain amount of clerical labour in order to maintain the accuracy of the statistical returns (which members of the House of Commons, including Sir W. Foster, often call for), it frequently happens no doubt that the change is not made, especially in the hurry and pressure of war. But it is obvious that if a small proportion even of the cases of simple continued fever were returned as enteric fever the present death-rate of the latter would be reduced to that extent and be more favourable than it is. The present death-rate of 21½ per cent. may consequently be regarded as an extreme ratio, for it is capable of large discount seeing that simple continued fever is hardly ever fatal. As to what an independent authority in the shape of a small commission could have effected under the circumstances that obtained in South Africa we are at a loss to understand. From a sanitary point of view they could manifestly have done nothing until the British forces had invaded and taken a place, when their operations would have been too late, and they could not have delayed or altered any essential military operations, or prevented the army from altogether outmarching its supplies, or have increased the amount of available transport by rail, or otherwise prevented the enemy from making raids upon it, or fouling the rivers and sources of water-supply, or capturing the waterworks. They might no doubt have represented this and that and "intervened in regard to questions between military commanders and medical officers" if the theatre of war had been a small one or had they been ubiquitous; but could they have got up hospitals and supplies where needed without the means of doing so and would they not have been, in fact, the proverbial "fifth wheel" to an already embarrassed and overladen coach?

## TREATMENT OF MEMBRANOUS COLITIS.

THE *Medical News* of New York of June 2nd contains a valuable paper by Dr. W. H. Thomson on the treatment of the very troublesome disease, membranous colitis. He finds that nothing is so soothing to the tenesmus as free irrigation of the colon with normal saline solution, to which may be added oil of peppermint, five drops to the pint. From three to five gallons at 100° F. may be used once in 12 hours with Kemp's rectal irrigator, care being taken that all the fluid returns. Once a week a pint of hot water containing from 30 to 40 grains of nitrate of silver may be used. But this irrigation is not curative, as it is in many cases of chronic catarrhal or ulcerative colitis. One remedy, Dr. Thomson finds, changes the disordered nutrition of the mucous membrane—castor oil in what he calls "alterative doses." He gives from half a drachm to a drachm of the oil in an emulsion either half an hour before or an hour after meals. This remedy should be continued for months and an intermission should be allowed only when the oil seems to increase the dyspeptic symptoms. Nitrate of silver in quarter-grain doses combined in pill or capsule with nine grains of turpentine resin, taken three times a day, is sometimes of much service. After six weeks sulphate of copper in quarter-grain doses may be substituted for the nitrate of silver. If dyspeptic symptoms exist five

grains of resorcin in solution with tincture of nux vomica may be given half an hour before meals and supplemented by 10 grains of sodium benzoate and 10 grains of bismuth salicylate in capsules an hour after meals as intestinal antiseptics. The chronic constipation (on which the disease depends) should be treated by salines. From one to two drachms of phosphate of soda with 10 grains of salicylate of soda should be given every morning in a tumblerful of water as hot as the patient can sip it. After a time the same quantity of sulphate of magnesium may be substituted. Daily massage of the abdomen is useful. As to diet beans, spinach, woody vegetables, and oatmeal, must be excluded, and the patients should be encouraged to take meat, poultry, eggs, koumiss, peptonised milk, and most cereals. Change of air in the country is the best remedy for constipation and it beneficially affects the disease. When all other means fail colotomy, as recommended by Dr. Hale White, may effect a cure.

## THE PROPOSED INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON.

THE publication of a *précis* of the proceedings relating to the proposed meeting of the International Congress of Obstetrics and Gynæcology in London in the current number of the *British Gynæcological Journal* has enabled those who were but imperfectly acquainted with the facts to form a fairly clear conception of the part taken by the British Gynæcological Society in this matter. It is greatly to be regretted that a perusal of the *précis* does not tend to show that the action of the Gynæcological Society was altogether free from blame. In view of the special nature of the relations existing between the Gynæcological and Obstetrical Societies the council of the younger society would have been well advised had they shown an earlier and greater desire for coöperation not only with the senior society, but, what is of far more importance, with those gentlemen who are the representatives of obstetric medicine in the medical schools of the metropolis. The summoning of an international congress to the capital of the British Empire should not be the work of any one society, however representative it may be. The fiasco which has resulted and which has unhappily only tended to accentuate the differences between the two societies, would never have occurred had the invitation to the organising committee of the Congress been sent, not by any one society, but by a committee representing the leading obstetricians and gynæcologists, not alone of London, but of Great Britain and Ireland. There can be no doubt but that under such circumstances both metropolitan and provincial practitioners would have loyally coöperated and the Congress could not have failed to be a success. Under the present conditions we trust that the Organising Committee of the Congress at their meeting on August 2nd will see that any attempt to hold a meeting in London in 1902 cannot but be a failure and will adopt the only course that at present appears to be open to them—e.g., that of postponing any such meeting in this city for some years. In the present issue of THE LANCET is published a letter from Professor Sinclair of Manchester upon the subject. As a leading provincial obstetrician and as a member of both societies he is able to regard the whole matter without prejudice. We would commend a perusal of this very temperate letter to the Members of the Organising Committee of the British Gynæcological Society. As we have said, we believe the best method of promoting a meeting of the International Congress of Obstetrics and Gynæcology in London would be to form a provisional committee of the leading obstetricians and gynæcologists of England, Scotland, and Ireland. Such a committee could well include everyone of a representative character without regard to his official position in any society. With such a committee once called together it would be easy to settle details, to elect a president, and to appoint smaller committees to carry out the arrangements necessary to ensure the success of the Congress. The present unfortunate position is due to the fact that the Fellows of one society have thought fit to move in the matter in their capacity as representatives of that particular society. It is important to note that the meeting held at Dr. Playfair's house was not one of the Obstetrical Society, but of the teachers of obstetrics and gynæcology to the London medical schools, and that these gentlemen signed the letter refusing to take part in a Congress with regard to which important arrangements had already been made before their coöperation was invited in their capacity as teachers and not as Fellows of the Obstetrical Society. Professor Sinclair is clearly of opinion that the council of the Obstetrical Society were justified in the action they took in the matter, and although we must deeply regret that the necessity for any such action should have arisen, yet we fail to see how in justice to themselves they could have done otherwise. We trust when the time comes for again inviting such a Congress to meet in the metropolis that the present unfortunate occurrence will not be forgotten and that steps will be taken to prevent the possible recurrence of such an *impasse* as exists at the present time.

## MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE fifty-ninth annual meeting of this association will be held in London on Thursday and Friday, July 26th and 27th, at the rooms of the association, 11, Chandos-street, Cavendish-square, W., under the presidency of Dr. Fletcher Beach, who will deliver his presidential address at 2 P.M. on the opening day. Following the President's address Dr. William Wynn Westcott, coroner for North-East London and president of the Society for the Study of Inebriety, will read a paper entitled "Inebriety, its Causes, Results, and Treatment." Dr. W. J. Collins and Dr. E. B. Forman of the Inebriety Committee of the London County Council are expected to speak. On the same evening the annual dinner will take place at the Whitehall Rooms of the Hôtel Métropole at 8 P.M., tickets one guinea each. On the second day papers will be read by Mr. H. Hayes Newington (member of the Sussex County Council and of the Asylum Committee); Dr. W. Ford Robertson, pathologist Scottish Asylums Laboratory, Edinburgh; Dr. J. Shaw Bolton (who will show some Naked-eye Preparations and Specimens from the museum of the Pathological Laboratory of the London Asylums at Claybury); Dr. David Orr, pathologist, Prestwich Asylum, and Dr. Thomas Philip Cowen who will read "A Contribution to the Morbid Anatomy of General Paralysis of the Insane." Dr. George A. Watson will exhibit some lantern slides to demonstrate Juvenile General Paralysis. Dr. J. O. Wakelin Barratt, pathologist, West Riding Asylum; Dr. John Turner; and Dr. Lewis C. Bruce, physician superintendent, and Dr. H. de Maine Alexander, assistant physician, Perth District Asylum, Murthly will contribute Observations upon the Various Physical Changes in the Acute and Subacute Stages of Melancholia. In the afternoon Mr. Cecil F. Beadles will read a paper entitled, "The Insane Jew"; and Dr. W. C. Sullivan, Dr. David Blair, Dr. A. F. Shoyer, and Dr. F. W. Edridge-Green will also read papers. It was agreed at the council meeting held on May 10th in London, after consulting the divisions of the association which reported unanimously upon the matter, that the following resolution should be placed before the annual meeting with a recommendation that a copy thereof be sent to the Local Government Board in the three kingdoms:—

"It is the unanimous recommendation of the Medico-Psychological Association of Great Britain and Ireland that

in union workhouses in which insane persons are detained a properly qualified and trained mental nurse should be employed in the insane wards."

On Saturday, July 28th, the President, Dr. Fletcher Beach, and Mrs. Fletcher Beach will be at home to members and their friends from 4 P.M. to 7 P.M. in the afternoon at Winchester House, Kingston-hill.

## THE MEDICAL ACTS AMENDMENT BILL.

WE understand that Professor Sir R. C. Jebb has undertaken the charge of this Bill in the House of Commons. It has the support of the Privy Council and of practically all the universities and should not meet with any serious opposition.

## OBSCURE LEGISLATION.

IN discussing questions relating to public health and local government we have frequently called attention to the obscurity of modern legislation, by no means confined to enactments in dealing with these topics, which arises from making one Act of Parliament incorporate by reference the provisions of another, instead of each statute being, as it were, self-contained. We are glad to see that Mr. Gibson Bowles, M.P., in a recent debate upon the Government Bill dealing with agricultural holdings called attention to this practice in forcible terms. The honourable member had apparently good reason to complain, for he stated that the Bill before the House was the most remarkable example of referential and allusive legislation he had ever come across, adding that no one could approach to an understanding of it until he had provided himself with nine other Acts of Parliament. As instances of the cross referencing of which Mr. Gibson Bowles complained he gave such passages as these, which will make clear to our readers the nature of the system against which we protest. "References to the Principal Act and to Sections 29, 30, 32 and 34 thereof shall be construed as references to the Agricultural Holdings Scotland Act (1883) and to Sections 24, 26, 25, and 30 thereof respectively." "Reference to manures in the Principal Act shall be construed as references to the improvements Nos. 24 and 25 in Part 3 of the first schedule of this Act." The House laughed at the sarcasms which the Member for King's Lynn levelled at a system of drafting which it has made its own, but it is no laughing matter for those who have to guide themselves by the light of such cryptograms in the fulfilment of public duties and who desire to do so without incessantly consulting their legal advisers as to the meaning of what need not be obscure. The system of legislating by cross reference instead of by printing sections in full may render a volume of statutes smaller and easier to handle than it would otherwise be, but to those who are not members of the legal profession lucidity in an Act of Parliament is of more value than a slightly diminished avoirdupois.

## ARSENICAL PIGMENTATION AND KERATOSIS WITH ASCITES.

IN the *Johns Hopkins Hospital Bulletin* for April Dr. Louis P. Hamburger has recorded a case in which the above conditions were present. A man, aged 42 years, who had been taking for psoriasis from five to eight minims of Fowler's solution three times a day off and on for 10 years, came under observation. His illness began eight months previously with a "cold" and a cough. About a month later his abdomen began to swell and at the end of the day's work he noticed that his legs were swollen. The skin of almost the whole body was of a mottled yellowish-brown colour, small rounded areas of less pigmented skin alternating with more deeply-coloured parts. The face was slightly affected and the complexion was muddy. The hands and feet were not affected. On the palms the skin was diffusely thickened, and here as well as between the fingers were numerous dirty grey warts and callosities, varying in size from that of a pin-head to that of a pea. The soles were similarly affected. The abdomen was distended with fluid and the shins pitted on pressure. Thomas Hunt was probably the first who called attention to arsenical pigmentation. He wrote: "The trunk of the patient first, and, subsequently, all those parts of the body which are by the dress protected from the atmosphere, become covered with a dirt-brown, dingy, unwashed appearance."[1] Palmar and plantar keratosis were described first by Erasmus Wilson in 1868. In 1887 Mr. Hutchinson called attention to several cases and pointed out, further, that the use of arsenic might lead to the production of a peculiar form of cancer. Dr. Hamburger thinks that the ascites present in his case was also due to the arsenic, for Mr. Hutchinson has described a similar but more severe case in which paracentesis was performed three times and recovery followed only on discontinuing the drug.[2] In Geyer's report on an outbreak of arsenical poisoning due to contaminated water several similar cases are quoted.[3] The inference certainly seems justifiable and is, moreover, supported by analogy. For if ingested arsenic will irritate skin and mucous membrane, why not also serous membrane?

## DISEASES WHICH SIMULATE APPENDICITIS.

THE difficulties of diagnosis in cases of supposed appendicitis are very great. Many other morbid conditions have been mistaken for inflammation of the appendix, and in some cases even an operation has been performed. On the other hand, real cases of appendicitis have been diagnosed as suffering from some other malady. In the *New York Medical Record* of May 26th there is a paper by Dr. E. J. Janeway of New York, which was read previously at a meeting of the Practitioners' Society, on "Some of the Conditions Simulating Appendicitis." We will mention a few of the principal cases which have come within Dr. Janeway's knowledge or about which he has been informed by physicians. Neuralgia affecting the lower abdominal nerves has in a number of cases given rise to doubt. In two cases in which operations had been performed the appendix was found to be normal and was not removed. In some the neuralgia was the reflexed pain of pneumonia or pleurisy. Another source of difficulty is in conditions of the right kidney, such as hydronephrosis and moveable kidney. Cholecystitis has in several cases been operated on from the belief that peri-appendicular inflammation existed. Ulcers in the gastro-intestinal tract, or catarrh with colic and cancer of the cæcum, have led to the belief in the existence of appendicitis. Fæcal impaction may be mistaken for exudation, and *vice versâ*. In a certain class of cases, not very frequent, a non-malignant ulcer of the hepatic flexure of the colon, with fæcal accumulation and possibly a moveable kidney, may mislead the inexperienced. An important fact is mentioned by Dr. Janeway that he has known the removal of the appendix to be done for the general aches and pains of follicular tonsillitis. It is only fair to add that he has been consulted in two cases of peritonitis from perforation of the appendix which were ushered in by follicular tonsillitis. Abscess of the ovary, retained menstrual fluid with sapræmia causing chill, or retro-peritoneal abscess may mislead. Hypochondriacal patients may fasten on the appendix as a source of evil and may receive the advice to have an operation immediately. Dr. Janeway's paper is of much value as drawing attention to the importance of an exact diagnosis in cases apparently

[1] THE LANCET, vol. i., 1847, p. 92.
[2] Archives of Surgery, vol. vi., p. 389.
[3] Archiv für Dermatologie und Syphilis, 1898, Band xliii., p. 221.

of inflammation of the appendix, and should serve to guard against every case of pain and tenderness in the right iliac fossa being looked upon as appendicitis.

## NEALE TESTIMONIAL FUND.

WE are informed that this fund is about to be closed, but subscriptions received on or before Wednesday next, July 11th, will be included in the complete list which will shortly be published. We would remind our readers that subscriptions should be sent to Mr. J. Y. W. MacAlister, 20, Hanover-square, London, W., and it will save much trouble if cheques are made payable to "Bearer" and crossed "National Provincial Bank, Neale Testimonial Account."

## STREET NUISANCES.

LONDON is such an unwieldy agglomeration of some dozen separate cities that coherent action is almost impossible. But the London County Council, which has after many complaints shown itself willing to do something to alleviate the sufferings of those who have to work with their brains, on June 29th held a conference with representatives of the vestries at Spring-gardens. A committee was appointed, to consist of one member from every local authority added to the sub-committee of the County Council, to discuss and report to a future conference upon matters which required definite regulations. The meeting then commenced to consider the removal of refuse and litter and we are glad to see that the case of Bond-street was specially mentioned for it is very narrow and between 9.30 and 10 A.M. in a disgraceful condition. This, however, as well as the question of street noises, was referred to the committee. We do not know whether the recently passed regulations upon "flash-lights"[1] were retrospective or not, but to mention only one of these, the intermittent advertisement at the top of Sloane-street is still hard at work or was so, at any rate, on the night of July 4th. Street-shouting, too, though the nuisance abated for some little time after the promulgation of the recent order,[2] is now, in the Strand at least, as bad as ever it was. The "runner" is not only a nuisance on account of his howling, but he makes great additions to the litter in the streets by dropping posters wherever he goes. Piccadilly-circus is a favourite dumping ground. Sir Edward Bradford issued a notice to the police to stop vendors from shouting, but their efforts have so far had singularly little result. The London School Board, too, might well spend a portion of the £2,000,000 or so which it extracts from the ratepayers in kidnapping the under-sized infants who shriek "cricket editions" at untimely hours. Only recently a maddened householder complained with success of the "terrible monotony of the cooing of a noisy animal, to wit, a dove;" surely the monotony of a newsvendor is far worse. However, relief seems to be visible in the distance.

IT is announced that the Queen has been pleased to confer the honour of Knighthood upon Mr. Riley Lord, the Mayor of Newcastle-upon-Tyne, and upon Dr. George Hare Philipson, the President of the University of Durham College of Medicine, Newcastle. Upon Mr. Riley Lord's unceasing and finally successful efforts to secure a new Infirmary for Newcastle we have already commented and we congratulate him heartily upon his good work and its well-deserved recognition. Dr. George Hare Philipson, besides being President of the University of Durham College of Medicine at Newcastle, is Professor of Medicine in the University and Lecturer on Medicine in the College of Medicine. In 1893 he was President of the British Medical Association. He is M.D. of the University of Cambridge and M.D., D.C.L., of the University of Durham, consulting physician to the Newcastle Infirmary, a Justice of the Peace, and representative of the University of Durham College of Medicine on the General Medical Council. His important and responsible position in the world of medicine has secured him many friends who will join with us in felicitating him upon the honour that he has merited and received.

IN our issue of June 23rd we gave a short account of the new pathological laboratories at Oxford and mentioned that last year an anonymous gift of £5000 had been presented to the University towards the erection of the buildings. The donor has now consented that his name should be made known and a decree is to be proposed on July 7th that the thanks of the University be conveyed to Ewan Richards Frazer, M.B., Balliol College, for his munificent donation. Dr. Frazer is a resident of Woolahra, Sydney, N.S.W.

THE honorary degrees of Doctor in Medicine and Master in Surgery of Dublin University were conferred on Sir William Mac Cormac, Bart., K.C.V.O., on June 28th. On the same day Surgeon-General J. Jameson, C.B., Director-General of the Army Medical Department, received the honorary degree of Doctor in Medicine. Both distinguished members of the medical profession were introduced to the Vice-Chancellor by the Orator, Dr. R. Y. Tyrrell, in speeches of excellent Latinity full of happy allusions.

DR. DANIEL JOHN LEECH, Professor of Materia Medica in Owens College, Manchester, died on July 2nd, in his sixty-first year. Dr. Leech represented Victoria University in the General Medical Council, and was Chairman of the Pharmacopœia Committee, but on account of illness was unable to attend the last meeting of the Council.

MR. FREDERICK TREVES, F.R.C.S. Eng., was on June 28th presented with the freedom of Dorchester, his native borough. Mr. Treves, in acknowledging the honour conferred upon him, alluded to the medical arrangements of the war in South Africa, and said that they could look with pride upon the work accomplished.

THE annual distribution of prizes to the students of the Medical School of St. Mary's Hospital will take place on July 13th at 4.30 P.M. The prizes will be presented by Dr. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge.

A TELEGRAM was received at the Colonial Office on Monday last, July 2nd, from Sir Henry Blake, Governor of Hong Kong, stating that 99 cases of bubonic plague with 98 deaths occurred in Hong-Kong last week.

THE annual meeting of the National Association for Promoting the Welfare of the Feeble-Minded will be held at Aubrey House, Campden-hill, W., on Monday next, July 9th, at 4 P.M.

THE appointment of Mr. John Sealy, M.D., as a member of the Legislative Council of the Island of Barbados has been approved by the Queen.

DR. L. S. JAMESON, C.B., has been returned unopposed as member of the House of Assembly of Cape Colony for Kimberley.

THE British Gynæcological Society will meet on Friday, July 13th, at Buxton.

WE are asked to state that the Cambridge Long Vacation Course will be given as usual.

1 THE LANCET, March 24th, 1900, p. 866.
2 THE LANCET, Feb. 10th, 1900, p. 399.

# THE WAR IN SOUTH AFRICA.

## THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

THE rumours which we have had for some days past that Pretoria had fallen into the hands of Lord Roberts are now officially confirmed, so that it is very unlikely that there will be any necessity for the continued presence of surgeons in South Africa, and in consequence I hope that this may be nearly the last, if not quite the last, letter that I shall have the opportunity of sending to you from Deelfontein. The heavy epidemic of enteric fever which has broken out will, of course, necessitate the keeping open of all the hospitals for a considerable time yet, and among them of this hospital. There are over 700 beds here now and we are just opening accommodation for another 200 patients in tents.

There is a rumour that the Yeomanry will be amongst the first of the troops to be sent home, and we hope to arrange to establish a hospital at Maitland camp which is just outside Cape Town, where they will mass in thousands previously to taking ship, and where in consequence there is sure to be a certain amount of sickness to be dealt with. We have, however, not yet heard what is to be the fate of the splendid institution here. It is such an ideal spot for a hospital, and so much time and trouble have been expended on drainage and sanitary works and on the elaborate system of water-supply as well as on the erection of the huts, that it will be a thousand pities if the whole is not taken over as a going concern by the military or the civil authorities and run for the permanent benefit of the large army of occupation that must be left behind or of suffering humanity in general. The alternative of repacking the 750 iron bedsteads and their hair mattresses and their bedding, and the accumulation of hospital paraphernalia and stores which go to make up a total weight of well over 1000 tons, and of transporting all of this nearly 500 miles to Cape Town and then 6000 miles to England, surely only requires to be mentioned in order to be avoided. The mere fact that nearly all the packing cases had to be used up owing to the scarcity of wood would make it an almost impossible task. Perhaps, however, it is early days yet for such considerations. There is still much sickness to be dealt with and we are very thankful indeed that the committee at home have sent out 10 more nursing sisters who will shortly be due in our camp, and in view of the large percentage of sickness amongst our staff will be extremely welcome.

The routine of work throughout the camp has settled itself down so satisfactorily, and every member of the staff does his or her allotted work so well, that everything goes on in a most peaceful and methodical manner, and it is difficult to realise that it is only two or three weeks since the end of those busy and bustling weeks of development and growth when one hardly ever had a quiet quarter of an hour. The cold weather, also, has brought changes which make life here more pleasant. It has killed all the flies, for one thing, and it has made the meat, about which I grumbled in a former letter, much more palatable, for now it is possible to hang it so long that when cooked one's teeth will go through it. This sounds a small thing in itself, but, as you know, it is very much easier to get work out of people when their food is good. The laundry is doing extremely well under Miss Cheesman's care, associated with whom is one of our medical staff, Dr. Bruce, who superintends all the disinfection of linen from the enteric fever patients and other infectious patients. Our carpenters, freed now from the work of erecting huts, are busy putting up shelves and cupboards and stoves for warming purposes as well as a lean-to just outside each hut, in which all the washing-up is done.

By the bye, we succeeded in reaching our full development of 700 beds, as in a former letter[1] I wrote that we hoped to be able to do, well within five months of the date of the appearance in the *Times* of the letter from Lady Georgiana Curzon and Lady Chesham suggesting the sending out of a hospital for the Yeomanry. I do wish that everybody who responded to that letter by subscriptions and gifts could come and see the hospital as it is now. There are very few things which I should try to hide from their gaze and perhaps the most important of these is the condition of the boots of the *personnel*. The fact is, that leather, except such as is specially prepared, perishes rapidly in this climate, and the combination of sand and boulders is not an amicable one for boot-leather; though indeed there are hardly any boulders to be met with now within the camp—they have all been collected by the natives for building walls or for making borders for the system of roads between the huts and the tents. The electric and other lamps which light the way in the streets of our small town exist only in the imagination of the newspaper correspondent whose description we have lately read in one of the London papers.

The smoking concerts continue to attract large audiences, but they take place now inside the large recreation tent which adjoins the church hut and forms the main body of the church on Sundays.

Two Roman Catholic priests and several medical men (both officers of the Royal Army Medical Corps and civilians) have been patients in our officers' wards. When they are well enough the convalescent officers come to our officers' mess. We have by far the biggest mess in the whole of South Africa, there seldom being less than 50 persons present at each meal. We are going to keep Christmas Day on June 25th, for that day will be midwinter, and last night we had a dress rehearsal in the shape of turkey and plum-pudding. It is really very cold now—there are several degrees of frost each night—and we have had to put an oil-stove or a coal-stove in each of the hospital huts.

It has been an unfortunate week for the Yeomanry, for, as you know, the Warwicks were badly cut up in the rebellious districts under Sir Charles Warren, and many of their wounded have arrived here, and then the 13th Battalion had the bad luck to get trapped at Lindley. By the time you get this it will be ancient history and you will know all about the latter misfortune. The only two members of the battalion who were not killed or wounded or taken prisoners are at present in this hospital—namely, an officer who has had enteric fever here but is now convalescent, and a trooper who, after the 13th Battalion of the Imperial Yeomanry (composed, as you know, of those very sporting companies the Duke of Cambridge's Own and the Irish Yeomanry) were surrounded on a kopje near Lindley, was sent to work his way through the Boer lines and fetch reinforcements from Lord Methuen who was in the neighbourhood. After a most exciting journey, partly on foot and partly on commandeered horses, moving each night and lying hidden during the daylight, this trooper got to Lord Methuen and conducted the reinforcements back to Lindley within the time that the officer in command of the Yeomanry had said that he could hold out for; but it seems that the Boers, whose numbers had grown each day from 500 to 2000, had brought some guns into action and had rendered the position untenable. It is a very sad ending for this fine regiment. I have seen a good deal of them since their arrival in South Africa a week or two after we came here, and indeed I travelled part of the way from Bloemfontein to Kroonstad side by side with them, and particularly noticed how well they scouted. I breakfasted in the latter place with them the very day that they set out for Lindley. They were then pointing out the good fortune that had attended their regimental number of "13." They mobilised in England on the 13th day of the month, and three times in South Africa it has happened that they have moved further up country on the 13th. They were such a splendid lot of sportsmen and had borne themselves so well through their more than usually rough time out here that I am sure everybody who knows anything of them will be extremely sorry for their bad luck in getting wiped out just before the end of the campaign; though considering the position they got into it is extremely fortunate that more of them were not killed, and I suppose it cannot be very long before those who were taken prisoners will be released. They will, of course, have lost every single thing they brought with them except the clothes the Boers leave them to stand up in. I think you will find that they will not have so much as a badge left between the whole lot of them, for this is the very first thing that the Boers loot, turning their attention first to the dead, then to the wounded, and then to any prisoners they may take.

Deelfontein, June 11th.

[1] THE LANCET, June 23rd, 1900, p. 1820.

## FIELD FORCE—SOUTH AFRICA.

*Table showing the Personnel of Medical Units on the Lines of Communication.*

| Unit and place of mobilisation. | Details. | Remarks. |
|---|---|---|
| No. 14 General Hospital (Depôt R.A.M.C., Aldershot). | *Royal Army Medical Corps.*<br>Major S. Butterworth (*a*).<br>Lieutenant F. W. Cotton.<br>" F. M. Parry.<br>" W. J. P. Adye-Curran.<br>" J. G. Foster.<br>" E. G. Ford.<br>" L. M. Purser.<br>" H. B. Fawcus.<br>" T. E. Fielding.<br>*Civil Surgeons.*<br>Mr. W. J. I. Bruce.<br>" W. J. Collins.<br>" J. G. F. Hosken.<br>" A. W. Izard.<br>" Mr E. O'Dea.<br>" L. E. Owen.<br>" W. M. Power.<br>" R. B. Williams.<br>*Army Nursing Service Reserve.*<br>Nursing Sister Miss M. A. Blair<br>" " " S. Brown.<br>" " " M. E. Buse.<br>" " " A. E. Byrne.<br>" " " A. D. Cameron.<br>" " " E. P. Carruthers.<br>" " " S. A. Claridge.<br>" " " C. Condell.<br>" " " G. Deacon.<br>" " " F. Donald.<br>" " " C. D. Elmslie.<br>" " " M. A. C. Grant.<br>" " " A. M. McIntosh.<br>" " " E. McIntosh.<br>" " " M. M. McIntosh.<br>" " " M. A. C. Millington.<br>" " " J. E. Phillips.<br>" " " K. M. Picot.<br>" " " G. L. Shelley.<br>" " " A. A. S. Webster.<br>(Three female servants.) | One quartermaster to join the unit in South Africa; one warrant officer and 144 non-commissioned officers and men (including 52 men St. John Ambulance Brigade); one warrant officer to join the unit on its arrival in South Africa; one special cook. |

(*a*) Secretary and registrar: to act as officer in charge of the unit until its arrival in Natal.

1. The Principal Medical Officer, Natal, will arrange for a Lieutenant-Colonel of the Royal Army Medical Corps in South Africa to be detailed as officer in charge of the unit.

2. A superintendent or acting superintendent to be selected from the Army Nursing Service in South Africa.

Medical Division, War Office, June 28th, 1900.

## FIELD FORCE—SOUTH AFRICA.

*Nominal Roll of the Army Nursing Service Reserve detailed for duty with No. 13 General Hospital.*

| Unit. | Names. | Remarks. |
|---|---|---|
| No. 13 General Hospital. | Nursing Sister Miss I. J. Armitstead.<br>" " " L. J. Attree.<br>" " " C. Brown.<br>" " " L. A. Cowley.<br>" " " B. Crocker.<br>" " " J. F. Farrer.<br>" " " G. E. Francis.<br>" " " H. Freer.<br>" " " M. Hay.<br>" " " E. Heaton-Cole.<br>" " " J. Mason.<br>" " " J. McLeish.<br>" " " M. J. McNair.<br>" " " M. C. Reilly.<br>" " " F. Smallwood.<br>" " " J. E. Smith.<br>" " " C. M. Theophilus.<br>" " " L. A. White.<br>" " " E. A. M. Wilson.<br>" " " A. Wishart.<br>(Three female servants.) | |

1. In addition to the male subordinates referred to in the table relating to No. 13 General Hospital dated War Office, 13th June, 1900, one special cook has since been despatched for duty with this hospital.

Medical Division, War Office, June 28th, 1900.

### A CORRECTION.

A correspondent has pointed out an error which has occurred in one of our letters from the front. In THE LANCET of June 16th, page 1744, first column, three lines from the top, the "Washington-Lyons disinfector" is alluded to. The disinfector which was purchased by the committee was not a "Washington-Lyons" disinfector, but the Equifex saturated-steam disinfector, which was supplied by Messrs. J. Defries and Sons of Gravel-lane, London, E.C.

In the July number of *Science Gossip* is an interesting article by Major B. M. Skinner, R.A.M.C., medical officer in charge of the staff of the 6th Division of the South Africa Field Force, at present at Bloemfontein. It is upon the geology of the region traversed by the army during the march from Enslin to Bloemfontein. Major Skinner, who is a skilled geologist, describes the extraordinary appearance and formation of this inhospitable country. The article is illustrated by diagrams of sections.

# THE ANTI-MALARIAL CAMPAIGN IN THE AGRO ROMANO.

As the first systematic attempt on a large scale to grapple with the problem of how best to combat malaria in the light of recent discoveries is about to begin in the Agro Romano the following translation of the instructions issued by the Bureau of Hygiene of Rome to the medical men who are to engage in this campaign will prove of interest. In view of the importance of this great experiment, and in order that the conditions under which it is being carried out may be better understood, we give these instructions in full. They are due, we understand, to the combined labours of Bastianelli, Gualdi, Postemski, and Dionisi.

### GENERAL INSTRUCTIONS.

To the medical men stationed in the Agro Romana (*medici stazionari*) is entrusted the duty of preparing the work for the summer and autumn seasons before the arrival of the ambulances. They will coöperate with the ambulance medical officers (*medici ambulanti*) when the latter arrive, aiding them with that readiness and cordiality which ought to subsist between cultivators of the humane art in carrying out their common task. They will instruct their colleagues in such matters as the topography of the sanitary station and the position of the different farm-steadings, and proffer counsel and help in the difficulties which may be encountered both in the obtaining of servants and the procuring of the ordinary necessities of life.

*Instructions for May and June.*—1. The resident medical men will make an individual census of all permanent residents attached to the farms, as well as of their families. The particulars required of each person will be entered in the schedule for that purpose. 2. The schedule will be forwarded to the central office before June 15th. 3. The resident medical men will at the same time begin the treatment of all cases of relapses of malaria amongst these persons as well as among the mowers of hay and the reapers that may come to their knowledge, in accordance with the rule laid down in Table B (near the end.)

*Instructions for July.*—The ambulance medical officer, already informed by means of the schedule prepared by the resident medical man regarding the persons attached to the different agricultural and pastoral farm-steadings, will endeavour to become personally acquainted with the chief managers (stewards and factors) and the people in their charge, paying special attention to the cowherds, buffalo-herds, and horse-herds who are resident all the year through. He will commence the treatment of malarial patients and will continue it when begun by his colleague and advise as to the requisite prophylactic measures. A special table is given at the end showing the indications to be followed for treatment and for prophylaxis. During the first few days of the month begins the work of the threshing-floor (threshing of oats and wheat) directed by a manager who has under his orders the following persons—viz., one or two sub-managers, one overseer (foreman of the labourers), one herdsman, and sometimes also a herd-boy, a variable number of labourers (who attend to the transport of the sheaves of oats or wheat from the fields where it is reaped to the place where the threshing

machines are erected), one or two mechanics, one or two gangs of workers (consisting of from 30 to 40 persons for each threshing machine), one gang of builders of straw stacks, and one gang for pressing the straw. The ambulance medical officer will learn from the factor where and at what hour he can most conveniently see the foreman and labourers without disturbing their regular work. The hours most favourable for this are usually from 11 A.M. till 1 o'clock P.M. He will take notes in regard to each of the labourers (about the majority of whom he will already have information from the schedule drawn up by the resident medical man) on the schedule provided for the purpose, and of the conditions of health with respect to malaria. He will proceed actively with the treatment of all malarial patients, administering quinine in the manner indicated in Table B ("Treatment of Relapsing Fevers") and will give directions how infection is to be avoided as explained under "Prophylactic Measures." The labourers sleep in the open air as a rule for several hours at night, usually from 9 o'clock till midnight or 1 o'clock, and in the daytime generally from 12 to 1 o'clock. In regard to the quinine administered he will make notes in the diary annexed to the schedule. The majority of the labourers working at the threshing-machines, at the straw press, and at the building of straw stacks will be inscribed on their proper schedule, in which will also be reported the reply given by them to any questions. The relays of workpeople rest every four hours; the medical officer could therefore obtain the information he requires at 8 A.M., at 12 noon, or at 4 P.M. For these inquiries one day at each of the threshing-floors where the machines are at work should suffice. During the subsequent days the medical officer will inspect the threshing-floors, the cattle-farms, and the farm-steadings at such hour as he may deem most opportune, and he will keep accurate notes of the malarial relapses and of the primary attacks as well as of all therapeutic measures adopted. Every week a medical inspector will come to supervise the treatment in the interest of the patients. Towards the end of July the medical officer will obtain information from the overseers as to the number of the harvesters (men and women) who may have come to the farms and as to the place where they may most easily be found. Of these, also, he will make out a detailed list.[1]

*Instructions for August.*—During the first days of August the Campagna is nearly deserted. Farm work comes to an end and the more fortunate of the workers return to their homes while those who are fever-stricken repair to the hospitals of Rome. Some gangs engaged in the building of straw stacks or attending to the straw presses remain and a few men come to set fire to the stubble. The fixed population is represented by the overseer and by one or two labourers who reside permanently on the farm. The medical officer must keep a record of those remaining and of the new arrivals who are suffering from fever, treat those suffering from fever, and give all of them instructions as to the prophylactic measures to be observed. Those engaged in herding, who live on the cattle-farms, should be watched with especial attention. On farms where there are marshes marsh grasses are cut during this month. The workers are recruited from those who assist during winter and spring in the suburban vineyards and they remain on the farms for about a month. During this month, too, a supply of rushes is taken from the rush beds and the water-melons are gathered in; and on the sea-shore appear the tents of the mussel-gatherers who nearly all take fever. The medical officer will be able to collect accurate particulars from the overseers so as to follow up these various groups of workpeople who will nearly always require his services. Towards the end of August the labourers begin to return and farm-work gradually re-commences. The manager, the sub-manager, the overseer, the baker, and the mason, often with their families, all resume their avocations. It is indispensable that the medical officer should make notes in the schedules as to the condition of health in each individual case, both of those who have remained and of those who may return, that he treat all patients affected with fever, and that he give full instructions regarding prophylactic measures.

*Instructions for September.*—In September the work-people who reap the maize arrive. Amongst these will be found the greatest number of cases of fever; nearly all of the sufferers have taken part in the work of the threshing-floor, and some have left the hospital only a few days before. They sleep in the open or in small tents. The medical officer will fill up the schedules for each individual and generally carry out the same instructions as those given for the threshing-floor workers both in regard to treatment and to means of prophylaxis. The number of labourers now continues to increase, because from the first of the month onwards the work of preparing the soil for the sowing begins, while on some farms the first ploughing is now done. Besides the ordinary labourers some other workpeople, generally youths and boys, assist at this work, some of whom have come to the Campagna for the first time. Their task is to free the ground from obstacles which might interfere with the passage of the plough. It is possible for these people, if they choose, to sleep under cover. All the foregoing classes of persons must have their state of health inquired into and be made to adopt the measures enumerated in the tables.[2]

*Instructions for October.*—In this month, in addition to the fixed population, who all return so as to number the same as in the spring, gangs of workmen arrive (mostly from Aquila and Romagna) for the purpose of attending to the construction and repair of the canals or water-furrows, and bands of boys also come who look after the seed. These usually live in houses. The flocks of sheep gradually return in full number to the Agro Romano during October. The chief herdsman, the shepherds, and the other attendants looking after these number on an average about one to every 250 sheep. The medical officer will make a detailed list of these attendants; as a rule, by taking advantage of Sunday he will be able to accomplish this task in a few days, even on the large farms. He will do his best to obtain the adoption of the prophylactic measures recommended and he will attend to the treatment of the settled population and eventually also of the new arrivals.

### PROPHYLACTIC MEASURES.

1. *General recommendations.*—Impress upon the workmen continually the advisability of never sleeping unless in closed shelters, houses, huts, tents, or under moveable mosquito nets. Even for a short nap during the day straw ricks and bushes are to be avoided.

2. *Recommendations to persons living in farm-buildings.*—Urge especially upon the manager of the farm whose circumstances will allow it the use of well-made mosquito nets. The ideal plan would be to fix in the windows wire nets painted white with meshes of two millimetres. Care must be taken at the same time that no mosquitoes enter by the doors, and that if they do they be destroyed. Distribute freely the larvicide powder,[3] pastilles, &c., to be burnt, with closed windows, every evening before bedtime. Hunt the mosquito constantly by burning damp straw, eucalyptus leaves, mint, or tobacco leaves in the room with windows closed; the mosquitoes lodge against window-panes or below the furniture, where they should be searched for and killed. It is useful to keep basins in the rooms with sugared water, especially where the mosquito net is used.

3. *Directions for persons living in huts and under tents.*—Numerous mosquitoes are apt to collect in the small huts of the encampments, the medical officer should therefore insist strongly upon prophylactic measures while the work of the threshing-floor is going on. The entrance to the tent should be furnished with a shutter of wire net, muslin, or linen. The inmates should sleep completely covered and perhaps wear a veil or special mask to protect more especially the head and hands. In the evening insecticide powders or pastilles should be burnt in the hut or under the tent. These will be supplied by the medical officer. Smoke thoroughly with damp straw or other suitable combustible material.

### RULES FOR THE TREATMENT OF PRIMARY MALARIAL INFECTIONS.[4]

The administration of quinine in tabloids each containing half a gramme of the sulphate should be recommended

[1] The drawing up of this schedule must be done during the medical officer's visit, as it takes very little time.

[2] In the second half of this month the flocks of sheep belonging to the farms nearer the city begin to return to the Agro Romano from their summer pastures. When this happens the shepherds and other men employed on the pastoral farms should have due attention.

[3] Zanzolina (a mixture of "larvicide"—made by the firm of Weilerter-Meer, Therdingen—unopened flowers of chrysanthemum cinerari solium and valerian root); quantity, one or two spoonfuls. Also powdered chrysanthemum flowers with nitre, &c.

[4] These rules are given for the sake of obtaining a desirable degree of uniformity in the treatment, and do not pretend to formulate as yet a definitive method of treatment.

during the subsidence or at the end of the febrile attack. The quantity administered should be two grammes daily for three successive days and one gramme daily for other four days. Tabloids sufficient for a week's treatment are to be given in a small box with appropriate directions to each patient. After the remedy has been suspended for five days it will be well to follow the directions for relapsing cases even although there be no return of the fever. Hypodermic injections are only to be employed in exceptional cases. The medical officer is recommended to supervise the treatment of primary æstival infections in which the fever of the first attacks should be suppressed as far as possible, experience having proved the importance for prophylaxis of early treatment.

RULES FOR THE TREATMENT OF RELAPSING MALARIAL FEVERS.

The administration of sulphate of quinine should be carried out as follows:—

After the last febrile attack, or during its decline, two grammes of the quinine in four tabloids are to be given. The following day the same doses are repeated. During the next five days one gramme of sulphate of quinine in two tabloids is administered, after which the treatment is to be suspended for a week. The following week the administration is to be resumed, the patient being supplied with the same quantity of quinine as in the first week, and the quantity taken regulated as before. When the fever no longer returns the daily dose should be reduced by one half. The administration is then to be again suspended for a week. In the fifth week the same amount is to be given in the same way as in the third week, and so also during the seventh week. As a rule it is not necessary to continue the administration beyond the seventh week. During the weeks in which the quinine is suspended, he may, if he thinks proper, administer "Bacelli's mixture"[5] or capsules and tabloids containing iron.

For convenience of reference the above rules may be stated in the following tabular form:—

TABLES FOR THE ADMINISTRTION OF QUININE.

*A. In Primary Malarial Fevers.*

(Tabloids of 50 centigrammes.)

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First | day (near end of febrile attack), | | | | | | | | 4 | tabloids; total, | 2 | grammes. |
| Second | ,, | ... | ... | ... | ... | ... | ... | ... | 4 | ,, ,, | 2 | ,, |
| Third | ,, | ... | ... | ... | ... | ... | ... | ... | 4 | ,, ,, | 2 | ,, |
| Fourth | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | gramme * |
| Fifth | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | ,, |
| Sixth | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | ,, |
| Seventh | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | ,, |

Suspend the administration for five days, then continue as in Table B.

*B. In Relapsing Malarial Fevers.*

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First | day (at end of febrile attack), | | | | | | | | 4 | tabloids; total, | 2 | grammes. |
| Second | ,, | ... | ... | ... | ... | ... | ... | ... | 4 | ,, ,, | 2 | ,, |
| Third | ,, | ... | ... | ... | ... | ... | ... | ... | 4 | ,, ,, | 2 | ,, |
| Fourth | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | gramme * |
| Fifth | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | ,, |
| Sixth | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | ,, |
| Seventh | ,, | ... | ... | ... | ... | ... | ... | ... | 2 | ,, ,, | 1 | ,, |

Second week.—Suspend quinine; daily observations, &c. (in anæmic persons five tablespoonfuls of "Bacelli's mixture").

Third week.—Repeat treatment as in first week, but if no return of fever reduce dose by one-half.

Fourth week.—Suspend quinine; daily observations (in anæmic cases four tablespoonfuls of "Bacelli's mixture").

Fifth week.—Repeat treatment as in third week, with the same precaution.

Sixth week.—Suspend quinine; observations (in anæmic cases four tablespoonfuls of "Bacelli's mixture").

Seventh week.—Repeat treatment as in fifth week. End of treatment if no return of fever.

* If on the fourth day after commencing treatment the fever does not disappear continue with doses of two grammes. In exceptional cases use hypodermic injections.

*Observations.*—The treatment of the fever, whether primary or secondary, should be commenced according to the scheme laid down, even when the last attack has occurred some days previously. Whenever the fever asserts itself it is best to recommence the treatment as for the first day and to continue according to the rules prescribed. The total dose of quinine should be given within two hours—i.e., at intervals of half hour, three quarters of an hour, or one hour, according to the fractions. A glass of water should, if possible, be drunk after every tabloid, acidulated by preference with lemon or vinegar. In children the doses should be reduced in proportion to age.

*Hypodermic and intravenous injections.*—Hypodermic injections are reserved for cases of intolerance of quinine by the stomach and for cases of pernicious fever. In these cases two hypodermic injections are made, each of one gramme of the bi-hydrochlorate of quinine dissolved in five grammes of distilled and sterilised water. A large syringe is employed, the lateral regions of the abdomen being chosen and the skin washed with gauze and absolute alcohol. The needle should also be sterilised with absolute alcohol or by boiling in a test-tube. The hypodermic solutions in sterilised vials, each containing one gramme of bi-hydrochlorate, will be supplied to the medical officer. The patient must then be conveyed to the temporary hospital or to the city. In the hospital injections of camphorated oil and caffeine will be made. During the two subsequent days two grammes of quinine must be given daily either by injection or by the mouth (one tabloid of half a gramme every hour). The intravenous injections according to Bacelli's method will be made in extreme cases in the sanitary station hospital. For these injections boiled solutions of neutral hydrochlorate of quinine at a temperature of 40° C. should be employed exclusively in doses of one gramme in 10 cubic centimetres of chloride of sodium solution (0·75 per cent.).

[5] "Bacelli's mixture" contains the following ingredients: sulphate of quinine, 3 grammes; tartaric acid, 3 grammes; arseniate of soda, 5 centigrammes; distilled water, 300 grammes. The dose for an adult is one tablespoonful

## ST. BARTHOLOMEW'S HOSPITAL AND CHRIST'S HOSPITAL.

FOR the past 15 years negotiations have been proceeding between the authorities of St. Bartholomew's Hospital and those of Christ's Hospital with regard to the former institution acquiring some or all of the land upon which the latter stands. Negotiations have now come to a dead-lock and on July 2nd a special court of the Governors of St. Bartholomew's Hospital was held to consider the situation. His Royal Highness the PRINCE OF WALES, President of the hospital, was in the chair and a full report drawn up by the treasurer and almoners was presented to the meeting. As this report was very lengthy, Sir SYDNEY WATERLOW recapitulated its main points in his speech as follows:—

As far back as the year 1885 the treasurer of Christ's Hospital wrote on behalf of his governing body stating that they would not fail to confer with the governors of this hospital in reference to the portion of their land which they desired to acquire. In the year 1890, after the constitution of Christ's Hospital had been revised, the new governing body resolved that negotiations be entered into with the governors of St. Bartholomew's Hospital to take as much of the Christ's Hospital site as they wished to have on the principle of arbitration with an umpire. We thus have the old governing body and the new governing body agreeing to sell us the land by arbitration. If this had been an agreement between two honourable commercial men there cannot be a doubt but it would have been regarded as binding, morally if not legally, but the governors of Christ's Hospital by their letter of November last entirely repudiate their agreement of 1893 and refuse to sell to us the land which we require for the enlargement of our hospital. The necessity for this enlargement is shown most clearly and distinctly by the letter from the medical and surgical staff dated November last in which they practically ask us to buy the whole site of Christ's Hospital. Personally I do not think that the purchase of the whole site would be a very speculative undertaking. ..... I hold in my hand the return of the sums available for hospital purposes during the last 30 years after paying all expenses. In 1869 our net revenue was £38,462, and in 1899 £72,454, or an increase of £34,000, thus nearly doubling our income in 30 years in face of great losses sustained upon many thousand acres of agricultural property in Essex, Lincolnshire, Kent, and elsewhere. Remembering that so large a portion of our property consists of houses and land in the great metropolis this increase is certainly worth at least 33 years' purchase and this would add £1,132,000 to our property in 30 years. ..... We cannot, I think, close this discussion without assuming for a moment that Parliament may not give us compulsory powers to purchase the land we require and that the governors of Christ's Hospital may not agree upon any terms that we can

accept. What position shall we be placed in? Well, it seems to me that we shall have but two alternatives, either to divide our work, separating to some extent the educational and scientific work from the nursing and treatment of sick patients. We possess some acres of small houses about a quarter of a mile north of this hospital where we might build a new hospital for some of the patients and where we might carry on the out-patients' work. This would be rather an advantage to the patients as the new hospital would be nearer their homes. If this course were not thought desirable there is another alternative. We might pull down all the older buildings, many of which are very dilapidated and the four blocks containing the patients. We should perhaps have to give up the church, the official residences, and the ground around them, and by rebuilding the hospital on modern lines with all the best modern appliances we could no doubt increase the accommodation from 30 to 40 per cent. Money could be borrowed. Let us try to imbue our hearts with the faith and hope which stimulated our great founder, Rahere, who in the year 1123, nearly eight centuries ago, started this hospital which from the beginning was "a hospital for the sick" and he, having no funds, begged at the new gate of the city for moneys to pay the expenses. Let his spirit stimulate us to go on to promote the prosperity of this old and Royal institution, always remembering that if we at any time feel obliged to appeal for more money we shall not make that appeal in vain.

A motion was then brought forward by Sir SYDNEY WATERLOW instructing the treasurer and almoners to adhere to the offer of £117,000 which had already been made for a portion of the site, and failing the acceptance of this that they should endeavour to effect a settlement upon the basis of the resolution of the Council of Almoners of Christ's Hospital which had been passed in December, 1893. Further, if neither of the above-mentioned alternatives should result in a contract to purchase, that Parliament should be applied to to obtain compulsory powers for purchase. This was seconded by Mr. WILLIAM FLUX and supported by the LORD MAYOR and Mr. G. BAKER.

The PRINCE OF WALES, before putting the motion, said that he only wished that the whole site could be bought, but that it was an absolute necessity that the one and a half acres should be acquired for which the sum of £117,000 had been offered. He trusted that the Charity Commissioners would back them up and that Parliament would not refuse. The motion was then put and carried unanimously.

There is but little to add to the simple statement made by Sir Sydney Waterlow. Everyone who has any acquaintance with St. Bartholomew's Hospital knows the urgent need for reconstruction and enlargement. The mortuary and post-mortem room are small, cramped, unwholesome, and quite inadequate for their purposes. The nurses' quarters must be reconstructed and rebuilt. The surgery is far too small and the college where the residents and students live consists of dark insanitary little houses. No one can blame Christ's Hospital for trying to get as much for their site as possible, but a promise is a promise and the authorities of Christ's Hospital have made a promise. Legal force it has none, but morally it is as binding as anything could be and if the almoners of Christ's Hospital break their parole it will not tend towards increasing public confidence in that body. A tyrannous king and an unscrupulous Minister did their best to ruin St. Bartholomew's Hospital when they laid sacrilegious hands upon the great priory of which the hospital had always formed a part, and although on the petition of the citizens of London the hospital was "refounded" and a beggarly pittance of 500 marks per annum given back out of its old revenues, it would be a fitting act for Parliament to step in and insure that Rahere's noble work shall not be again fettered.

## THE SEWERAGE OF LEICESTER.

A LONG series of experiments, extending over some thirteen and a half months, upon the bacterial treatment of the sewage of Leicester, at the Beaument Leys farm, have at length been completed. They were carried out under the direction of Mr. E. George Mawbey, M.Inst.C.E., the borough engineer and surveyor. The results of these experiments have been printed in full in the form of a report to the Leicester Highways Committee and the Sewerage and Sewage Works and Farms Committee. This report is accompanied by a large number of coloured diagrams which enable the reader readily to see the analytical results and percentages of improvement arrived at by the several experiments, and besides these there are a plan of the sewage farm and district and many well-arranged analytical tables. The several analyses were made by Mr. S. F. Barford, F.C.S., whose method of working is given in an addendum. The undertaking throughout reflects great credit, not only upon the authors of the report, but upon all who have contributed to render such an inquiry possible. The publication will doubtless prove most advantageous as guides in future developments of the bacterial treatment of sewage.

Leicester has been for some time past in great difficulties with its sewerage system, arising not only from questions of level and the inadequate size of many of the sewers but from the very faulty construction of the older ones, which circumstances combined tend to establish a condition of things most detrimental to health. Owing to the defective sewers an enormous volume of subsoil water has to be pumped in addition to the normal flow of sewage. Many districts are flooded at times of heavy rains. This state of things, aggravated by the heavy character and limited area of the land available for irrigation, has led to the present inquiry. It is now proposed to reconstruct at least some 10 miles of the more defective sewers and to adopt a modified system of bacterial treatment in conjunction with one of irrigation. By these means it is hoped that the authorities will be able to deal effectively with the sewage and to comply with the requirements of the Local Government Board with but a slight additional increase to the present area of their sewage farm. The estimated outlay is placed at about £170,000.

The experiments were conducted with the following plant: (1) an open detritus tank; (2) a closed detritus tank; (3) an open settling tank; (4) the same tank as No. 3, made air-tight with inlets and outlets trapped and worked as a septic tank; (5) a first contact bacteria bed filled with coarse filtering material; (6) old pasture land and land laid out for rye grass for treatment of the effluent; and (7) a second and third contact bacteria bed filled with fine filtering material for final treatment of effluent irrespectively of irrigation. No trial appears to have been made of any anaerobic bacteria bed having an upward action. In the experiments at Finchley sewage farm in 1898 conducted by Dr. H. R. Kenwood, assistant professor of public health in University College, London, and Dr. William Butler a bed or filter of this description was found to be most effective in liquefying the sludge, the best results being obtained by a long rest in the filter. The actual amount of purification that took place was, however, limited. Mr. Mawbey doubtless had reasons for not instituting such a trial; in fact, he states that at Leicester they have no difficulty in disposing of the sludge. The period of rest required might also have proved a drawback to its adoption.

Space will not allow us to follow the many experiments in detail. They amounted to 17 in all. The detritus tank was retained in each case, being sometimes placed under anaerobic conditions. The other tank and beds were used in varying sequence. Briefly, the experiments tended to test four systems: (1) the septic tank system; (2) clarifying by bacteria beds only; (3) a combination of the septic tank with bacteria beds; and (4) a combination of bacteria beds with subsequent irrigation. The results of these experiments have led Mr. Mawbey to recommend his committee to adopt the combined system of bacteria beds with irrigation, forming No. 7 of his series of trials, and taking all the circumstances into consideration no doubt he is well advised in this course.

The following is a short description of experiment No. 7, which was extended over a period of 33 weeks. The crude sewage first flowed through the closed detritus tank, the effluent from which was discharged upon a group of clarifying bacteria beds each taking nearly an hour to fill. In these beds it rested for two hours, and a like period of two hours was occupied in emptying them. Each bed then remained empty for three hours; the entire process occupied about eight hours, thus permitting the beds to be filled three times during the 24 hours. The effluent was then allowed to flow once only over a plot of pasture for a distance of about 80 yards before being discharged into the dike leading to the river.

There were in all 28 sets of analyses made between

Dec. 2nd, 1898, and July 2nd, 1899, the averages of which given in grains per gallon, are as follows.

*Matter in suspension.*—Crude sewage, 43·7; detritus tank, 20·32; bacteria beds, 4·87; and pasture, 0·385. Final percentage of purification on crude sewage, 99·12.

*Albuminoid ammonia.*—Crude sewage, 1·182; detritus tank, 0·893; bacteria beds, 0·343; and pasture, 0·156. Final percentage of purification on crude sewage, 86·76.

*Oxygen absorbed at 80° F. in four hours.*—Crude sewage, 7·442; detritus tank, 5·795; bacteria beds, 2·145; and pasture, 0·663. Final percentage of purification on crude sewage, 91·08.

*Nitrogen as nitrates.*—Crude sewage, 0·044; detritus tank, 0·044; bacteria beds, 0·068; and pasture, 0·172.

*Matter in solution.*—Crude sewage, 73 05; detritus tank, 71·15; bacteria beds, 68·3; and pasture, 63·95.

Looking at these results the process of sewage purification is well exemplified. In the passage of the sewage through the closed detritus tank a larger percentage of improvement is seen to have taken place than is to be accounted for merely by sedimentation. A certain loss of chemical stability is evidently acquired which would most likely have been increased had the flow through the tank been still further retarded. The sedimentation was, however, considerable, and the smell from the sludge upon its removal from this closed tank is said to have been horribly offensive. In the aerobic bacteria beds, as might have been expected, the original details of the several analyses show that the amount of albuminoid ammonia and of oxygen absorbed varies greatly. This is of course also the case in the crude sewage, but in the several effluents the variation is also great in the proportional improvement effected, suggesting that at times the beds were being over-worked. It is well known that a bacteria bed of a given area is only capable of showing a certain improvement in its effluent in a given time from sewage of a fixed standard of strength; should this standard vary the character of the effluent varies accordingly. Mr. D. Scott Moncrieff, C.I.E., states that the best results are obtained from a filter when the strength of the sewage supplied to it is most constant. A perusal of the tables relating to the other experiments tends to confirm a previous suspicion—viz., that what is known as the septic tank system is only capable of a limited application. In large manufacturing towns with sewage conditions like those of Bradford, for instance, it might be likely to lead to disappointment.

At the end of the report are printed some interesting notes with illustrations of microscopical work by Dr. A. C. Houston relating to the experiments on London sewage at the Crossness outfall.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6592 births and 3368 deaths were registered during the week ending June 30th. The annual rate of mortality in these towns, which had been 18·0 and 14·9 per 1000 in the two preceding weeks, rose again to 15·1 last week. In London the death-rate was 14·5 per 1000, while it averaged 15·6 in the 32 provincial towns. The lowest death-rates in these towns were 9·0 in West Ham, 9·4 in Portsmouth and in Swansea, and 9·9 in Croydon; the highest rates were 18·1 in Halifax, 18·6 in Wolverhampton, 20·7 in Manchester, 21·3 in Salford, and 22·7 in Liverpool. The 3368 deaths in these towns included 419 which were referred to the principal zymotic diseases, against 427 and 366 in the two preceding weeks; of these 112 resulted from measles, 110 from whooping-cough, 70 from diphtheria, 55 from diarrhœa, 44 from scarlet fever, 27 from "fever" (principally enteric), and one from small-pox. No fatal case of any of these diseases occurred last week in Halifax; in the other towns they caused the lowest death-rates in Brighton, Portsmouth, Plymouth, and Preston; and the highest rates in Derby, Blackburn, Huddersfield, Sheffield, and Sunderland. The greatest mortality from measles occurred in Cardiff, Derby, Huddersfield, Hull, and Sunderland; from scarlet fever in Blackburn and Gateshead; from whooping-cough in Wolverhampton, Derby, Oldham, Sheffield, and Gateshead; from "fever" in Huddersfield; and from diarrhœa in Birkenhead and Blackburn. The 70 deaths from diphtheria included 29 in London, 10 in Sheffield, six in Leicester, and five in Liverpool. One fatal case of small-pox was registered in Salford,* but not one in any other of the 33 large towns. There were 16 small-pox patients under treatment in the Metropolitan Asylums Hospitals, on Saturday last, June 30th, against 15 and 13 at the end of the two preceding weeks; eight new cases were admitted during the week, against eight and one in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1832, against 1754, 1766, and 1810 on the three preceding Saturdays. 210 new cases were admitted during the week, against 203, 210, and 219 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 268, 257, and 181 in the three preceding weeks, further declined last week to 180, and were eight below the corrected average. The causes of 40, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bolton, Oldham, Hull, and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Swansea, Birmingham, Liverpool, Bradford, and Sunderland.

## HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·9 and 16·5 per 1000 in the two preceding weeks, rose again to 17·9 during the week ending June 30th, and was 2·8 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 12·6 in Leith and 13·3 in Aberdeen to 21·9 in Perth and 25 8 in Greenock. The 552 deaths in these towns included 26 which were referred to whooping-cough, 24 to diarrhœa, 18 to measles, seven to scarlet fever, four to "fever," two to small-pox, and two to diphtheria. In all 83 deaths resulted from these principal zymotic diseases, against 78 and 60 in the two preceding weeks. These 83 deaths were equal to an annual rate of 2·7 per 1000, which was 0·8 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of whooping-cough, which had been 21 and 18 in the two preceding weeks, rose again last week to 26, of which 23 occurred in Glasgow. The deaths from diarrhœa, which had been 22 and 19 in the two preceding weeks, rose again to 24 last week, and included eight in Glasgow, four in Edinburgh, four in Dundee, three in Aberdeen, and three in Greenock. The deaths from measles, which had been 23 and 14 in the two preceding weeks, rose again last week to 18, of which 11 were registered in Glasgow and four in Edinburgh. The fatal cases of scarlet fever, which had been six, six, and two in the three preceding weeks, rose again to seven last week, and included five in Glasgow. The deaths referred to different forms of "fever," which had been two in each of the two preceding weeks, rose last week to four, of which two were registered in Edinburgh. The two fatal cases of small-pox occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 106 to 87 in the three preceding weeks, rose again last week to 97, and were 20 above the number in the corresponding period of last year. The causes of 26, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

## HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·8 and 17·9 per 1000 in the two preceding weeks, rose again to 20·0 during the week ending June 30th. During the 13 weeks of the quarter ending Saturday last the death-rate in the city has averaged 25·4 per 1000, the rate during the same period being 17·6 in London and 19·0 in Edinburgh. The 134 deaths belonging to Dublin registered during the week under notice were 14 in excess of the number in the preceding week, and included three which were referred to the principal zymotic diseases, against 10, six, and four in the three preceding weeks; of these, two resulted from whooping-cough and one from diarrhœa. These three deaths were equal to an annual rate of 4·0 per 1000, the zymotic death-rate during the same period being 2·0 in London and 1·9 in Edinburgh. The mortality both from whooping-cough and from diarrhœa exceeded that recorded in the preceding week. The 134 deaths in Dublin last week included 19 of infants under one year of age and 33 of

persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons were slightly in excess of the number in the preceding week. Seven inquest cases and four deaths from violence were registered; and 38, or more than a quarter, of the deaths occurred in public institutions. The causes of eight, or nearly 6 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified: — Staff-Surgeon H. Holyoake to the *Vindictive*. Surgeons: G. B. Brown to the *Britomart;* J. W. Bird to the *Bramble;* J. O'Hea to the *St. Vincent* and G. M. Eastment to the *Excellent*, both lent during the manœuvres; G. E. Glynn to the *Vindictive;* and J. H. Lightfoot to the *Boscawen* for the *Wanderer*.

### ROYAL ARMY MEDICAL CORPS.

Major F. M. Baker has joined at Woolwich for duty. Captain C. K. Morgan has been granted leave of absence out of India for six months on medical certificate. Colonel William E. Riordan is placed on retired pay. Lieutenant-Colonel James McNamara to be Colonel, vice W. E. Riordan.

### MILITIA MEDICAL STAFF CORPS.

Ernest Urquhart Bartholomew to be Surgeon-Lieutenant.

### VOLUNTEER CORPS.

*Royal Engineers:* 1st Bedfordshire: Arthur Conning Hartley to be Surgeon-Lieutenant. *Rifle:* The Queen's Rifle Volunteer Brigade the Royal Scots (Lothian Regiment): Surgeon-Captain John Hugh Alexander Laing resigns his commission and is appointed Captain. 3rd Volunteer Battalion the Lincolnshire Regiment: James Matthews Duncan to be Surgeon-Lieutenant. 2nd Volunteer Battalion the Worcestershire Regiment: Cecil Aloysius Corke to be Surgeon-Lieutenant. 1st Volunteer Battalion the Loyal North Lancashire Regiment: Surgeon-Captain Charles Samuel Alfred Rigby resigns his commission and is appointed Captain.

### TRANSVAAL WAR NOTES.

The first report of the American Hospital Ship (*Maine*) Fund for South Africa from Oct. 27th, 1899, to April 30th, 1900, has just been issued. Besides lists of subscriptions, donations, &c., it contains reproductions of photographs of Lady Randolph Churchill and her son, Surgeon-Lieutenant-Colonel Hensman and the nursing sisters, the surgeons, and the *Maine*.

Civil Surgeons R. B. Williams, W. J. Collins, and Pullin have embarked for South Africa.

Staff Surgeon E. P. Mourilyan, R.N., of the South African Naval Brigade, is returning to England invalided.

Major Whaite, R.A.M.C., Captain Dalton, R.A.M.C.. and Lieutenant Cuddon-Fletcher, R.A.M.C., have left South Africa for England invalided.

Civil Surgeons Nicol, Goodman, and Thomas are returning invalided from South Africa.

The Welsh Hospital was ready for the reception of patients on June 1st. The huts, nurses, assistant surgeons, and 13 dressers and orderlies were sent to Springfontein on May 25th and on the last day of that month the late Professor T. Jones, Dr. Lynn Thomas, and Dr. Mills-Roberts arrived. The site of the hospital at Springfontein is 5000 feet above the level of the sea. Letters have been received in Cardiff from the hospital staff describing their quarters as "comfortable and almost luxurious." Patients too have written and spoken in high praise of the hospital.

Twenty nurses selected from the nursing staff of the London Hospital are being sent out to South Africa immediately.

The Prince and Princess of Wales have fitted up a farmhouse close to Sandringham for the use of officers invalided from the war who need convalescent help and have nowhere to go. This home in the first instance will be offered to colonial officers who will be considered as their Royal Highness's guests.

### TRANSVAAL WAR CASUALTIES.

Civil Surgeon W. B. Bennett is reported dangerously ill in No. 1 Stationary Hospital, Mooi river.

Major Dodd, R.A.M.C., is seriously ill at the Base Hospital, Maritzburg.

### ARMY MEDICAL SCHOOL, NETLEY.

The following is a list of Surgeons on probation of the Indian Medical Service who were successful at both the London and Netley examinations, June 30th, 1900. The prizes are awarded for marks gained in the special subjects taught at the Army Medical School. The final positions of these gentlemen are determined by the marks gained in London added to those gained at Netley and the combined numbers are accordingly shown in the list which follows:—

| | | Marks. | | | Marks. |
|---|---|---|---|---|---|
| * | 1. Graham, J. D. ... | 6508 | | 10. Macnee, H. R. ... ... | 5017 |
| † | 2. Sprawson, C. A. ... | 5875 | ** | 11. Deas, L. J. M. ... ... | 4899 |
| ‡ | 3. Mackelvie, A. ... ... | 5495 | | 12. Houston, W. M. ... | 4875 |
| § | 4. Lapsley, W. ... ... | 5417 | | 13. Keys, W. D. A. ... | 4645 |
| | 5. Cazaly, W. H. ... ... | 5370 | | 14. Young, G. J. G. ... | 4534 |
| | 6. Browne, P. A. ... ... | 5354 | | 15. Good, J. ... ... ... | 4501 |
| ‖ | 7. Coppinger, W. V. ... | 5336 | | 16. Chalmers, A. ... ... | 4479 |
| ¶ | 8. Spitteler, A. ... ... | 5127 | | 17. Hamilton, W. G. ... | 4375 |
| | 9. Oxley, J. C. S.... ... | 5025 | | 18. Godkin, S. E. ... ... | 4314 |

* Gained the de Chaumont Prize in Hygiene, Hon. Mention in Surgery.

† Gained the Herbert Prize of £20, First Montefiore Prize of £21 and Medal, the Pathology Prize. and Hon. Mention in Hygiene.

‡ Gained the Second Montefiore Prize, and Hon. Mention in Medicine.

§ Gained the Parkes Memorial Prize, Martin Memorial Gold Medal, Hon. Mentions in Pathology and Surgery.

‖ Hon. Mention in Pathology.

¶ Hon. Mention in Medicine.

** Gained the Maclean Prize in Clinical and Ward Work.

Owing to the war in South Africa there was no public distribution of prizes. The prizes were privately distributed by Colonel K. McLeod, M.D. Edin., LL.D. Aberd., Professor of Military and Tropical Medicine.

### DEATHS IN THE SERVICES.

Inspector-General of Hospitals Thomas Walter Barrow (retired) at his residence at Woolwich on July 1st in his 83rd year. He entered the army in 1841 and served with the 2nd Queen's Royals in Scinde in 1843. In the Southern Mahratta country in 1844 he was present at the storming and capture of Fort Punella, and he took part in the campaign in the Concan in 1845, when Forts Monahur and Monsautosh were captured. He was also engaged in the Kaffir War of 1852-3. In August, 1864, he proceeded to Bermuda as Principal Medical Officer of a medical relief force in consequence of an epidemic of yellow fever which devastated the troops and population of the islands. For this service he was promoted to the rank of Deputy Inspector-General, the special General Order issued referring to his "highly meritorious services" in connexion with the epidemic. In 1865 he was appointed principal medical officer of Nova Scotia, and in 1866 to the same position at Woolwich and the London district. He retired in 1868.

### THE CRISIS IN CHINA.

The following officers are reported as having been landed with Vice-Admiral Sir E. H. Seymour in North China:—Fleet Surgeon: T. M. Sibbald, H.M. battleship *Centurion*. Surgeon: E. D. Macnamara, H.M. cruiser *Endymion*. The *Jelunga*, No. 7 Transport, which left Portsmouth on Saturday, June 30th, with reinforcements for China, had on board the following medical officers:—Staff Surgeon W. E. Home (in medical charge); Surgeon A. Gaskell, Surgeon J. D. S Milln, and Surgeon R. C. Munday.

Staff-Surgeon J. Mc C. Martin, D.S.O., R.N., and Surgeon N. Roche, have left for China in the P. and O. steamship *Australia*.

The *Jelunga* carries a large supply of field chests, medicines, surgical instruments, Roentgen ray apparatus, ice machines, surgical dressings and appliances, and all other necessaries, so that after discharging the naval force which she is conveying to China, if necessity should arise, she can be converted into a hospital ship on that station for naval purposes.

### WARS: PRESENT AND PROSPECTIVE.

The Imperial idea and system are costing this country a large amount in blood and treasure at the present time. Setting aside the South African and Ashanti campaigns we have to take our part in the trouble in China, which promises to be, and is indeed already, a very formidable business. There will inevitably be a great demand for your g medical men.

# Correspondence.

"Audi alteram partem."

## THE PROPOSED MEETING OF THE INTERNATIONAL CONGRESS OF OBSTETRICS AND GYNÆCOLOGY IN LONDON IN 1902.

*To the Editors of* THE LANCET.

SIRS,—It is a fair question for discussion whether international medical congresses are of any real service to medical science, but most of us will agree that they may be made pleasant and interesting. They may be even advantageous to individuals in enabling them to form correcting personal impressions of men whose published contributions to special medical literature they have been accustomed to read, and so to assess the value of their work. Assuming that these congresses are worth the trouble of organising, we shall be unanimous in professing to believe that they are the last class of medical assembly in the arrangements of which mere local dislikes and jealousies should come into play, or where places of honour, rightfully bestowed in recognition of distinction upon those most honoured by their countrymen who know them best, should by misadventure or mismanagement be conferred upon mere pushfulness and self-seeking. These reflections, and many others of a like nature, arise from the painful reading which you provided by the publication, in May this year, of the letters of the teachers of obstetrics and gynæcology in London and of the chief official representatives of the British Gynæcological Society anent the proposed International Congress of Obstetrics and Gynæcology to be held in London in 1902. But to all who take an interest in the progress of gynæcological science in England and are desirous of seeing British gynæcology held in honour by the medical profession throughout the United Kingdom, the feeling of pain and regret produced by the quarrel must be greatly deepened by a perusal of a "*précis* of proceedings relating to the proposed meeting of the International Congress, &c.," published in the last number of the *British Gynæcological Journal*. It is a summary of the proceedings of the British Gynæcological Society which culminated in the present unhappy position. Many men who are provincial specialists, or who specialise to the extent of being interested, are asking whether something cannot be done to relieve the tension and remove the deadlock between the two great societies in London, the persistence of which will entail a disastrous *fiasco* and a discredit to British gynæcologists in general if the present project to hold an international congress is not abandoned.

In intervening in the dispute and asking you to permit me to put certain considerations before your readers as a contribution towards the happy solution of existing difficulties I am not unmindful of the possible consequences to the candid friend. But after much cogitation I have reached the conclusion that certain circumstances call upon me to say something on the subject, and I respond to the call in the hope that some others, placed like myself outside the circles where personal considerations may unconsciously exercise a biasing influence, may be encouraged to come forward and lend the assistance of their opinions and advice. I have reason to believe that at the present time I am a member of Council both of the Obstetrical Society of London and of the British Gynæcological Society; I am also on the Council of the North of England Obstetrical and Gynæcological Society. These three societies between them cover the whole of England and to some extent overlap. Many provincial specialists are members of one or other of the London societies; some of my friends are, like myself, members of all three. I attended the International Congress at Geneva in 1896 and that at Amsterdam in August last. There were many opportunities of learning foreign and American opinion and of seeing ourselves as others see us. And these opportunities in my case were still further increased by renewing acquaintance with many American representative men at the congress of American obstetricians and gynæcologists at Indianapolis last September, and hearing their frank but friendly criticisms of the British *Fachgenossen*. Now, in the light of my own personal knowledge of American opinion, and remembering the importance of the American element in every international meeting, I am amazed at the want of consideration given by the Council of the British Gynæcological Society to the repeated spoken and written statements of Dr. Engelmann, president of the American Gynæcological Society, to the effect that "the invitation could be accepted only, and the Congress could be a success only, if the two great societies of Great Britain are united in their desire to see the Congress in their midst."

What then is the present situation? After this clear expression of opinion from the chief official representative of America; after the refusal of the Obstetrical Society to issue a joint invitation to the Congress; after the letter of the past and present lecturers and teachers of obstetrics and gynæcology in the London medical schools unanimously declining to promote or join the Congress; and even after the withdrawal of Professor Simpson from the position of president-elect on the ground that the Organisation Committee of the British Gynæcological Society was not sufficiently representative of metropolitan gynæcology, the council of the British Gynæcological Society still persevere in their unfortunate course. They have assured the permanent secretary of the Congress (Dr. Jacobs of Brussels) "that the Organisation Committee are anxious to do all they can to make the 1902 Congress a success and will continue energetically with the work they have commenced." Then they proceed to place themselves "at the disposal of the founders" and to give these foreign gentlemen the opportunity of reconsidering their acceptance of the invitation. Now, with all respect to my friends of the British Gynæcological Society I maintain that they thereby place themselves in an undignified, not to say ridiculous, position, and if they are as representative as they allege they drag British gynæcology with them. They reject the advice of friendly America, whose much-travelled representative men know us and understand us as we do one another, and they humiliate themselves before an unorganised committee of foreigners—a tribunal *pour rire*—who are notoriously and incurably ignorant of the personality and relative standing of British gynæcologists, and are separated from us by the gulf of alien ethical standards. Furthermore, there is a dilemma. If the invitation is still accepted the congress is bound to be a failure, perhaps as marked as that of Amsterdam, which was shunned by all Germans of distinction. On the other hand, if the invitation is not accepted after all, then the committee of the British Gynæcological Society bring upon themselves a snubbing which the consciousness of their singularly representative position must make all the more grievous and hard to bear.

In my humble opinion the Organisation Committee were in duty bound to make a stand, and in the exercise of their own judgment to come to a decision in this matter regardless of foreign influence. It is eminently a question for British gynæcologists and for them alone. If the actions of the Organisation Committee originated in disinterested public spirit (and how can it be otherwise?) they must seek to coöperate in bringing about a congress successful from both the scientific and social points of view, and they must desire to see in places of distinction on that occasion the colleagues whom *we in England* honour because of their character and work achieved. If this be so then the committee is bound to respond to unmistakeable expressions of opinion which are of weight beyond cavil, to hold all proceedings so far as quashed, to withdraw their invitation, and to join in a movement *de novo* towards the end in view.

The relations between the Obstetrical Society of London and the British Gynæcological Society are pretty well known and appreciated by provincial specialists both in their origin and incidents. But these relations, though largely responsible for the present situation, form too large and general a subject for discussion now. There have been, in the opinion of provincials, grievous faults on both sides. The refusal of the Obstetrical Society to coöperate with the British Gynæcological Society was perhaps too curt and unqualified, and is to be regretted. But those who know the history of the relations between the two societies must feel that, until men have developed a saintly meekness almost incompatible with vigorous action, no other result was to be expected. The Obstetrical Society has never received much encouragement to take part in the proceedings of the International Congress. Members of an inner circle of the British Gynæcological Society have been too frequently nominated, as the best that England could produce, to introduce or take prominent places in the official discussions, and

these have not seldom been men who would never have been selected as representatives by any conceivable parliament of British gynæcologists.

I remember well the presentation of the invitation from Great Britain to the Congress at Geneva. The deputation consisted essentially of two official members of the British Gynæcological Society who were notoriously antagonistic to the Obstetrical Society. And it should be remembered that the invitation presented at Amsterdam was merely a renewal of that given at Geneva. Dr. MacNaughton Jones and his colleagues appear to think that they play a trump card when they call attention to the fact that the invitation was presented at Amsterdam by Dr. Robert Barnes. Still, men have an awkward way of looking at the true inwardness of things, and not at mere formulæ; and the result of that honest examination of the situation was the remonstrances from America and by no means cryptic hints from many other quarters, as to the need for a working arrangement with the Obstetrical Society. These hints were ignored until it was discovered that arrangements which could be made apparently to succeed at meetings in foreign capitals would not suit a congress held in London. Hence, obviously, the too belated proposal of coöperation made to the Obstetrical Society. In some journals which have been sent to me I regret to read injurious references to the action of the lecturers and teachers of obstetrics and gynæcology of the London medical schools. Epithets are not arguments which tend to conciliation. The unanimity of these teachers and their dignified expression of refusal to take part in a congress for which important arrangements had been already completed is an impressive fact which should form food for reflection, not a subject for reviling and sarcastic levities.

The question still remains: Can anything yet be done to put British gynæcology in its proper place in the opinion of the specialists of Europe and America, and to bring about some time the holding of a creditably successful International Congress in England? As a provincial specialist knowing the opinions of many men similarly situated, who, like myself, are not conscious of envy or jealousy even towards London colleagues, I would submit that the time has long gone by when London societies could justly arrogate to themselves the right to speak for British gynæcology. Any truly representative body must have a wider basis. To be practical I would suggest something like the following, if the game be generally thought worth the candle. Let the honorary secretaries of all the existing Societies of Obstetrics and Gynæcology in the United Kingdom of Great Britain and Ireland form a convening committee to start with. It should be the function of this committee to form a grand committee of the members of these societies. Each of the societies could send a sufficient number of delegates to a meeting in London or elsewhere, as might be agreed, to elect an executive committee, or themselves to form an executive committee, to deal with the question of an international congress and other matters. If from this movement a great comprehensive society, on the model of the German Gynæcological Society, were to take shape and development so much the better. It would be premature to suggest further details. If among the specialists in obstetrics and gynæcology of the United Kingdom there is sufficient goodwill the way will be found.

I am, Sirs, yours faithfully,

Manchester, June 30th, 1900. W. J. SINCLAIR.

## "THE RELATIONSHIP OF MALARIA AND THE MOSQUITO."

*To the Editors of* THE LANCET.

SIRS,—The interesting letter by Dr. Dauber in THE LANCET of June 23rd (p. 1834) requires a rather full reply, as his opinions are certainly shared by a considerable number of medical men, both in this country and the tropics. I trust that you can allow me sufficient space to deal with his arguments in some detail.

While admitting that "mosquitoes may frequently act as alternative or intermediary [he means *definitive*] hosts with man of the malaria parasite," he demurs to the dogma that the bite of *Anopheles* constitutes the only mode of infection. I should say at once that no one can as yet be *absolutely certain* that there is no other mode of infection. We differ only as to the degree of probability which attaches to the hypothesis that there is another mode of infection. Koch and the Italians think that there is very little probability at all in favour of this view. Manson and Laveran are more inclined towards it. Your correspondent, with many others, tends to the other extreme and still believes in the miasma *plus* the mosquito. Speaking for myself I must confess that I think it extremely unlikely that there is another route of infection besides the bite of the mosquito; I have met neither with facts nor with what appear to me to be sound arguments in favour of such a thing; while there are many extremely cogent arguments against it. At the same time I keep a perfectly open mind on the subject, and am quite willing to be converted by any good evidence which may be adduced in the future.

No one accustomed to sifting scientific evidence will, I fancy, be quite prepared to accept Dr. Dauber's. In order definitely to prove that a given outbreak of fever is not due to *Anopheles* it must clearly be shown that *Anopheles* were not present when the original infections occurred. It must also be certain that the cases of fever under consideration were first infections and not relapses; and, of course, that the disease was really malarial fever is a point which must have been established by microscopical methods before the case can be admitted into court. But your correspondent gives no precise details of this nature. He talks about "fever" and "swarms of mosquitoes" without specifying what fever and what mosquitoes. His instances appear to be based on very indefinite information. Even if his facts be admitted they often point in just the opposite direction to what he supposes, while he himself seems to think that popular impressions carry the force of experimental evidence. I will take his instances in the order in which he gives them. He quotes in support of his opinions a medical work in which "a chill, a wetting, the turning over of virgin soil, exposure, and fatigue are credited with causing fever as well as direct infection from mosquitoes." I hope that this medical work did not intend to imply that a malarial infection, a parasitic invasion, can be caused by a chill. One might as well say that round worms are produced by a chill. What I suppose the medical work really means is that a *relapse* may be precipitated by a chill, by fatigue, and so on—a thing with which we are familiar in many diseases and which has nothing to do with the original entry of the infecting parasites. I will deal later with the case of the "virgin soil." Dr. Dauber then proceeds to quote a writer in the *Times* who talks about the insalubrity of Pretoria and thinks that "the miasmas at sunset, attended by a bone-piercing cold, are especially dangerous." This is no evidence. The writer in the *Times*, voicing the popular idea, may believe in miasmas if he likes; but this does not go far to prove that they exist. What investigations has the writer in the *Times* made on the subject? As a matter of fact he seems to think that the miasmas arise from the "filthy habits of the genuine Boer"—a novel source for malaria. The writer in the *Times* may be Brown, Jones, or Robinson—the question is whether he knows anything at all about the matter. Next, your correspondent discusses the immunity which is supposed to be enjoyed by those who sleep at some height above the ground. He refuses to accept the explanation given by the theory that the mosquito is "a low flyer," because his own experience is opposed to this theory. Here we have a simple clashing of observation. The Italian observers—as well as myself—who have all been making a special study of mosquitoes for years, are quite convinced that mosquitoes often do prefer ground-floors to upper storeys. Apart from this, the question whether such immunity really exists is open to discussion. I fear we can hardly accept the authority—which Dr. Dauber quotes—of Kingsley's novel of "Westward Ho." If, as your correspondent adds, landing-parties in the navy "are instructed to make elevated platforms with boughs on which to sleep, and are supplied with axes for the purpose," this proves nothing. I have never known Government medical regulations cited as being medical authority of any value. Personally I should prefer the authority of "Westward Ho."

In British Guiana, Dr. Dauber says, "Young men freshly arrived from the temperate climates, although they would be bitten more voraciously than the older residents, yet were not very liable to malarial fever until they had resided about a year in the country." This is a most unfortunate argument, because, like the Irishman's pig, it goes in a precisely opposite direction to that which is intended. Obviously the longer a man has resided in a

mosquito country the greater the number of mosquito bites from which he has suffered from the commencement of his stay there, and the greater therefore his chances of having been bitten by an infected mosquito. If only one mosquito in a thousand is infected (which is quite possible), a man may well reside a year in a place before meeting his fate. On the other hand, if the poison lies in the soil, why are not these young men all infected the moment they land? Dr. Dauber thinks that "fresh arrivals bitten from head to foot and living amongst men constantly down with fever" should become infected at once; he again omits to note whether he refers to the bites of *Culex* or *Anopheles*.

A number of instances are given where malarial fever was supposed to be due to turning up "virgin soil." These are of the usual indefinite kind. Was the fever malarial fever (and not, for instance, ankylostomiasis—which is an earth-borne disease, and is frequently mistaken for malaria)? Were the cases original infections and not relapses due to chill and fatigue caused by the labour? Were *Anopheles* certainly absent? These questions must be answered before the evidence is worth a straw. It is no use quoting Mark Twain and describing public impressions at the time. Dr. Dauber adds that while the troops engaged in excavations at Hong-Kong suffered greatly from malaria the "Argyll and Sutherland Highlanders also stationed there at the same time, who were not engaged in the excavation works, did not suffer similarly"; and he continues with the remark that "It is hard to believe that the mosquitoes could make a differential diagnosis between the Engineers and the Highlanders." Certainly this would be hard to believe if the Engineers and the Highlanders lived intermixed in the same barracks and slept in the same rooms. Are we to understand that this was the case? If not, where is the point of the remark? Everyone who knows anything of the matter is aware that there may be crowds of *Anopheles* in one house or barrack and few in the next (as at the Wilberforce barracks in Sierra Leone), or none at all a few hundred yards away. Your correspondent seems to imagine that mosquitoes are a uniformly diffused entity like a gas. It is quite possible that the Engineers lived in sheds or houses infested with *Anopheles*, while the Highlanders did not; at least this point must be settled before the instance is of any value at all as evidence. Dr. Dauber's reference to the general paucity of mosquitoes at Hong-Kong is rather unfortunate in view of the recent find of *Anopheles* there by Mr. Ladds. His attempt to dispose of their breeding pools by quoting the words of an Engineer officer who says that no pools remain after heavy rain, is also scarcely what we call scientific evidence nowadays, and is moreover summarily discredited by the work of Mr. Ladds—to which I refer your correspondent. Then he quotes an officer of the Ashanti expedition of 1873-74 to the effect that in those parts "there is any amount of malarial fever but practically no mosquitoes." Really, this is the old old story. It was like the story I was told—and by a medical man too—that there are no mosquitoes in Sierra Leone! During the last few months I have heard the same absurd statement about every town on the West Coast of Africa, the fact being, of course, that many people never observe anything at all, not even a mosquito bite. Your correspondent next relates the case of a hospital ship, the *Simoon*, on which after a time malarial fever became endemic, infecting, for instance, the wounded returning from the expedition just mentioned. The *Simoon* was condemned and replaced by the *Victor Emmanuel* which remained healthy. "If mosquitoes were the means of conveying infection in the first vessel," exclaims Dr. Dauber, "why were they not also in the second?" Possibly for the simple reason that there were no mosquitoes, or at least no *Anopheles*, in the second vessel. It must surely be remembered that *Anopheles*, like many other insects, have their seasons. Moreover, the same case would tell equally against the idea that the malaria lay in the air of the locality in which the two vessels were stationed.

Next we hear the case of H.M.S. *Active*, from which a punitive expedition was sent up the Niger in a steamer. The expedition remained quite well until it returned to the *Active*, which then put to sea. Within a week after she had put to sea "nearly all of those who had taken part in the expedition were down with fever of a severe type." What point is there in this story? Dr. Dauber seems to forget that in malarial fever, as in other diseases, there is an incubation period—lasting up to three weeks. I suppose that the members of the expedition were infected before they returned to the *Active* and that the disease appeared in them some time afterwards—that is all. The case appears simple enough. Unless, indeed, the members of the expedition brought some freshly turned virgin soil with them I do not see that it applies to the question at issue. How explain it better on the supposition that malaria exists in the ground, for instance?

The disappearance of malarial fever in England affords your correspondent another text—since mosquitoes, even *Anopheles claviger*, remain in England (which is true) how is it that the fever has disappeared so entirely? Precisely, and the answer gives perhaps one of the most serious blows to the soil theory. It is very well to talk largely and vaguely of the effects of drainage of the soil in England, but let us inquire more particularly. Are we to suppose that every square yard of soil in England has been drained? I suppose that there are a *few* ill-drained fields and ditches still remaining even in England. If so, why have the parasites which by hypothesis live in such places gone so completely? Surely there must be a patch of soil here and there which still contains its hordes of malaria germs. Surely a chance labourer may now and then happen to dig in such spots of ground, and should therefore contract the disease. It will not do; if the germ ever lived in British soil it is most highly improbable that it could have vanished so rapidly and completely as it has vanished. On the other hand, the mosquito theory affords a simple explanation of the phenomenon. According to it both *Anopheles* and malaria cases must be in sufficient numbers for the former to have a reasonable chance of becoming infected from the latter. But what has happened? The fever cases have been consistently reduced with quinine, while simultaneously the *Anopheles* have been reduced by drainage. The chances are now thousands to one against an *Anopheles* ever biting a person suffering from malarial fever in England—more probably millions to one. But I will not anticipate some important researches which I hope will shortly be published on the subject.

Your correspondent does not think that the mosquito theory sufficiently explains the connexion of malaria with rainy seasons or rank vegetation. That is a mere matter of opinion. He says that though mosquitoes teem up the river Parana in South Africa—mosquitoes *probably* of all kinds—yet fever is little prevalent there. This is not definite enough: we must know for certain that *Anopheles* do not exist at the exact spot where malaria prevails before the evidence has any validity. He avers that an offshore wind can induce an outbreak of malarial fever in vessels lying 50 miles from land. The records of such cases would be interesting ones, and I hope that your correspondent will find the time to publish them. Until then we must be excused if we scarcely admit with Dr. Dauber that such instances "prove conclusively that the atmosphere has some intimate connexion with the disease." He adds that he finds it difficult to explain on the mosquito theory how "it is only the *land* breeze which does the mischief." Admitting the statement (which may, however, be doubted) I suppose it may be explained on the ground that the land breeze is more likely to carry the mosquitoes from the land to the ship than is a wind in the opposite direction. Lastly, he says that the paludal, miasmatic, and telluric conditions are still believed in in the British navy. I do not doubt it; they will doubtless be believed in by the British navy for the next hundred years.

I have now examined, I think, all of Dr. Dauber's instances and arguments and have done so at such length chiefly because similar views are continually being expressed by medical men in spite of all refutations. Such views appear to me to have a certain old-world flavour about them—smacking of the pleasant days when direct observation and experiment were not yet necessary in medical science, when we based our conclusions on obsolete text-books, hearsay evidence, and travellers' tales, and when a medical man could gain a reputation in tropical medicine on the strength of possessing a stuffed crocodile in his consulting-room. I do not mean to say that all such views are wrong, but certainly all of them are not right, and what I wish to impress is that they have little value as scientific evidence in the sense in which we now understand it. If the malarial miasma really exists its existence must be demonstrated not by citations of popular beliefs but by exact scientific work. Meantime our position is quite clear. Dr. Dauber blames us for inculcating the destruction of mosquitoes and so on without reference to precautions against the miasma. But this is quite logical. We are sure that *Anopheles* communicate the

disease and we therefore devise measures against them. We know nothing for certain about other modes of infection and we therefore refuse to advise precautions against them. We cannot accept popular beliefs as being in any way equivalent to scientific demonstrations.

As a matter of fact, your correspondent has quite overlooked (although he nearly touches it once) the train of argument which is most fatal to the miasma hypothesis—I mean the arguments based on comparative parasitology. We are now familiar with a very large number of animal parasites and we recognise that their development and life-history proceed in accordance with certain general laws. Those which, like the parasites of malaria, pass between alternate hosts, possess a complicated development which enables them to do so. But there their development ceases. They do not also possess properties or organs which enable them to live in half-a-dozen other media as well. The life-cycle of the parasite of malaria is already complete according to these biological laws, and we have no justification for supposing that it possesses other life-cycles fitting it to live in the soil, or in the marsh, or in the air. We may as well suppose the same thing of tapeworms or trichinæ. The idea that any parasitic organism breeds indefinitely, say in the soil of an uninhabited locality, ready to pounce out upon the first man who happens to dig there, is a zoological absurdity. Moreever, the method of inoculation which nature has discovered for the malaria parasite is so simple and yet efficacious that those who have studied the wonderful arrangements by which it is brought about are not disposed to look with much favour on the clumsy ideas of the miasma and the telluric emanation. I am, Sirs, yours faithfully,

Liverpool, July 1st, 1900. RONALD ROSS.

P.S.—Dr. Dauber's reference to the Parana river region, where mosquitoes "teem in their millions and billions" and yet malaria is so uncommon, seems more unfortunate than I suspected at first. I wrote on the subject to Mr. F. V. Theobald, of the British Museum, who is collecting the known information about mosquitoes, and have just received the reply which he was kind enough to send me. After mentioning the species of *Anopheles* found in that region, he adds: "This is all I can recall. It would thus seem that *Anopheles* are not common in those parts of South America—very different to what we find in the Malay Peninsula, West Coast of Africa, India, &c."

## "THE NATIONALISATION OF TRINITY COLLEGE, DUBLIN."

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of June 30th a correspondent over the signature "A.M., M.D., Dub. University" writes: "Although I am unable to discern that the columns of a medical journal are the proper arena for the discussion of the Irish Catholic University question I feel bound to contest your conclusion as set forth in an annotation in THE LANCET of June 23rd, p. 1815, that the proposal to nationalise Trinity College is 'as useless as it is impracticable.'" Now if your correspondent will look again at the annotation he refers to he will see it is entitled "Irish University Education"; that is, the paragraph deals with the question of Irish University education as a whole and not merely with that portion in which Roman Catholics are specially interested. Further, in the discussion of university questions whether they affect the whole or only a portion of the inhabitants of a country, your readers must admit that the interests of the medical faculties, which now constitute such large and important departments of all universities, demand most careful consideration; and where can questions affecting these medical departments be more appropriately discussed than in a medical journal of such great influence and with such a wide circulation as THE LANCET?

Your correspondent takes a very narrow view as to what is meant by the nationalisation of Trinity College, Dublin. He defines it "as the complete de-sectarianising of it"; and he thinks the whole question would be settled if some Government would "proceed to eradicate all traces of sectarianism from the University of Dublin. To effect this latter purpose it would be essential to transfer in its entirety the Divinity school of Trinity College to the outside custody of the Church of Ireland, with a grant to that Church equivalent to that now made to the sectarian education at Maynooth and elsewhere." No doubt, from a Trinity College point of view, this solution of the Irish University question would be an admirable one; that is, Trinity College would continue as it is with the exception that the Divinity school would be transferred to the care of the Church of Ireland and would receive a grant equal to that of Maynooth. In other words, Ireland would possess a new Divinity school for a minority of Irishmen endowed as largely as Maynooth which educates theologically the clergy who minister to the wants of three-fourths of the inhabitants of Ireland. The Divinity school, separated from Trinity College, would thus become one of the most richly endowed theological institutions in the world. Would the British tax-payer calmly submit to pay as much for the education of the clergy for a population of 600,830 members of the Church of Ireland as for 3,549,745 Roman Catholics? Or, to put it in another way, is the theological training of the clergy of 12·8 per cent. of the population of Ireland to cost as much as that of 75·4 per cent.?

But, Sirs, does your correspondent imagine that if Trinity College was desectarianised in the way he suggests the Irish University question would be at all settled? As everyone knows, it is a cardinal doctrine of the Roman Catholic Church that its members accept the teaching of their ecclesiastics as to what is dangerous to faith and morals. The removal of the Divinity school from Trinity College would still leave what your correspondent describes as a "thick Protestant atmosphere" in that place which the Catholic Church teaches is inimical to the faith and morals of her sons, and hence Trinity College would be as much as ever under the ban of that powerful religious organisation.

There is, however, another and most important factor which your correspondent entirely ignores and which will have to be considered in any proposed settlement of Irish university education. If Trinity College is nationalised, not merely in the limited sense of having its Divinity school removed, and becomes a secular institution, how will this change meet the existing state of affairs as it concerns various Colleges and educational centres in Ireland outside Trinity College, what will then be the position of the Queen's Colleges of Belfast, Cork, and Galway, of Magee College, Derry, and of Victoria College, Belfast? How are these great educational institutions to be dealt with in this national university? Are they simply to send their students to Trinity College, Dublin, and close up their halls, or are they to remain as at present, let their students go to Trinity College, Dublin, for examination, and have no share or voice on the governing senate of this new national university? Is the great medical school of Belfast, one of the largest in Ireland, situated in a rapidly increasing city whose population now exceeds that of Dublin, to be quietly absorbed and take a subordinate position in this new national university? Does your correspondent really imagine that in these days of decentralisation, with new universities such as the Victoria, Birmingham, the Welsh, and the London, the hands of the clock are to be put back, and in Ireland everything of an educational nature is to be controlled from Trinity College? Is that institution to be the only place of collegiate education for young Irishmen, and, if so, how are the institutions already existing, such as the Queen's Colleges, Magee College, and Victoria College to stand related to the one national university? Would Scotchmen submit to have one university for the whole of their country situated in Edinburgh? Has not England revolted against university centralisation in London?

If Trinity College is to be really and truly nationalised something more than its mere "de-sectarianisation" will have to be attempted. 1. A truly national university must be so constituted that, as your correspondent writes, its governing body, professors, fellows, and officials, as at present, are almost universally of one religious persuasion. 2. Irish Roman Catholics and the Presbyterians of Ulster must get a fair share in the governing senate, as well as in other matters pertaining to the administration of the new university. 3. Arrangements will have to be made for the due recognition and adequate representation on the new national university of the various colleges and educational institutions outside Trinity College in the provinces of Ireland. 4. A truly national university must meet the requirements and aspirations not of one sex alone, and hence all its degrees and honours must be open alike to women as to men. (Trinity College, in spite of frequent demands, has not advanced even this length, none of its degrees being open to women.)

Now, Sirs, I have attempted to lay down certain conditions which I think in fairness all will agree must be fulfilled if a university in Ireland is to be a truly national one. May I ask will the authorities of Trinity College allow such modifications of that old and venerated educational institution? And if they refused (as it is certain they would) would any of our political parties in the State for one moment attempt to force them to accept such radical changes in the arrangement and government of their College? As a consequence I am compelled to agree with your conclusion that "the proposal to nationalise Trinity College is therefore as useless as it is impracticable."

I am, Sirs, yours faithfully,

July 2nd, 1900. IRISH GRADUATE.

## "LYMPHATIC LEUKÆMIA."

*To the Editors of* THE LANCET.

SIRS,—I am much indebted to Mr. J. Charlton Briscoe for his courteous criticism of my case. The diagnosis was arrived at not solely from an examination of the blood, but from a careful consideration of all the symptoms. The differential-diagnosis between acute Bright's disease, tuberculous peritonitis, ulcerative endocarditis, and other possible causes was carefully discussed. There was no enlargement of the lymphatic glands but the dulness in the left hypochondriac and adjacent regions was probably splenic in origin. Hyperplasia of the lymphatic glands is by no means a constant symptom in lymphocythæmia. Muir states that it may be slight or even absent and Osler expressly mentions that in only four out of his series of 26 cases were the glands enlarged. Enlargement of the glands is much more common in lymphadenoma, a disease of an essentially different character. Leucocytosis is usually met with in the lymphatic form of leucocythæmia, but the number of leucocytes fluctuates greatly from time to time and cases are recorded in which it fell to normal. Although in my case the leucocytes were not absolutely in excess they were relatively so compared with the erythrocytes. The ratio before treatment was 1 in 493, whilst after treatment it fell to 1 in 669. I quite admit that in lymphatic leukæmia a prominent feature is the increase of uninucleated leucocytes, lymphocytes, and slightly larger corpuscles such as are normally present in the blood. In my case the report stated that of the leucocytes 43 per cent. were small cells having a single pale nucleus, but so much doubt evidently existed as to their real nature that the information was of no practical value as an aid to diagnosis. With a patient in a critical condition one cannot afford to suspend treatment whilst experts are discussing the value of methylene blue as a staining agent or considering whether certain appearances are or are not "artefacts." In this case there was some pathological condition of the hæmatopoietic tissues, and whether we choose to label it leukæmia or call it by some similar and perhaps equally indefinite name is a matter of little importance. The essential points are that there was a considerable effusion of fluid into the abdomen, that the patient was sinking rapidly, and that she was restored to safety by the performance by Mr. Walter Spencer of an operation for establishing a collateral circulation.

I am, Sirs, yours faithfully,

Welbeck-street, W., July 2nd, 1900. WILLIAM MURRELL.

*To the Editors of* THE LANCET.

SIRS,—As Mr. Briscoe's letter in THE LANCET of June 30th with regard to Dr. Murrell's case of "lymphocythæmia" directly concerns myself, I hope you will spare me a short space to reply to that portion which refers to the examination of the blood; any questions as to the clinical diagnosis pass beyond my domain. I think that if Mr. Briscoe will refer to the wording of my reports (and these Dr. Murrell has given *in extenso* and has placed in inverted commas), he will recognise that I was in considerable doubt as to the true nature of the cells which he thinks were possibly lymphocytes. Since reading his letter I have again examined the specimen upon which my first report was founded and find no reason to alter my opinion. I am sure that he will agree that the lymphocyte is the least variable of the leucocytes, and that anyone at all acquainted with blood examinations should make the fewest mistakes when they are the cells under consideration. If I may be excused a little pride, may I express my satisfaction that the arrangements I have made in our clinical laboratory are so soon to bear fruit that will extend beyond our walls? For by our arrangements it is possible to exclude the personal element from a pathological diagnosis entirely. If Mr. Briscoe will favour me with a call at the laboratory he will not only be able to form his own opinion upon the cells in the original blood-film, but also will aid in bringing about that agreement as to the nomenclature of the different varieties of colourless cells found in the blood which is so much needed.

I am, Sirs, yours faithfully,

W. S. LAZARUS-BARLOW.

Clinical Laboratory, Westminster Hospital, July 2nd, 1900.

## "THE POSITION OF THE GENERAL MEDICAL COUNCIL WITH RESPECT TO THE MIDWIVES BILL."

*To the Editors of* THE LANCET.

SIRS,—With reference to the letter of the President of the General Medical Council which appears in THE LANCET of June 30th permit me to inform your readers that the promoters of the Midwives Bill declined to place upon the order paper the amendment to which he calls your attention, or any other amendment which might lay them open to a charge of breach of faith with the General Medical Council.

I am, Sirs, yours faithfully,

F. R. HUMPHREYS,
Honorary Secretary of the Midwives Bill Committee.

Buckingham-street, Strand, W.C., July nd, 1900.

## THE OPERATIVE TREATMENT OF PULMONARY TUBERCULOSIS.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of June 23rd Mr. Foster Palmer, urging "early operation in cases of undoubted tubercle of the lung," proclaims that medical treatment of this disease is "vague, empirical, and uncertain," and that surgery alone "offers a really good prospect of success." He argues that when any other organ of the human body is attacked by the tubercle bacillus extirpation is the usual and successful remedy; and straightway he apparently concludes that when the lung becomes tuberculous a similar result must follow a similar operation. It is to be hoped that the future surgery of the lungs will be placed on a far more satisfactory pathological basis. For is it not certain that in almost all cases of adult pulmonary tuberculosis the affection of the lung is secondary to tuberculosis of some other tissue, most frequently to that of the bronchial lymphatic glands? And consequently will not surgical operations on the lung, such as Mr. Palmer describes, prove as useless as if he were to remove the tuberculous index-finger of a patient already suffering from tuberculosis of the wrist-joint?

I am, Sirs, yours faithfully,

Switzerland, June 25th, 1900. CHARLES S. MYERS.

## "THE CAUSE OF CARIES OF THE TEETH."

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of June 30th there appeared an annotation on The Cause of Caries of the Teeth in which my theory is characterised as "highly improbable." Yet as far as I am aware there has been *no* case recorded either of rapid and extensive caries of the teeth or of complete freedom from the disease which does not lend support to the theory. The writer says: "That the structure of the tooth plays a most important part in the resistance to caries is within the knowledge of a dental practitioner with even a small experience." This current assumption is repudiated by some of our most acute observers and experienced practitioners (Dr. Black, Mr. Leon Williams, and others). At one time I, too, shared this prevalent belief. When a tooth is soft and non-resistant to an instrument at a part which does not appear to be attacked by caries this condition is usually brought about in the following way. In the mannitic fermentation of sugar the mannite or gum formed clings to the enamel and together with the acids generated in the fermentation gives rise to a general decalcification of the enamel which is not pigmented nor sharply localised and so escapes observation. In the crevices of such teeth

amylaceous and other food particles are apt to lodge. In these situations the caries being further advanced, definitely located, and associated with pigmentation, is easily and distinctly observable.

Perhaps the above explanation may help my critic to reconsider his statement that "the true cause of caries has yet to be discovered and is not quite so simple as Dr. Wallace would lead us to believe." Why not? When the true cause of anything is discovered it generally appears simple. I think, too, it is hardly correct to say that I have "advanced an *ingenious* theory" which is admittedly "so simple." The seriousness and importance of the subject demand that the theory should be put to the test of direct observation rather than be subjected to destructive criticism founded merely on current beliefs.

My critic thinks that "there is something, so far not recognised or understood, which plays a most important part in the liability of teeth to be attacked by caries." If he will only test the theory (as any medical man or dentist can easily do) in a few typical cases of extensive and rapid caries and in a few cases of complete or almost complete freedom from it, I think he will recognise and understand the something which plays that most important part.

I am, Sirs, yours faithfully,

Kingston-on-Thames, July 2nd, 1900. J. SIM WALLACE.

## CHELTINE FOODS.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of June 30th you published a letter from which it appears that the makers of these foods now claim that the starch contained in them has been so modified that it is not convertible into diabetic sugar during digestion. Will you permit me to point out that by the action of the amylolytic enzymes of the digestive secretions the poly-saccharids—starch and the dextrins—are not converted into diabetic sugar or dextrose, but into the di-saccharid maltose; so that the claim put forward for the Cheltine foods might equally be made for any amylaceous food. Developing the makers' thesis a stage further one would be led to conclude, in opposition to all experience, that starch is a suitable food for diabetic patients. I am, Sirs, your faithfully,

Cambridge, July 4th, 1900. W. E. DIXON.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Monsoon.—The Unparalleled Extent of the Famine.—Diminished Plague Figures.—The Extermination of Rats by Disease.—Calcium Chloride in Plague Inoculation.—The Standardisation of Haffkine's Prophylactic.—Enteric Fever in the British Army in India.—Rabies.*

THE monsoon has reached India and promises a normal amount of rainfall. The conditions are favourable in the west as well as in the east, and anxiety as to the prospects in the famine districts has thus been immensely relieved. Anything like immediate improvement, however, in the numbers under famine relief is hardly to be expected. At the present time there are nearly 6,000,000 persons being aided by charity and the areas affected in the South Punjab, East Sind, Rajputana, Central India, Berar, the Central Provinces, Deccan, Bombay coast districts, Kathiawar, and Gujerat, cover between 600,000 and 700,000 square miles.

The famine of 1876–78 surpassed every previous one in intensity, but the present one is far worse both in severity and extent. The drought of 1899 was unique; not only has the recent drought extended over a wider area, but the tracts affected have been more completely dried up.

With the marked diminution in the plague mortality all interest in and anxiety about it seem to have subsided. For the week ending June 9th only 417 deaths were recorded for the whole of India. Of these Bombay city returned 131 (this is probably much under the correct figures), Karachi 12, Bombay Presidency 57, Calcutta 138, Bengal Presidency 54, and Aden 8. Bombay city continues to return a very high death-rate. It is said that illness of every description abounds, but allowing for a certain amount of cholera, small-pox, and unusual fatality in other diseases the death-rate of over 70 per 1000 and the excess of 547 in the total mortality are too high, and can only be explained by a continuance of the plague epidemic. I am sorry to say that the number of weekly inoculations has much decreased. The heightened birth-rate suggests that the women have not according to custom left the city for their native country. This is probably due to the famine.

Reports from the populous districts in and around Sylhet show that blackwater fever has been assuming the proportions almost of an epidemic. Although it is not so rapid in its fatal effects as plague, very few cases are said to recover. Treatment seems to be of little avail.

The extermination of rats is a difficult work in India owing to the opposition of the natives, so that the experiments recently conducted on the European continent are of especial interest. The object aimed at was the introduction into the rat community of a fatal form of disease which was at the same time harmless to human beings. This has apparently been very successfully accomplished. Into a Paris sewer were introduced 200 healthy rats, and pieces of bread impregnated with the virus of a disease which had previously been proved very fatal to rats were scattered about. Other food was also supplied. In eight days the epidemic broke out and dead bodies were found in considerable numbers. On the twenty-eighth day only eight out of the 200 rats remained alive. The experiment was repeated in Hamburg, Copenhagen, and elsewhere with equally good results. It was found also that even if the poisoned food was laid in open places, such as grain warehouses, either a disappearance of the rats occurred or a great diminution in their number took place. In view of the probable spread of plague by rats it may almost be hoped that this new epidemic will spread all through the rat population in every part of the world. It is by no means certain, however, that rats are the chief means of the dissemination of this disease.

An interesting report on the Haffkine prophylactic has been submitted by Captain Stevenson, I.M.S. Amongst other points he refers to the effect of calcium chloride on the febrile reaction and shows that given both before and after the inoculations it has a good effect. The best results were obtained when the calcium chloride was given a few days before the inoculation as well as after it. Yersin's serum was tried at Mauritius, but the reports were unfavourable.

It is satisfactory to learn that attempts are now being made in the Plague Research Laboratory, Bombay, to standardise Haffkine's prophylactic. Improvements have been effected in the manufacture of the fluid, and since occupying the new premises at Parel no less than 530 brews, or 160,000 doses, have been tested and all were found to be sterile.

The increasing prevalence of enteric fever in India as far as the British army is concerned is shown by the following table:—

| Year. | Admissions per 1000 strength. | Year. | Admissions per 1000 strength. |
|---|---|---|---|
| 1890 | 18·5 | 1895 | 26·3 |
| 1891 | 20·4 | 1896 | 25·5 |
| 1892 | 22·1 | 1897 | 32·4 |
| 1893 | 30·1 | 1898 | 36·9 |
| 1894 | 20·9 | | |

In spite of every attention to the water-supply and sanitation in the cantonments enteric fever has largely increased. The case death-rate is still very high also, being 24 per cent. It is obvious that the water-supply is not the main or the most important vehicle for the infection. In some places the water is purified, in others it is left untouched, and at some stations there was more fever after purification than before. Boiled water is tasteless and not always cool, and Tommy Atkins will not drink it. The immediate question is not why enteric fever should be prevalent, but why its occurrence has so greatly increased during the past few years. The admission rate for officers in 1898 was no less than 40 per 1000, as against 34 per 1000 in the previous year. This rate is higher than for non-commissioned officers and men, and it shows that the theory of the men contracting enteric fever in the bazaars requires considerable modification.

As the Pasteur Institute at Kasauli is not yet in working order it has been found necessary to send four more soldiers and a child to the Pasteur Institute at Paris.

June 16th.

# THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

*Russian Temperance Reform and the Pavilion of the State Monopoly of Alcohol.*

AT this moment, when so many international congresses are meeting in Paris to discuss various methods and phases of social reform, there is one exhibit that specially commends itself to those who seek to promote the physical and moral wellbeing of the masses. Throughout the northern half of Europe the prevalence of intemperance is generally considered one of the greatest obstacles to social reform. So great indeed is this evil that it has led to what many would qualify as an exaggerated reaction; one which, for the sake of abolishing that which is unreasonable would also prohibit that which is reasonable, and thus the intemperance of over-indulgence is met by an intemperate desire to enforce total abstinence. But if this be the experience of such countries as Great Britain and the United States of America what must be the state of such a country as Russia? There the vast majority of the population is composed of a simple-minded, good-natured, but totally ignorant peasantry. In their misdt, like a swarm of vampires, there were innumerable dramshop keepers where alcohol insufficiently rectified and of the coarsest description was served out to poor people who had not sufficient knowledge to know that they were drinking what was little better than rank poison. The diseases due to alcoholism were, therefore, widespread, entailing the loss of moral self-control. Clothes, furniture, homesteads, future harvests, implements and cattle, anything and everything that the dram-seller consented to accept as a sufficient pledge was given or signed over for the sake of alcohol. The people were bartering themselves away into a condition of servitude, indeed of slavery, to the dram-seller. Such was the state of ruin induced by alcohol that there were many places where the taxes remained unpaid and no amount of severity on the part of the tax-collectors could extract from the peasantry what they no longer possessed. This financial ruin, of course, also entailed physical and moral degradation. Fortunately the Russian Government, as an autocracy, was better able to deal with the problem than a country where the Government depends on electors who are in a large measure controlled or influenced by public-house keepers, brewers, and distillers. The Russian Government also, and very wisely, deemed that it was its duty to deal with things as they are and not according to the conceptions of some as yet very distant ideal. It had not to decide whether, in the abstract, total abstinence from alcohol was best for the human race, but with the very obvious fact that there are hardly any total abstainers in Russia. Therefore, as people will drink, the practical thing to do is to see that what they drink shall be as free as possible from injurious ingredients. For this purpose a system of inspectorship would have been totally inadequate. The only solution was to create a State monopoly in alcohol. Of course, a great deal has been said against State monopolies, and economists, especially of the older or Manchester school, are loud in their advocacy of the advantages of competition. The problem therefore consisted in effecting a compromise, of retaining some of the advantages of competition in combination with the advantages of a State monopoly. It is the results of this experiment carried out on a gigantic scale which can be studied at the Exhibition in the Pavilion of the Russian Régie of Alcohol situated close to and on the western side of the Eiffel Tower.

M. Gennadi Kartzoff, director of this Pavilion, very courteously placed himself at my disposal and lengthily explained every detail. Indeed, he also remarked that so much had been written in England against Russia that he was especially gratified to find there were English journalists who were willing to study what efforts at reform had been made in his country. It was after the famine of 1891 that the Emperor Alexander III. felt that it was absolutely necessary to attempt a radical reform and in 1894 it was decided to establish a monopoly of alcohol as an experiment. The provinces of Perm, Oufa, Orenburg, and Samara were selected for this purpose. The success was of so decisive a character that the monopoly has been extended to 25 other provinces in the south, south-west, north-west, and in the kingdom of Poland. Perhaps the most remarkable and original feature of the scheme is that private distilleries are not abolished. The State does not monopolise the manufacture of alcohol, it only monopolises the sale of alcohol. Formerly the distiller dealt directly with the dramshop keepers. He had to send out commercial travellers, there were occasional bad debts, and it was difficult to foresee how much alcohol would be sold; in a word, he had to face all the risks common to such undertakings. Now, on the contrary, the Government informs the distiller how much alcohol will be required during the forthcoming year. The distiller is certain to be paid for the same; he has not to deal with a multitude of more or less doubtful customers and he escapes from the risk of producing too much or too little. On the other hand, he still competes with other distillers so as to secure large orders from the one customer, the State. Most of the alcohol bought by the State is the raw unrectified product of distillation. A very ingenious sealed meter is provided by the State for the use of distillers. A large float in the cylinder which receives the liquid indicates and registers its alcoholic strength. From this cylinder the alcohol flows into a drum which revolves and empties itself when weighed down by the filling of one of its partitions. Thus quantity and strength are automatically registered. The alcohol is then conveyed from the private distillery to the State depôt, where it is analysed by the Savalle test, with sulphuric acid for amylic alcohol and with fuchsinosulphuric for aldehydes or with aniline for furfurol and with permanganate of potassium to determine its degree of oxidation. The whole of this process is shown at the Pavilion which, on a reduced scale, is the exact reproduction of a Russian State depôt for receiving, rectifying, and for the sale of, alcohol. The water, also, used for diluting the alcohol, is analysed, and according to the result of this analysis is treated chemically or distilled so that the water shall be uniform in its composition and purity. In all cases the water is absolutely sterilised.

A great point is made of the fact that whatever may be done with the alcohol it is never touched by the human hand and one source of contamination is thus done away with. The pipes and the soldering of the pipes that serve to convey the alcohol from vat to vat or from filter to filter are exhibited, and the attention of the visitor is drawn to this important consideration. By a syphon arrangement and an air-pump the alcohol is raised from the ground floor to the second floor, from thence by gravitation it can flow through the filters, &c. There is a special apparatus with an electric motor to ensure the satisfactory mixing of the alcohol with water, and it is then kept in a reservoir till the time comes for transforming it into brandy. The brandy is then raised into a cylinder where pressure is brought to bear so that it can pass first through four charcoal filters. Then so as to remove any particles of charcoal it is passed through two sand filters. As this process causes some slight loss of alcoholic strength the liquid, now perfectly clear, is collected in another vat where it is brought up to its normal strength, generally 40 degrees. All this is done mechanically, and so also is the bottling which now ensues. The dirty bottles are placed on a wheel the lower portion of which is submerged in a vat of water. The weight of the bottles as they are placed on one side of this wheel causes it to revolve, bringing up on the opposite side of the wheel the bottles that have been some time in the water. With the aid of a brush the labels are then easily removed. The bottle is then stood neck downwards over an upright pipe. By pushing a handle at the side of the table in one direction water is squirted inside the bottle; by pushing the handle in the opposite direction the water and sand are violently discharged. If this does not suffice the bottle can be affixed to a revolving brush which removes any hard substance adhering inside. Then there is a table with a little measured reservoir above. Eight rubber tubes are introduced in the necks of eight bottles. On turning a handle to the right the four bottles on that side receive the exact amount of brandy they should contain, and while the handle is turned to the left to fill the bottles on that side the first four are removed and empty ones are put in their place. The bottle is then placed under the corking machine. By pressing a lever, not only is the cork forced into the bottle, but a little piece of vegetable parchment is brought under the cork, which it surrounds and covers, preventing any contact between the cork and the alcohol. Thus the cork does not decompose in the bottle and cannot spoil the brandy. This is also important from an antiseptic point of view, as it is difficult to guarantee that the corks are aseptic. Dr.

Roux of the Pasteur Institute was much impressed by this contrivance and said it was the best thing of the sort he had seen. In the corking of the bottles, as in every other detail, everything is, as already stated, done by machinery, the alcohol is never in contact with anything that has been touched by the hands of the workers.

Finally, there is an exact reproduction of a Russian depôt for the retail sale of brandy, or *vodki* as it is called. It consists of a counter well protected with strong wire so that no one can reach over towards the bottles which are on shelves behind. In front there is only a little standing room for the customers, there are no glasses, and no one is allowed to drink on the premises. The attendants are employed by the Government, they receive fixed salaries, they are in no wise interested in pushing the sale, and they are forbidden to give credit. One of the great objects was to abolish the village taverns or dramshops which have been the ruin of so many peasants. On the other hand, the utility of the tavern as a place of social intercourse could not be denied, consequently out of the profits made by the monopoly of the sale of alcohol no less than 826,000 subsidies, amounting to 1,500,000 roubles, were granted to temperance committees in 1897. The mission of these committees is to create establishments where all the advantages of social intercourse can be enjoyed without the necessity of drinking alcohol. Therefore they establish cheap restaurants, reading-rooms, libraries, and halls for popular lectures, concerts, &c., and this they are now able to do out of the profits from the sale of alcoholic liquors. But though the low-class taprooms or public-houses have been abolished still inns and restaurants are necessary. Therefore the retailing of alcohol to be drunk on the premises is sanctioned at railway stations, in hotels, high-road inns, and such places, but this is done in such a manner that innkeepers have no interest in pushing the sale of alcohol. They only receive a commission of 10 per cent. on the *vodki* they sell. If a higher commission is given it is because they have a long way to go to the nearest State depôt. But it will be said that the innkeepers could refill the bottles with some spurious alcohol brought from an illicit distillery. To meet this, the sale of *vodki* on draught is absolutely prohibited. Every purchaser must have an entire bottle, so bottles that only hold enough for one drink are provided. These contain six centilitres of *vodki*, and the retail price in Russia of these bottles is equal to about seven farthings of English money. On the bottle a label indicates the quantity and the alcoholic strength of the *vodki*. The cork is sealed with the Imperial arms. The price at which it is to be retailed is also stated so that the innkeepers cannot in any way increase the profit he is to make. Apart also from these printed statements the colour of the wax indicates the strength and value of the contents of the bottle. Deception is not practicable and if it were practicable the penalty is 15 years in Siberia. The State takes back the empty bottles if they retain their labels and the number of the factory. The State alone has the right to fill the bottles and the Imperial seal is the guarantee of the purity of their contents. As the profit on the sale of alcohol is only about 10 per cent. no one is particularly interested in pushing the trade, and therefore there is no attempt to increase the demand. Also it is strictly a ready-money trade, so that drunkards cannot get into debt with the publican. Nevertheless, but for the small bottles some form of fraud might still be possible. If a publican can draw the cork from a bottle and pour out only a part of its contents there is no knowing with what he may refill the bottle. The Russian innkeeper, however, must serve an entire bottle to his customer; the consumer alone has the right to break the seal, and to serve a bottle with a broken seal is a penal offence. This rule can be easily observed, as there are bottles small enough to contain sufficient for one drink only.

The results of this great reform have been beneficent, financially and morally. The State sells a litre of alcohol for 3 francs 92 centimes. The cost of production, including excise duty, indemnities to towns which by the abolishing of the licensing system have lost a source of income, &c., amounts to 3·26 centimes. No indemnity whatsoever was paid to the dramshop keepers. Many of them were very rich and in any case had done harm enough to debar themselves from any claim for compensation. In 1897 the 66 centimes of net profit per litre of alcohol brought in a revenue of 47,000,000 francs. But what is even more advantageous, districts that were ten years in arrears in the payment of direct taxation are now clear and are paying regularly all their taxes. The Emperor Alexander III. in discussing this scheme had said that any reduction of indirect revenue due to the taxing of alcohol would be compensated by an increase in direct taxation arising from the greater prosperity of the people. This anticipation has been realised. Drunkenness has been very greatly reduced, there are less crime and debauchery, and there is a consequent distinct improvement in public health. The deposits made in the savings-banks have increased in a marked manner, and this improvement would have been even more emphatic but for the very serious famines that have prevailed in different parts of Russia.

To sum up, the position stands thus. The retailer makes less profit out of the sale of alcohol than he does out of anything else which he may have to sell; therefore he is not at all desirous to induce his customers to drink, he would much prefer to sell them food, coffee, or tea. Then as the alcohol is absolutely pure it is not so injurious to the consumer. As all the low-class dramshops are abolished the peasantry are no longer induced to run into debt for the sake of drink; but, on the other hand, the temperance committees receive funds from the State which enable them to provide rational enjoyment for the peasantry. The results are a notable decrease in drunkenness and crime and a corresponding increase in public revenue by the more regular payment of direct taxation and in private prosperity, as indicated by the increase of deposits made in the savings-banks.

Now, without going all the way to Russia to study the details, technical processes, administrative complications, &c., of this great and radical reform, the entire subject can be thoroughly investigated here in Paris and within a few yards of the Eiffel Tower. This, indeed, is a unique opportunity. All those who devote so much time to studying and discussing the great question of temperance reform, the prevention of the diseases due to alcoholism, &c., have now within easy reach a practical, complete, technical, and general example and illustration of one of the boldest, the most far-reaching and systematic efforts that any modern European Government has ever ventured to make when seeking to grapple with this terrible and menacing problem.

Paris, July 1st.

## PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague at Sydney for the week ending May 19th are as follows: remaining at the beginning of the week, 86; admitted, 23; discharged, 0; died, nine; remaining at the end of the week, 100. The totals up to the end of the week are as follows: cases, 239; deaths, 82; recovered, 57; "contacts," 1351; "contacts" remaining, 140; cases among "contacts," seven.

The second series of inoculations, begun last week, proceeds slowly though steadily. An average number for each of the past nine days is 200. No excitement and comparatively little interest in it are manifested. Two factors, however, have to be considered besides the great abatement in the panic with which the public were stricken at the date of the former inoculations. The present series has been carefully organised and steps have been taken to secure inoculation of the remaining workers in, and inhabitants of, the first infected area, a considerable proportion of whom were inoculated on the earlier occasion. Candidates now have to apply for tickets, which are dated for some day later than that of application, and they must present themselves on that day or procure a fresh ticket. Business firms may make application for their employés by letter and receive by post tickets dated for different days, so as not unduly to interrupt business. Government departments may follow the same course or, if they choose to provide themselves with a medical man, may be supplied with enough prophylactic to inoculate all of the staff who desire it. Tickets are allocated to days in limited numbers; half of the number are distributed by post as just mentioned, the other half are reserved for applicants in person. Tickets are distributed to persons and by post every morning; inoculations are performed every afternoon. Two afternoons a week are reserved for women and children. The city townhall furnishes a place; the staff consists of two medical men, two preparators (medical students), and two clerks.

The number of persons in whom plague has developed after inoculation has been 11. One was attacked on the day of inoculation, one each on the first, second, and third days therefrom, three on the fourth day, and one each on the fifth, seventh, fourteenth, and thirty-second days. All of these recovered, and most of them had conspicuously light attacks. One other patient who died said that he had been inoculated, but his name did not appear in the lists; his family knew nothing of it, but a fellow clerk said that he thought he had been inoculated, because though he never told him so directly, he had expressed an intention of submitting himself, did take leave one afternoon, and for two or three days thereafter complained of his arm. The informant seemed certain that he had been inoculated. No reason for this secrecy coming to light, it seemed possible that he gave a false name to the registering clerk.

Of the total deaths mentioned above 27 have occurred before removal to isolation; eight occurred at one or other of the general hospitals where their cases were identified, though they had either already died before official inspection or were too ill for removal; and 19 died at their residences. Sometimes the cause of death in these cases was uncertified and the cases were brought to notice by a coroner; sometimes the patient was seen alive by a member of the medical staff but died soon afterwards; sometimes very acute cases were reported by medical men but died before they could be examined; and occasionally the unexpected occurrence of death first gave the medical attendant reason to think of plague and caused him to refer the case to the medical staff. In five of the 27 cases the date of attack could not be ascertained; the remainder died on days after attack from the first to the eighth as follows: 1, 3, 7, 3, 2, 2, 2, 2. In all cases of predecease the diagnosis was made by post-mortem and bacteriological examination.

Chinese have now been attacked in eight instances; seven of the patients have died. The dates of discovery were April 9th, 16th, 23rd, and 26th, and May 8th, 9th, 15th, and 17th. Possibly the latter dates offer a hint of tendency in the disease to take hold of these Asiatics. At all events, special search-parties have been organised by the Department of Public Health and next week they will go through the three small Chinese quarters which exist in Sydney. In all the cases there is strong reason to believe that the patient had been removed from some better or more populous residence to the unimportant place in which he was found. In one such case the sufferer was found in a room attached to a mission chapel where no one lived; another patient asserted that he had been tramping over the country in search of work and had arrived in Sydney by train from a remote station the day he fell ill and was discovered—a story which his appearance belied and which was easily shown to be false by the police and by the guards of the only trains by which he could have travelled. Especial care was taken to procure substantial evidence of the facts, although it is apparent that a tramp could not have acquired plague in the bush under existing conditions.

Two litres of Yersin-Roux serum arrived in bottles holding 20 cubic centimetres each and the use of it was commenced at the end of last week. The results could not be mentioned in sufficient detail in this communication, were they complete; they seem, however, to bid fair to be satisfactory, and it may be noted that all patients thus far treated have a pulse of much greater strength than is usual at the corresponding date of illness in untreated cases be they mild or severe. From this it may be inferred that the serum is an efficient antitoxin at least.

May 21st.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

### *University of Birmingham.*

HER MAJESTY in pursuance of the provisions of the Charter of the new university has been pleased to appoint Oliver J. Lodge, D.Sc., LL.D., F.R.S., Professor of Experimental Physics in the University College, Liverpool, to be Principal of the University of Birmingham. This appointment has given general satisfaction to all interested in the university. Dr. Lodge's reputation is a wide and substantial one. His work on electricity and light and his researches in the field of experimental physics and allied subjects have made his name familiar and popular as a writer and teacher of the first order. Having just completed his forty-ninth year Dr. Lodge may look forward to his reign in this new sphere with hopefulness and confidence, while his colleagues will rest assured that they will have the association of an eminent and active director in all questions affecting the progress and distinction of the University. In illustration of the activity of the students at present engaged at Mason College a meeting was held on June 12th for the purpose of forming a University company of Volunteers. The Dean of the Medical Faculty—Dr. B. C. A. Windle—presided and much enthusiasm was exhibited. The object is to get a sufficient number of drills completed before August 6th and then to appear as a complete company on Salisbury Plain.

### *A New Asylum.*

An inquiry under the auspices of the Local Government Board was held on June 21st for the purpose of borrowing £249,250 for the building a new asylum at Hollymoor. The Town Clerk explained the objects of the inquiry and gave details of the necessity and the approximate cost. He stated that the authorised accommodation for patients at the existing asylums of Winson Green, and at Rubery Hill was for 1429, but as the members had been for some time increasing this was found to be insufficient. Thus the number of patients in the two asylums in 1891 was 1205, in 1900, 1528. The increase was stated to be normal in proportion to the increase of population, amounting to about 40 per annum. To meet the increase temporary provisions were made in 1897 by a lease of Sandwell Hall at a rental of £300 per annum, giving accommodation for 150 male patients. Another building had also been provided for a time to meet the difficulties of the increase which would be for female patients. It was pointed out that all these additional premises were held on limited leases only and that the necessity of permanent buildings was obvious from the statistics adduced. The expense will be a heavy tax upon the ratepayers, for though the Government, recognising that lunacy is a national and not a local misfortune, contribute towards the maintenance of the inmates the cost of the new buildings must be borne by local taxation; fortunately this extends over a series of years.

### *Inebriate Homes.*

Corngreaves Hall, near Birmingham, was the scene of an animated gathering on June 13th, when it was formally opened as an inebriate home for women. The building has been acquired by the Worcester Diocesan Church of England Temperance Society. It is intended for the reception of inebriate women of any denomination, the age-limit being from 20 to 45 years. No person will be admitted for less than 12 months and patients are strongly advised to enter for two years. Accommodation is provided for 30 patients and arrangements are made for three grades, payment being accordingly. Employment and recreation will be duly provided. Under the present able administration the results are looked forward to with cheerfulness and hope. The board has appointed two representatives from Birmingham on the management, taken from the justices of the city roll.

### *Hospital Saturday.*

The sum paid into the bank for this year's contributions amounts to £16,111, as compared with £16,521 last year. This falls short of the £20,000 asked for, but under existing circumstances it must be regarded as a valuable contribution.

July 3rd.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

### *A New Hospital in Liverpool for the Treatment of Tropical Diseases.*

IT is proposed to erect a new hospital in Liverpool for the special treatment of tropical diseases, as the accommodation provided in the Thompson-Yates Ward at the Royal Southern Hospital has become too limited for the number of cases applying for treatment. At the banquet at the Adelphi

Hotel on June 25th in honour of Dr. H. E. Durham and Dr. Walter Myers, on the eve of their departure for the Amazon, subscriptions amounting to about £2500 were announced towards that object. It was certainly a happy thought which suggested to Mr. Alfred L. Jones, who presided, the association of the name of Miss Mary Kingsley, the intrepid traveller and friend of the negro, with the new hospital. No more fitting memorial to perpetuate that lady's name can be conceived than that of connecting her name with an undertaking which is intended to benefit the lands she loved so well.

*The Thompson-Yates Laboratory Reports.*

The first issue of the Thompson-Yates' Laboratory Reports, vols. i. and ii., 1900, has just appeared from the University Press of Liverpool. The reports consist of two large quarto volumes, handsomely designed and furnished with numerous coloured plates and illustrations. The first volume, which consists of 238 pages, contains the account of the opening of the laboratories in October, 1898, by Lord Lister, P.R.S., who was accompanied on that occasion by Professor Virchow and a distinguished gathering of scientific and representative men. An address delivered before the medical students of University College, Liverpool, by the donor of the laboratories, the Rev. S. A. Thompson-Yates, will also be found in the first volume. In the second volume, which contains 265 pages, reports are given of the various departments, including the report of the first malarial expedition to West Africa by Major R. Ross, I.M.S., Dr. H. E. Annett, and Mr. E. E. Austen, which clearly indicate the many ways in which the University teaching in the schools of physiology and pathology is directly applicable to the needs of the community, including the wide sphere of our colonies, both as regards the prevention and cure of disease at home and abroad and the advancement of commerce. They are intended to promote learning and record research in the various branches of physiology and pathology, and thus to carry out the wishes of the founders of the two schools. They also contain reprints from various authors and medical journals. The editors are Professor Rubert Boyce and Professor C. S. Sherrington, both of University College, Liverpool, assisted by junior members of the staff of the schools of pathology and physiology.

July 3rd.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Chair of Systematic Medicine in the University of Glasgow.*

THE Chair of Systematic Medicine in the University of Glasgow, vacant by the resignation of Sir William Gairdner, has been filled by Her Majesty the Queen having been pleased to appoint, upon the recommendation of the Secretary for Scotland, Professor McCall Anderson, the Professor of Clinical Medicine in the University. Dr. McCall Anderson is M.D. of the University, and F.F.P.S. of Glasgow. He is physician to the Glasgow Western Infirmary and consulting physician to sundry other Glasgow medical institutions. He is the author of various medical works, chiefly dealing with diseases of the skin.

*The Forthcoming Health Congress in Aberdeen.*

The Public Health Congress, at which 716 delegates have now promised to be present, to be held at Aberdeen under the auspices of the Royal Institute of Public Health, will extend from Thursday, August 2nd, to Tuesday, August 7th. It is intended to open the proceedings with an address by the President, the Earl of Aberdeen, in the Mitchell Hall, Marischal College, and it is expected that the delegates will be entertained by the corporation at a reception and a luncheon. Saturday will be devoted to excursions to Balmoral, &c. On Sunday the Congress as a body will attend service in the West Parish Church to be conducted by Principal Marshall Lang, Aberdeen University. Three special papers will be read to all the members—viz., one on "Disinfection" by Professor Delépine of Owens College, Manchester; one on "Sewage" by Professor Percy Frankland, F.R.S., Birmingham; and one on "The Origin and Treatment of Malarial Fever," by Dr. Patrick Manson, medical adviser to the Colonial Office. Numerous papers have also been promised for the sectional meetings, including one on "Fever Hospital Construction," by the city architect of Edinburgh; one on "Modern Workshops," by Miss Paterson, H.M. Inspector of Factories; and several on the housing of the working classes, meat inspection, ambulance work, vaccination, infant mortality, notification of measles, &c. There will also be submitted and discussed a report on the inquiry made into the chemical and bacteriological condition of the air in the London Board Schools.

*Illness of Professor Ogston.*

Much regret is felt in Aberdeen at the fact of Professor Alexander Ogston being "down" with fever at Bloemfontein Hospital. It is not yet known whether the fever is enteric, but Professor Ogston was no doubt exposed more to infection than other acting army surgeons as he was not attached to any particular hospital but took a general survey of the medical arrangements at the seat of war in South Africa.

July 4th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Royal College of Surgeons in Ireland.*

THE Council of the Royal College of Surgeons in Ireland have by a circular letter to the Fellows dated June 25th called attention to a resolution which was adopted at the annual meeting of the College held on June 2nd. The resolution stated—

> That in the opinion of this meeting of the College the practice of canvassing for the offices of President, Vice-President, or Members of Council should cease.
>
> That it be a direction to the Council to ascertain by means of a circular sent to each of the Fellows whether they would wish, with the object of discouraging canvassing, that the Council should immediately after an election to the office of President or Vice-President recommend to the College the name of one Fellow for election to the next ensuing vacancy in each of these chairs.

For the purpose of carrying out the direction contained in the above resolution a short voting-paper has just been sent to each of the Fellows so that he may state his opinion—for or against—the method suggested in the resolution of preventing canvassing for the Presidency and Vice-Presidency of the College. The method adopted by the general meeting of obtaining the opinion of the College as to canvassing is obviously open to two objections. It does not include any provision to prevent canvassing for the Membership of the Council, and secondly, it gives no opportunity to a Fellow who is opposed to canvassing but dislikes the proposed means for preventing it to give an expression to his views.

*New Medical Deputy Lieutenant.*

The *Dublin Gazette* announces the appointment as Deputy Lieutenant of the City and County of Londonderry of Joseph Byrne, F.R.C.S.Irel., of Londonderry, his commission bearing date June 13th, 1900.

*The Belfast Workhouse.*

At the usual meeting of the Belfast Board of Guardians on June 19th a letter was read from the Local Government Board, based on a sworn inquiry, held by one of their inspectors, Mr. Robert Agnew, which certainly is a terrible indictment of the management of that extraordinary place. The letter states that it has been amply proved that, as regards the expenditure of such a large amount as £8367 upon buildings, repairs, and fittings in connexion with the Belfast Union Workhouse between August, 1897, and December, 1899, the general regulations (such as that any work or repairs to be executed in the workhouse exceeding the cost of £20 in one sum shall be contracted for by the guardians according to rules laid down) have been to a great degree ignored or evaded and broken. Upon a careful consideration of the evidence and after a close examination of the procedure adopted in making payments, it appears clear to the Local Government Board that a system was followed so as to make it appear that the law and regulations were being adhered to, while, as a matter of fact, they were being systematically broken. So impressed are the Local Government Board with the serious condition of affairs that they have decided to dismiss the master, but they will withhold the sealed order to this effect for a week in order to give him an opportunity of resigning his position immediately. (This he has now done, submitting a medical certificate to

the effect that he was physically unable to grapple with the duties of his office.) The Local Government Board also regard the conduct of two other minor officials with extreme disapproval. It need hardly be said that this extraordinarily severe censure of the Belfast Workhouse by the Local Government Board has produced a very marked effect on the general public who have now lost all confidence in the management of the Belfast Workhouse, and this feeling of public dissatisfaction has been deepened by the guardians in the coolest possible way approving of an expenditure of £13,500 for the purpose of providing a new board-room and clerks' offices in the workhouse. It is hoped that the Local Government Board will stop this most useless expenditure. Again, it is stated in the press that another scheme is being put forward by the guardians for the erection of new school buildings for the workhouse children on a site at the foot of Mount Divis, outside the present workhouse altogether, and it is presumed these may cost £100,000, while the present school buildings inside the workhouse would cost £25,000. Fortunately, without a new Act of Parliament such extravagance cannot be perpetrated. The Local Government Board say that the management of the Belfast Workhouse has been characterised by "gross irregularities" and "gross carelessness," and that there is inefficient supervision by responsible officials; but can the guardians themselves be acquitted of all blame for the lamentable state of a great public institution? One of the leading Belfast morning newspapers says: "It is the chattering incompetence of many of the guardians themselves that has long made the board the scandal and disgrace of Belfast, and we hope the ratepayers will take due note of what is going on and will vigorously apply the policy of the 'sweeping brush' at the next election."

*Royal University Graduates' Association.*

The first annual meeting of the Royal University Graduates' Association (the objects of which were stated in THE LANCET of June 16th, p. 1760) was held in Belfast on June 25th, the President, Dr. W. A. McKeown, occupying the chair. In their report the council state that the association has received the support of a large number of the graduates of the University, all the faculties being well represented, but they regret to find that so many have neglected to register as members of Convocation. Some improvement has been made in the University examinations, and the question of the appointment of extern examiners (so strongly advocated by the association) is now under the consideration of the Senate. Financially there is a balance in the treasurer's hands. The President, in moving the adoption of the report, said the action of the association had been directed by the principle that university education should not be under clerical control. The election of Dr. Walton Browne by the graduates to a place on the Senate of the Royal University had helped to secure a measure of fair play to the students of provincial schools and some improvement in the conduct of the examinations. He said many graduates had not joined the association because of the fundamental rule, not only pledging opposition to sectarian universities, but to provincial universities. It had been said why should the great medical school of Belfast be kept in leading-strings to Dublin? He (Dr. McKeown) sympathised with that argument and no one disliked more thoroughly the Dublin influence or was more desirous to reduce it to its legitimate proportions than himself, and in any reorganisation of the University it was a plank of their platform that if institutions were to be represented on the examining boards that representation must be regulated according to the importance of the respective institutions as estimated by the average number of graduate students for a period of years. The objection of the association to sectarian universities was on principle and admitted of no compromise, while that to a provincial university was a matter of experience and might alter with time and circumstance. For example, if the numbers of university students largely increased in Belfast, if funds were available for a university on so liberal a scale as to secure and hold the very best teachers and put the university above the temptation of increasing its students by lowering the standard, then he (Dr. McKeown) would be the very last person to oppose, but on the contrary, would strongly advocate the establishment of a local university, provided that in its organisation there was not even an appearance of sectarianism. Dr. McKeown then gave a very interesting address on Irish University education, in which he opposed very strongly Mr. Balfour's proposed settlement and again brought forward his own plan of local government for the Queen's Colleges with separation from State connexion and a reorganisation of the Royal University as a means of settling the question. Resolutions having been passed against the establishment of State-endowed sectarian universities, deprecating the destruction of the Royal University, advocating the appointment of extern examiners, and expressing satisfaction that the papers issued by the Foreign and Colonial Offices showed that there was no precedent in foreign countries or in the Colonies for the establishment of sectarian universities (on Mr. Balfour's lines), the office-bearers for the ensuing year were appointed. At the request of the meeting Dr. McKeown's interesting presidential address is to be printed.

July 3rd.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Right of Property in Medical Records.*

AT a recent meeting of the Society of Legal Medicine M. Brouardel brought forward a most interesting point in reference to a matter upon which he had been consulted. A medical man died and his only son, also a medical man, entered into possession of his late father's house and carried on the practice. He was anxious to consult certain notes and observations accumulated by his father which were stored away in the consulting room. But his step-mother (*belle-mère*) as co-heiress refused to let the son make use of the notes, ostensibly on the plea that she was anxious to avoid any violation of professional secrecy. M. Brouardel was of opinion that there would be no violation of secrecy, but simply a continuation of the trust from the first medical man to the second who succeeded and who would take over the medical observations collected by his predecessor. A legal expert, however—namely, M. Danet—held a different opinion and thought that all the notes and case-books should be burned. In face of this difference of opinion the question should be left to the courts to decide. In the course of the discussion at the Society of Legal Medicine M. Ladreit de la Charrière gave it as his opinion that a man who sells his practice has no right to communicate details as to the past medical history of his clients because they may choose to go to some other medical man than the purchaser of the practice. M. Rocher said that French law did not recognise the sale of practices. *A fortiori* then a medical man had no right to hand over to his successor details of patients without their consent. He agreed with M. Danet that the documents should be burned. M. Brouardel protested against this view, for if whenever a practitioner died all his notes were to be destroyed great injury would be done to the patients themselves and science would be deprived of a very valuable mine of collected knowledge. The matter was in the end remitted to a special committee, on the motion of M. Brouardel.

*Prophylaxis of Typhoid Fever in Paris.*

The Council of Hygiene and Public Health have unanimously passed the following rules which were formulated by M. Roy des Barres in his report upon typhoid fever in Paris during 1899 and the early months of 1900. 1. Steps shall be taken to ensure the formation of a sufficient protection zone round the gathering-grounds of spring waters. 2. The head waters are to be strictly examined so as to eliminate as far as possible any source of infection. 3. Throughout their course these waters shall be kept covered in. 4. The necessity for a final purification of the water shall be kept in mind whether this be done by filtration or some other process, such as using ozone, and experiments as to the best means for sterilisation in bulk shall be set on foot. 5. Filtered river water and spring water shall not be mixed as a rule, but if at any time such admixture shall become necessary means shall be taken for clearly setting forth the details of the admixture and the probable length of time for which such mixed supply shall last. 6. Every district supplied shall be informed as soon as there shall be any change made in the source of supply. In addition, the Council of Hygiene and Public Health of the Department of the Seine have passed a resolution to the effect that the administration shall as soon as possible supply with drinking water the public

parks and gardens, together with the restaurants contained therein. Fountains and conduits are to be specially labeled so that it can be seen at once which supply drinking water and which supply water for cleansing or gardening purposes only. The Prefect of the Seine has accordingly ordered that enamelled plaques bearing the words "drinking water" or "river water" shall be immediately affixed to all the fountains in the parks and squares.

*The Action of Artificial Abscess in Experimentally Produced Anthrax.*

M. Fochier and M. Mérieux of Lyons communicated to the Society of Biology at a meeting held on June 23rd the results of some experiments which they had made as to the effect of an artificially produced abscess in the case of animals inoculated with anthrax. If a rabbit is simultaneously inoculated with a virulent anthrax culture and with essence of turpentine in a dose of 0·25 of a cubic centimetre it either survives altogether or takes a much longer time to die than a control animal which dies at the end of a period lasting on an average for about 66 hours. The results of the turpentine injection are, as a rule, in harmony with the inflammatory reaction which it produces. If given 24 hours before the anthrax culture it produces far less marked effects than if given simultaneously. Given some hours after the anthrax culture its effects varied much. Intra-muscular injection gave less good results than subcutaneous injection. When the animals which survived were killed and examined they showed no signs, either macroscopically or bacteriologically, of anthrax. If a surviving animal was again inoculated it succumbed with undoubted signs of anthrax although the symptoms were less marked than in an ordinary animal. If the turpentine were injected into the dorsal region and the anthrax into the abdominal region M. Fochier and M. Mérieux noticed that there appeared, close to the œdema produced by the anthrax culture, another zone of gelatinous œdema which was apparently a sign of defensive action on the part of the organism. Also in animals thus treated the anthrax œdema sometimes did not appear or, at any rate, was less marked than in a control animal, and in those animals that died very few bacilli were found in the spleen and in some instances cultures made from them remained sterile. The artificial abscess, when it burst spontaneously, either did not become infected or, if it did, hæmorrhagic ulcerations were produced which without doubt contributed towards the death of the animal.

July 3rd.

## CANADA.

(FROM OUR OWN CORRESPONDENT.)

*Laboratory Work of the Board of Health of Ontario for 1899.*

THE provincial bacteriologist, Dr. J. J. Mackenzie, gives the results of his past year's work in the annual report of the board, which has but recently been handed to the profession. During the year the total number of specimens examined in the laboratory amounted to 1370, made up as follows: suspected sputum, 629; suspected exudate, 375; suspected typhoid blood, 164; waters for bacteriological examination, 16; waters for chemical examination, 29; miscellaneous samples, 52; and suspected rabies, 5. Out of something like 2400 physicians in the province of Ontario alone 300 physicians sent in 1100 of these specimens. The report shows as regards the examinations for suspected tuberculosis that 32 cases were diagnosed positively within two months of the presumed date of onset of the disease. From this is emphasised the importance of an early examination of the sputum, especially so when one remembers the success by modern methods which follows early diagnosis. As to the 375 diphtheria swabs, 147 of these gave positive cultures. The advantages of the early administration of antitoxin are also dwelt upon. There were four cases of suspected cerebro-spinal meningitis, only one of which showed the diplococcus intracellularis meningitidis, which was a fatal case with an illness of 48 hours. Among the miscellaneous investigations of the laboratory was a study of the character of a bacillus found in grass which resembles the tubercle bacillus. It is pointed out in the report that the occurrence of this bacillus in butter has undoubtedly given rise to error, as it is apt to be reported as the bacillus of tuberculosis. Its growth in culture media differs, however, from that of the bacillus of tuberculosis as it is more luxuriant and rapid. This organism was found in several specimens of hay, and from one the bacteriologist was successful in isolating it in pure culture. It was also demonstrated in the resulting cultures that the form was identical with Rabinowitch's butter bacillus; and experiments on animals showed it to have a very slight degree of virulence. Dr. Mackenzie was further able to show that its peculiar staining characters are due, as in the bacillus of tuberculosis, to a fatty envelope, but found that, contrary to what occurs in the bacillus of tuberculosis, this fatty envelope can be readily dissolved off with alcohol, so that after boiling in alcohol for ten minutes the organism no longer takes the peculiar stain but stains like any other form.

*Alum Baking Powders.*

From the Department of Inland Revenue at the capital, Ottawa, has just been issued a bulletin of some 39 pages which gives the results of the work of the Dominion chemists for some time past. No similar bulletin has been issued from the department on the same subject since 1880. It contains the details of the analysis of 156 samples of these powders purchased throughout the Dominion; and of this number only 44 samples are entirely free from alum. That is to say, over 70 per cent. of the baking powders sold and used in this country contain alum. A very large part of the bulletin is taken up with a study of the scientific evidence bearing upon the physiological effects of alum, especially that evidence which has accumulated since 1880. The conclusions reached are very outspoken and decided so far as alum itself is concerned. Whilst many manufacturers and some chemists claim that in a well-made alum powder no alum as such remains in the bread, but hydrate and phosphate of alumina, still the characters of these products have also been carefully and thoroughly gone into and the following conclusions arrived at: "The question of the harmlessness of hydrate of alumina has, however, not been proven, and the most that can be said for it is that the case is still unsettled. The health of a nation is too serious a matter to be imperilled lightly and if it be impossible to secure prohibitory legislation against alum baking powders it is all the more desirable that manufacturers of these powders should be required to state their composition on the package, so that consumers may know what they buy and use. Until it is demonstrated that hydrate of alumina is harmless in food the use of alum baking powders is attended with a very serious risk; while not even the proving of these substances harmless would establish the safety of these powders, since, for reasons already mentioned, it is quite uncertain that the reaction is completed in the bread."

*Special Hospital Accommodation for Inebriates.*

For some years past an effort has been put forth by leading members of the profession in Ontario, assisted by prominent lay gentlemen, to bring the Ontario Government to a sense of their duty in providing accommodation for the special treatment of those unfortunates addicted to the liquor habit. Their labours are apparently in the immediate future to be crowned with success. At the last session of the local legislature an influential delegation waited on the Premier of the province, the Hon. Dr. G. W. Ross, with the result that a Bill has been drafted for introduction into the House in the next session. This Bill will provide for the immediate appointment of a superintendent, a medical man who has devoted some attention to the treatment of the chronic inebriate. He will at once proceed to organise cottage hospitals throughout the province or to see that special wards are set apart in the general hospitals already existing for the proper care and treatment of these patients. The legislation will further provide that in towns of 20,000 and over special commissioners shall be appointed to look after this work, whose duty will be to induce inebriates to undergo treatment and to visit and encourage them while they are undergoing treatment. Steps will also have to be taken to make provision for their employment and to endeavour to change their environment and to place them on a higher plane of life and living. The Government will also be asked to make a per diem grant in addition to the regular hospital grant. The scheme has been approved of by practically all the leading medical societies throughout the country.

June 23rd.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

*Another Anti-vivisection Bill in the United States.*

IN THE LANCET of Feb. 24th (p. 583) I referred to the Anti-vivisection Bill introduced by Senator Gallinger in the district of Columbia, having for its nominal object the prevention of cruelty to animals. Owing to the opposition against this Bill of the most prominent scientific and medical men in the country, including Dr. Osler, Professor Welch, Professor Bowditch, Professor Eliot, and Dr. Keen (President of the American Medical Association), Senator Gallinger was induced to hold a meeting at which both sides of the question might be fairly placed before the public and the whole matter discussed at length. This meeting was held on Feb. 21st at Washington and, as may be imagined, was both instructive and interesting. The case for the vivisectionists was presented in the most convincing manner by Dr. Hare, Dr. Keen, Professor Welch, and Professor Bowditch. Dr. Welch's arguments were especially to the point. He contended that there was no necessity whatever for further legislation in regard to vivisection as the existing law permits only "properly" conducted scientific experiments or investigations, which experiments are to be performed only under the authority of the faculty of some regularly incorporated medical college, university, or scientific society. He also drew attention to perhaps the most serious fault of the Bill which put into the hands of men who need not be, and are not likely to be, physicians or men of science, arbitrary powers requiring for their use skilled knowledge concerning matters of the highest importance to medicine and biological science and to the welfare of mankind. The determined stand made against the Gallinger Bill has had the effect of compelling its authors to amend it to a certain extent, but the only concessions of importance introduced into the Bill drafted in its place relate to exclusion of cold-blooded animals, the omission of two classes of special certificates, and a wider choice in the selection of anæsthetics. In some respects the restrictions are made more severe and the most obnoxious features of the Bill are left unchanged. Professor Eliot of Harvard University expresses the sentiments of the majority of scientific and medical men in this country with regard to all such legislation in the following remarks: "1. To interfere with or retard the progress of medical discovery is an inhuman thing. Within 15 years medical research has made rapid progress, almost exclusively through the use of the lower animals, and what such research has done for the diagnosis and treatment of diphtheria it can probably do in time for tuberculosis, erysipelas, cerebro-spinal meningitis, and cancer, to name only four horrible scourges of mankind which are known to be of germ origin. 2. The human race makes use of animals without the smallest compunction as articles of food and as labourers. It kills them, confines them, gelds them, and interferes in all manner of ways with their natural lives. The liberty we take with the animal creation in using utterly insignificant members of them for scientific researches is infinitesimal compared with the other liberties we take with animals, and it is that use of animals from which the human race has most to hope. 3. The few medical investigators cannot probably be supervised or inspected or controlled by any of the ordinary processes of Government supervision. Neither can they be properly licensed, because there is no competent supervising or licensing body. The Government may properly license a plumber, because it can provide the proper examination boards for plumbers; it can properly license young men to practise medicine, because it can provide the proper examination boards for that profession and these boards can testify to the fitness of candidates; but the Government cannot provide any board of officials competent to testify to the fitness of the medical investigators. 4. The advocates of anti-vivisection laws consider themselves more humane and merciful than the opponents of such laws. To my thinking these unthinking advocates are really cruel to our race. How many cats or guinea-pigs would you or I sacrifice to save the life of our child or to win a chance of saving the life of our child? The diphtheria antitoxin has already saved the lives of many thousands of human beings, yet it is produced through a moderate amount of inconvenience and suffering inflicted upon horses and through the sacrifice of a moderate number of guinea-pigs. Who are the merciful people—the few physicians who superintend the making of the antitoxin and make sure of its quality, or the people who cry out against the infliction of any suffering on animals on behalf of mankind? It is of course possible to legislate against an improper use of vivisection. For instance, it should not be allowed in secondary schools or before college classes for purposes of demonstration only, but any attempt to interfere with the necessary processes of medical investigation is, in my judgment, in the highest degree inexpedient and is fundamentally inhuman." The anti-vivisection party in the United States has been endeavouring to make capital of the supposition that the restrictive laws against vivisection passed some years ago in Great Britain have fulfilled the purpose for which they were enacted and are in harmony with the views of the majority of the scientific and medical men of that country. Dr. Welch, in his address of Feb. 21st showed that such was not the case and demonstrated his point by the contrary evidence of Sir John Simon, Lord Lister, Sir T. Grainger Stewart, Sir T. Lauder Brunton, and Sir Michael Foster. In fact the experience of Great Britain as to the results of restrictive legislation with regard to vivisection will act as an incentive to scientific and medical men to oppose as strenuously as possible the imposition of similar laws in the United States.

June 30th.

## THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to noon on Wednesday:—

| | £ | s. | d. |
|---|---|---|---|
| Christ Church, Lancaster Gate | 1519 | 0 | 0 |
| Miss M. E. Druce | 100 | 0 | 0 |
| F. C. D. | 100 | 0 | 0 |
| Christ Church, Mayfair | 174 | 0 | 0 |
| Holy Trinity, Roehampton | 73 | 0 | 0 |
| St. Thomas's, Portman-square | 80 | 0 | 0 |
| St. James's, Hatcham | 97 | 0 | 0 |
| St. Augustine's, Highbury | 57 | 0 | 0 |
| All Saints, Orpington | 34 | 0 | 0 |
| St. Paul's, Onslow-square | 475 | 0 | 0 |
| St. Stephen's, Ealing | 85 | 0 | 0 |
| St. George's, Perry Hill | 40 | 0 | 0 |
| St. Saviour's, Upper Chelsea | 159 | 0 | 0 |
| St. Matthew's, Bayswater | 142 | 0 | 0 |
| Clapham Parish Church | 70 | 0 | 0 |
| Holy Trinity, Paddington | 85 | 0 | 0 |
| St. Andrew's, West Kensington | 85 | 0 | 0 |
| St. Mark's, Hamilton-terrace | 223 | 0 | 0 |
| Immanuel Church, Streatham-common | 72 | 0 | 0 |
| St. Michael's, Highgate | 82 | 0 | 0 |
| St. Matthew's, Denmark-hill | 143 | 0 | 0 |
| St. Mark's, Highgate | 76 | 0 | 0 |
| St. Mary Aldermary and St. Thomas Apostle | 85 | 0 | 0 |
| St. Paul's, Beckenham | 145 | 0 | 0 |
| St. James's, Piccadilly | 88 | 0 | 0 |

The total up to noon on Wednesday last was £31,000. The collection made at Christ Church, Lancaster-gate, is the largest amount ever received from one congregation since the establishment of the Fund.

POPLAR HOSPITAL FOR ACCIDENTS.—The annual festival dinner in aid of the funds of this hospital was held at the Holborn Restaurant on July 2nd, Mr. F. J. Mirrielees presiding. Colonel J. L. du Plat Taylor, replying to the toast of "The Navy, Army, and Auxiliary Forces," said that his son in South Africa had assured him that there were no complaints to make against the hospitals there. It would be better, he thought, if those who had fault to find would communicate with headquarters instead of writing letters to the *Times*. The chairman in proposing "Success to the Poplar Hospital," read a characteristic letter from Mr. Rudyard Kipling, who promised a contribution of £5. The Drapers' Company had given £14,000 for the purpose of providing 20 additional beds for medical cases, and had bestowed an endowment of £1000 per annum. The committee were now appealing for assistance with a view to increase the number of beds. Donations and subscriptions to the amount of about £3900 were announced.

# Obituary.

## THOMAS JONES, M.B., B.S. LOND., F.R.C.S. ENG.,

SURGEON TO THE MANCHESTER ROYAL INFIRMARY; PROFESSOR OF SURGERY, OWENS COLLEGE.

WE deeply regret to have to record the death of Professor Thomas Jones at Springfontein, South Africa, under peculiarly sad circumstances. It will be remembered that when it was decided to send out a Welsh hospital to South Africa, Professor Jones consented to undertake the management of it, and he left England on April 14th, together with the other members of the hospital staff. On landing at Cape Town he at once proceeded to Bloemfontein, where he remained for several weeks pending the establishment of the hospital at Springfontein in the Orange River Colony, which he joined towards the end of May. The first intimation of his illness was conveyed in a telegram received on June 16th, stating that he was suffering from nervous prostration. Two days later a message arrived to the effect that he was much better, but the following morning the sad news was received of his death, which had taken place on June 18th, presumably from enteric fever, as a large proportion of the troops under treatment at Springfontein were suffering from this affection. The Manchester contingent of the Welsh Hospital has been strangely unfortunate, for of the five members of the surgical staff who volunteered from this district, two others have also died in South Africa—viz., Dr. Herbert Davies, formerly house surgeon to Professor Jones at the Manchester Royal Infirmary, and also acting in the same capacity in the Welsh Hospital, and Mr. Eames, one of the surgical dressers.

Thomas Jones was born in 1848 in Carmarthenshire, and was educated first at Derlwyn College in that county and afterwards at the Normal College, Swansea. His professional studies were commenced at the Northern Hospital, Liverpool, in 1865, and were continued at Guy's Hospital, London. From an early period in his career his progress was marked by distinction, and he soon gave evidence that he would make for himself a name in the profession which he had decided to follow, for in the examinations for the degree of Bachelor of Medicine of the London University he obtained Honours in Anatomy and Medicine, and the gold medal in Chemistry and Materia Medica. After qualifying he held the office of house surgeon at Guy's Hospital and henceforth devoted himself entirely to the practice of surgery, in which he was destined to rise to such high distinction.

An old Guy's student, one of his contemporaries, writes of him as follows:—

> Probably all old Guy's men who were at the hospital in the late "sixties" and early "seventies" will remember the late Mr. Tom Jones. He was one of the best known students of his year, taking honours in most of the subjects at the London University and carrying off the gold medal in Chemistry at the first M.B. There are many probably who can recall him when dresser to the late Mr. Poland, and somewhat later again as house surgeon. The writer well remembers how well he fitted this latter position and how much he was thought of by the dressers and junior students. He was a perfect mine of information on all sorts of subjects, there was an entire absence of "side" in his manner, and every one liked his cheery disposition and kindly heart. The news of his tragic and untimely death in South Africa comes as a shock to his old fellow-students.

In 1872 Mr. Jones applied for and was elected to the post of house surgeon at the Manchester Royal Infirmary, and from that time he held office continuously at that hospital. From 1873 to 1876 he was pathologist, and from 1876 to 1879 he fulfilled the duties of surgical registrar. In 1875 he obtained the Fellowship of the Royal College of Surgeons of England, and in 1879 he took the degree of Bachelor of Surgery at the University of London with honours. In 1879 he was elected a member of the honorary staff of the Manchester Royal Infirmary, being appointed an assistant surgeon. In 1880, on the death of Mr. S. M. Bradley, he became full surgeon and this office he continued to hold up to the time of his death. In 1874 he was appointed surgeon to the Children's Hospital at Pendlebury, near Manchester, and upon his resignation of that post in 1880 he was made consulting surgeon. In the treatment of surgical diseases of children he always took great interest, and he devoted much time and energy to this institution which at that time had only been recently established. In 1880 he was appointed lecturer on Practical Surgery at the Owens College, and on the resignation of Professor Hare of the chair of Surgery in 1892 he accepted the Professorship of Systematic Surgery. By virtue of the latter office he became Examiner in Surgery to the Victoria University. In addition he also acted as one of the surgeons to the Manchester Cancer Hospital. In 1891 Professor Jones was President of the Manchester Medical Society, in the work of which he had always taken great interest, having been a most active member of the committee from 1875 to 1890. He was also a member of the council of the University College of Wales, in the success of which he was warmly interested and he had contributed generously to its funds.

Professor Jones was a frequent contributor to the medical journals, many of his papers being published in the *Medical Chronicle*, of which he was one of the first and most enthusiastic promoters. His articles were of a highly practical character, being based upon his personal experience and written in a characteristically terse and lucid style. He had always paid special attention to the pathology and treatment of diseases of bone, and in 1887 he published a valuable monograph on this subject which contained the results of his own observations and investigations. We believe that his last contribution to surgical literature was an article upon Injuries and Diseases of the Ankle-joint (written conjointly with Mr. J. E. Platt) which appeared last year in the first volume of the "Encyclopædia Medica" now in course of publication. Professor Jones commenced practice in Manchester on the termination of his tenure of office as house surgeon at the infirmary in 1873 and from the outset he devoted himself entirely to surgery, being one of the first to practise in the provinces as a "pure surgeon." He gradually acquired an extensive consulting practice and for many years he was regarded as one of the leading surgeons in the north of England. He was a most dexterous operator, paying great attention to detail and to the after-treatment of his cases, so that his results were attended by an unusual amount of success. As a teacher Professor Jones had established for himself a great reputation and he was held in high esteem and great respect by the students, with whom he was most popular. He was extremely regular and most indefatigable in his hospital and college duties, rarely allowing the calls of his extensive private practice to interfere with his lectures or classes in the wards.

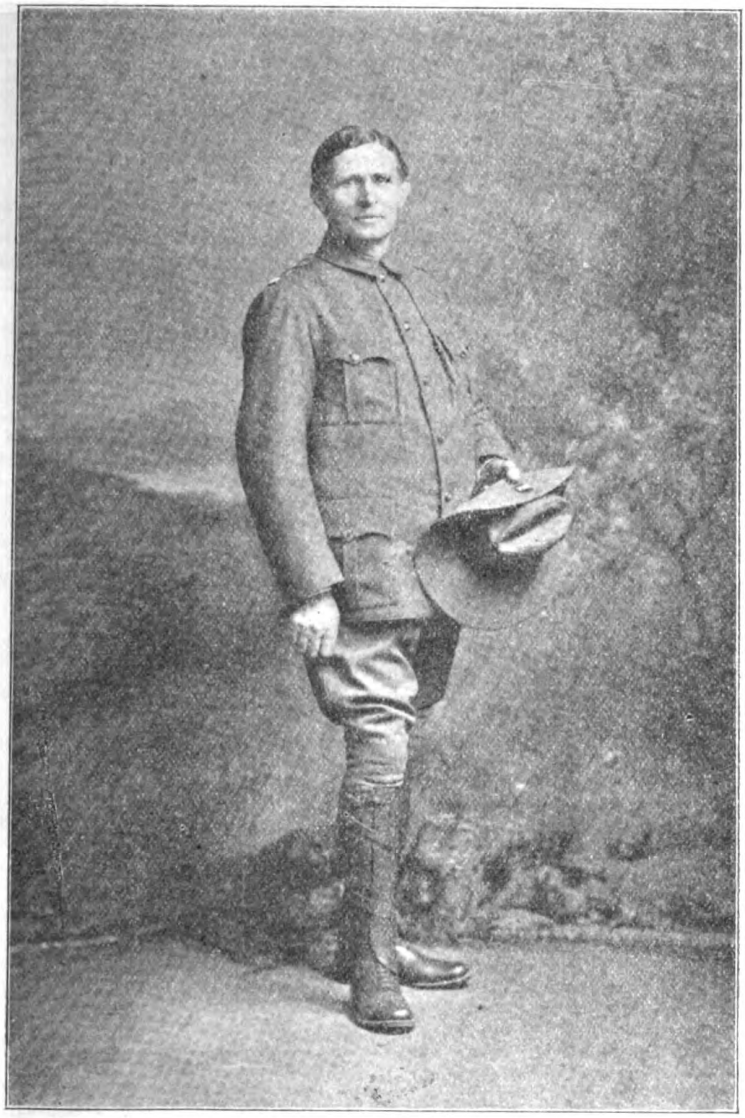
In private life Professor Jones was the most genial and kind hearted of men. The universal esteem in which he was held was shown by the large and representative attendance at the "send-off" dinner previously to his departure for Africa. The Principal of Owens College was in the chair and among those present were the Lord Mayor, the Dean of Manchester, and many other prominent citizens. A few days later when he left Manchester there was another large assemblage at the railway-station of his personal friends, colleagues, and medical students to wish him God-speed and a safe return.

On Saturday, June 23rd, a memorial service was held in Union Chapel, Manchester (of the congregation of which Professor Jones had been a member), and was very largely attended. Members of the Council and of the teaching staff of Owens College, representatives of the board of management, and almost all the members of the honorary staff of the Manchester Royal Infirmary, together with a large number of medical students, assembled at the College shortly before the time appointed for the service and marched thence in procession to the chapel. An impressive address was there delivered by the Rev. Dr. Maclaren, who described the death of Professor Jones as that of a martyr, and said that his name had been added to the long roll of members of his noble profession who had taken their lives in their hands and freely given them away on behalf of others at the call of duty.

Professor Jones married in 1881 the daughter of Mr. Boyd of Cheadle Hulme. With his widow and an only daughter who survive him very widespread sympathy will be felt in the irreparable loss which they have sustained.

An old student who was house surgeon to Professor Jones writes as follows:—

> The sad and untimely death of Professor Thomas Jones will be keenly and universally deplored by all those of us whose good fortune it has been to have received their surgical instruction under his guiding influence. As a teacher he was always held in the profoundest respect by each one of us, his punctuality and his regularity in attending to deliver his lectures and clinical demonstrations soon earned our warmest appreciation, and many a time did we feel that he had seriously inconvenienced himself in order not to disappoint us. His classes were always largely attended, and his methodical, impressive, and painstaking manner in imparting instruction to us and the kindly and courteous way in which he corrected our errors and listened even to our wildest suggestions made us feel that in him we had a most careful, considerate, and successful



THOMAS JONES, M.B., B.S. LOND., F.R.C.S. ENG.,
SURGEON TO THE MANCHESTER ROYAL INFIRMARY, ETC.

teacher, one who thoroughly understood our needs and spared no effort on his part to meet them. And, more than a teacher, we felt him to be our friend in the truest sense—always taking a personal interest in our own individual careers, ever ready to sympathise with us in present misfortunes and to encourage and advise us as to the future, and often has a kindly word from him spurred us on to further efforts, resulting in our ultimate success. His extreme gentleness and consideration towards the patients under his charge, making him beloved by them one and all, has set us a noble example of generous whole-heartedness which we would all do well to follow. When recently it became known that Professor Jones had bravely and cheerfully placed his services at the disposal of the Welsh Hospital, many were the offers from his former students to accompany him to South Africa as his assistants, and proud indeed were the four gentlemen ultimately selected to feel that they were about to help their country's cause under the guidance of one whom they valued and respected so highly. And now, with the hearty "God-speed" with which we took our farewell of the gallant little band still ringing in our ears, comes the sad news that he, of whose unselfish devotion to duty we are all so justly proud, will never return to us again, that his kindly and genial face will never more be seen in the wards with which he will always be so closely associated in our memories, and that we are left to mourn the loss of one who has proved himself a hero in every sense of the word, and our close association and friendship with whom will ever be treasured as one of the pleasantest features of our student days.

## HENRY BURFORD NORMAN, F.R.C.S. ENG.

THE announcement of the death of Mr. Burford Norman on June 11th at Chesham, Bucks, has been received with great sorrow by all his friends. His father, Mr. William Norman, was also a medical man and a descendant of an old Somersetshire family—the Normans of Fiveheads. Henry Burford Norman was born on April 11th, 1819, and after a liberal education he commenced his professional training with his father. In 1837 he entered as a student at University College and his companions were Spencer Wells, John Marshall, and John Eric Erichsen. In 1841 he was admitted a Member of the Royal College of Surgeons of England, and soon after was appointed house surgeon to the distinguished Liston. He obtained the Fellowship of the College in 1846 and shortly afterwards he came forward as a candidate for the post of assistant surgeon to University College Hospital, but he was defeated by the late Sir John Erichsen. Mr. Burford Norman then started as an ophthalmic surgeon and he obtained the appointment of surgeon to the North London Eye Hospital. At this period he resided in Duchess-street, Portland-place, W. After a few years of hard work his health became seriously impaired and he was obliged to leave London for rest and retirement. He commenced practice again in 1858 at Portsmouth as the successor of the late distinguished surgeon, Dr. E. J. Scott. In 1861 he was elected on the surgical staff of the Royal Portsmouth Hospital, an appointment which he held with marked distinction for several years. He took a leading part in the foundation of the Portsmouth and South Hants Eye and Ear Infirmary, and filled the position of consulting surgeon to that institution. Mr. Norman was an able and well-known surgeon in Hampshire and he practised with much success for many years. He contributed many valuable papers on surgical topics to the medical journals. He was a Fellow of the Royal Medical and Chirurgical Society and an ex-President of the Harveian Society. Throughout his long career he enjoyed the entire confidence of the medical men of Portsmouth, and on his retirement from practice in 1889 he was entertained at dinner by his professional friends and was presented with a valuable silver service as a token of their regard and esteem.

Mr. Burford Norman was a man of sterling character and ever ready to help in every good and worthy enterprise. He was twice married and has left behind him a widow and six children. Two of his sons are members of the medical profession. By a life guided by broad and charitable sentiments and never-failing courtesy he obtained the affection and confidence of a large circle of friends.

## HENRY PEACOCK, F.R.C.S. ENG., M.R.C.P. LOND.

MR. HENRY PEACOCK died at Bath on June 12th in his eighty-eighth year. Mr. Peacock received his medical education at the London Hospital and qualified as M.R.C.S. Eng. in 1837. Two years later he entered the medical service of the Royal Navy. In 1839-40 he was assistant surgeon on H.M.S. *Crocodile*, at that time engaged in suppressing the slave-trade. Mr. Peacock was afterwards appointed medical officer to the dockyard at Chatham, a post which he held for nearly 20 years, and was also staff surgeon to the Royal Dock yard Battalion from its formation until his retirement from the service. Mr. Peacock became F.R.C.S. Eng. in 1852 and 10 years later was admitted a Member of the Royal College of Physicians of London. In 1862 he commenced practice at Sudbrook (Gloucestershire) and was subsequently appointed assistant physician to the Gloucester General Infirmary and medical officer to the Gloucester Provident Dispensary. Mr. Peacock, who had retired from the practice of his profession, had recently resided at Malvern.

## ARCHIBALD ADAMS, M.D., M.CH. R.U.I., F.R.C.S. IREL.,

LIEUTENANT-COLONEL INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL ARCHIBALD ADAMS, I.M.S., succumbed to an attack of cholera at Mount Abu on May 20th. He was born on March 20th, 1850. He was educated at the Royal University of Ireland and graduated M.D., M.Ch., in 1872, subsequently taking the Fellowship of the Royal College of Surgeons in Ireland in 1886. He entered the Medical Department of the Navy, passing through the Netley School in the winter session of 1872-73, and served in Africa with the Royal Marines during the Ashanti war of 1873-74, for which he received the medal. In the spring of 1875 he competed for an appointment in the Indian Medical Service and was gazetted a Surgeon on the Madras Establishment on March 31st of that year. He was duly promoted to field rank in 1887, and on March 31st, 1895, attained the rank of Lieutenant-Colonel. Not long after his arrival in India he was posted as medical officer of the Erinpoora force, a local corps under the orders of the Indian Foreign Office, and he continued under the Foreign Office during the remainder of his life. Promotion soon came to him from regimental employment to the important post of Residency Surgeon at the Court of Marwar, where, at the capital, Jodhpore, he resided for some 18 years, supervising all the medical arrangements of that wealthy State and enjoying not only a lucrative practice but also the respect and esteem of a succession of British Residents at the Court and of a circle of native friends which included the two successive Maharajas Jaswant Singh, G.C.S.I., and Sardar Singh. Only last year Lieutenant-Colonel Adams published a medico-topographical and general account of the Western Rajputana States, of which he had a rare knowledge. This work is one of great excellence, showing a mastery of facts and bearing evidence of the industry with which he applied himself to the study of the conditions affecting the health and happiness of the inhabitants of that portion of India in which his lot was cast. His hospitality while at the Court of Jodhpore was remarkable even in the hospitable community of Anglo-Rajputs, and his kindness of heart and skill will long be remembered by a very wide circle of friends who admired the sterling traits of his character.

From Jodhpore Colonel Adams was promoted to be Administrative Officer in Rajputana—a post which is regarded as the blue ribbon of the Foreign Office appointments. He has now fallen at his post of duty, a victim to that fell disease which is following in the wake of famine and is now adding to our great difficulties in India. Lieutenant-Colonel Adams was attacked by the disease at Mount Abu at the time when at Pallanpur (near Abu Road) 25,000 famine-stricken people were in the grip of cholera—and cholera of such a virulent type that some of the victims are said to have succumbed within 10 minutes of the appearance of the symptoms.

Lieutenant-Colonel Adams married only a few years ago a daughter of Lieutenant-Colonel H. B. Abbott, who was many years Political Agent at the Court of Jhallawar. To this lady our thoughts of true sympathy are extended in these days of her sudden bereavement.

## CLAUDE CLARKE CLAREMONT, M.R.C.S. ENG., L.S.A.

MR. CLAUDE CLAREMONT, who died at Bognor on May 27th, in the 77th year of his age, was a well-known practitioner in North London and had an exceptionally long record of service as public vaccinator to St. Pancras parish. He received his professional education at University College, London, becoming qualified as M.R.C.S. in 1855 and as L.S.A. in 1859. In 1858 he contributed to THE LANCET an interesting case in which during the extraction of several teeth under chloroform a portion of a tooth slipped into the larynx unperceived by anyone, the first symptom of the

mishap being the fits of coughing and respiratory difficulties produced by the foreign body. The fragment of tooth was expelled on the thirty-fourth day afterwards during a fit of coughing and was found to weigh seven grains. In October, 1899, Mr. Claremont retired from practice and on this occasion a brief notice of his long public service appeared in THE LANCET of Nov. 18th (p. 1392). Mr. Claremont had seven sons, three of whom are medical men, one practising in London, one in Southsea, and one in Norwich.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

### ELECTION OF MEMBERS OF COUNCIL.

THE twelfth election of Fellows to fill the vacancies in the Council of the College under the new regulations was held at the College, Lincoln's Inn-fields, on Thursday, July 5th, between 1.30 P.M. and 4 P.M. The result of the voting was as follows:—

| | Votes. | Plumpers. |
|---|---|---|
| MR. A. COOPER ... ... | 304 ... ... ... | 16 |
| MR. J. WARD COUSINS... | 257 ... ... ... | 16 |
| MR. A. PEARCE GOULD... | 253 ... ... ... | 6 |
| MR. J. TWEEDY ... ... | 233 ... ... ... | 2 |
| MR. J. BLAND-SUTTON ... | 199 ... ... ... | 13 |
| MR. R. CLEMENT LUCAS ... | 170 ... ... ... | 32 |
| MR. W. J. WALSHAM... ... | 159 ... ... ... | 1 |
| MR. H. H. CLUTTON... ... | 148 ... ... ... | 11 |
| MR. G. JORDAN LLOYD ... | 138 ... ... ... | 3 |
| MR. C. H. GOLDING-BIRD... | 127 ... ... ... | 5 |
| MR. W. H. BENNETT... ... | 121 ... ... ... | 8 |
| MR. J. A. BLOXAM ... ... | 83 ... ... ... | 7 |

Mr. Tweedy and Mr. Cooper are therefore re-elected and Mr. Ward Cousins and Mr. Pearce Gould elected Members of the Council.

713 Fellows voted, 34 personally and 679 through the post. 4 proxies arrived too late and 3 voting papers were spoiled. The number of candidates, 12 for the four vacancies, made the election remarkable.

# Medical News.

**MR. BURDETT-COUTTS'S CHARGES: APPOINTMENT OF THE COMMISSION.**—Mr. Balfour announced in the House of Commons on Thursday afternoon that Dr. W. S. Church, President of the Royal College of Physicians of London, Professor Daniel John Cunningham, Professor of Anatomy, Trinity College, Dublin, and Lord Justice Romer, would constitute the Commission of Inquiry to investigate the treatment of the sick and wounded in South Africa.

**ROYAL COLLEGE OF SURGEONS OF ENGLAND.**—The following gentlemen having passed the necessary examinations have been admitted Licentiates in Dental Surgery and have received their diplomas:—

Robert Westmore Allen and John Bennett, Guy's Hospital Dental Department and School; Thomas Algernon Baker, Mason College, Queen's, General, and the Dental Hospital, Birmingham; Mountjoy Henry Bartlett, Wilfrid Boothby Blandy, and Herbert Bristow, Charing Cross and the Dental Hospital of London; Charles James Burton and Arthur Ernest Chaundy, Middlesex and the National Dental Hospital; Giovanni Battista Ciceri, M.D. Pavia, University of Pavia, Italy, and the Dental Hospital of London; Ernest Couchman, Guy's Hospital Dental Department and School; Henry Ormrod Dickin and Edward Entwisle, University College, Royal Infirmary, and Dental Hospital, Liverpool; Alfred Culmer Edwards, Percy Harry Furnivall, Arnold Maurice Gabriel, and John Herbert Greenwood, Guy's Hospital Dental Department and School; Claude Bolton Grenside, Robert Harold Heath, Arthur George Heydon, and Robert Hooper, Charing Cross and the Dental Hospital of London; George Henry Hiorns, Middlesex and the National Dental Hospital; Robert Howard, Ernest Guy Jones, and Samuel Kersh, Owens College, Royal Infirmary, and Victoria Dental Hospital, Manchester; William Jarvis, Leonard Adolphus Charles Knight, and Athol Lucien Lambert, Guy's Hospital Dental Department and School; William Kittow, Charing Cross and the Dental Hospital of London; Everard Foster Lane and Thomas Charles Mills, Middlesex and the Dental Hospital of London; Hector Ernest Laurence, Middlesex and the National Dental Hospital; Rowland Claude Gasson May, Charles Sculthorpe Morris, Kenneth Carrington Ness, and Sydney Lionel Prall, Guy's Hospital Dental Department and School; Percy George Pavitt and George Frederick Prickett, Middlesex and the National Dental Hospital; Walter Leslie Pearse, Charing Cross and the Dental Hospital of London; Horace Reginald Pring, M.R.C.S. Eng., St. Thomas's and the Dental Hospital of London; Ralph Bertram Recordon, William Radley Searle, Harvey Llewellyn Shelton, and Alfred Montague Austin Stevens, Guy's Hospital Dental Department and School; Samuel Henry Roe, Harold Round, and Herbert Steynor Steynor, Mason College, Queen's, General and the Dental Hospital, Birmingham; Ernest George Simmonds, M.R.C.S. Eng., St. Bartholomew's and the National Dental Hospital; Percival Frank Swabey, Albert Edward Toogood, William White, and Reuben Archibald Winder, Charing Cross and the Dental Hospital of London; John Newsome Taylor, University College Royal Infirmary and Dental Hospital, Liverpool; and Jacob Louis Wartski, Guy's Hospital Dental Department and School.

**EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.**—The following gentlemen have passed the Second Examination of the Board in the subjects indicated:—

Monday, July 2nd:

*Anatomy and Physiology.*—Henry William John Hawthorn, Herbert Frank Marshall, Seymour Gilbert Barling, Cuthbert Keary Gettings, Robert Beatson Dennis Hird, James Archibald McIlroy, and Edward Brown Garrard, Mason University College, Birmingham; Ian Canute Gordon Glassford, Melbourne and Edinburgh Universities; Harry Reginald Burpitt and Hector Jones, University College of South Wales, Cardiff; Edward Aubrey Guy Wilkinson, Oxford University; George Hamilton, Otago University and Middlesex Hospital; William Tudor Webb, University College, Bristol; Harold Joseph Moon, Owens College, Manchester; William Phillips Jones, Firth College, Sheffield; George Raymond, St. Thomas's Hospital; Frank Herbert Wood, George Henry Adam, and William Bradshaw Ainger, St. Bartholomew's Hospital; Norman Bremer Vickers Jacob, London Hospital; Gerald Eade Bellamy, Charing Cross Hospital; and Arthur Frederick Cole, St. Mary's Hospital.

14 gentlemen were referred to their professional studies for three months.

Tuesday, July 3rd:

*Anatomy and Physiology.*—Wilfrid Ashwell Aldred, Thomas Wayott Chaff, John Wheeler Cleveland, Frederick Spencer Lister, and Harry Theodore Wilson, St. Bartholomew's Hospital; John Avery, Harold Munro Scott, and Cecil Colmer, London Hospital; Herbert Ernest Batten, Edward Guy Anthonisz, and Rupert Butterworth, St. Mary's Hospital; William Athol Desmond King, Middlesex Hospital; Welby Earle Fisher, Philip Henry Seal, and Isidor Tritsch, University College, London; Ernest Ulysses Williams, Sebastian Gilbert Scott, and George Hope Warren, King's College, London; Malcolm Winfrid Shutte and Philip Reginald Humphry, St. George's Hospital; Bernard Higham and James Hornidge Chauncy, St. Thomas's Hospital; Robert Edward Brayne, Walter Woolfe Read, and Guy Leslie Buckridge, Guy's Hospital.

11 gentlemen were referred to their professional studies for three months.

**FOREIGN UNIVERSITY INTELLIGENCE.**—*Bologna:* Dr. Alessandro Codivilla of Turin has been recognised as *privat-docent* of Surgery.—*Chicago* (*Rush Medical College*): Dr. Daniel R. Brower has been appointed Professor of Neurology and Psychiatry. Dr. W. H. Welch, of the Johns Hopkins University, has been appointed Professor of Therapeutics and Materia Medica.—*Genoa:* Dr. Carlo Orrecchia of Turin has been recognised as *privat-docent* of Surgery.—*Gratz:* Dr. A. Birnbacher, extraordinary Professor of Ophthalmology, has been appointed ordinary Professor.—*Jena:* Dr. Hartmann has been recognised as *privat-docent* of Surgery.—*Leipsic:* An institute of forensic medicine has been recently established, the charge of which has been intrusted to Professor Kockel.—*Lille:* Dr. Calmette has been appointed Professor of Hygiene and Bacteriology.—*Messina:* Dr. Ernesto Tricomi of Padua has been appointed Professor of Clinical Surgery and Operative Medicine.—*Montpellier:* Dr. Bosc has been appointed Professor of Pathological Anatomy.—*Prague* (*Bohemian University*): Dr. Franz Scherer, *privat-docent* of Diseases of Infants, has been promoted to an extraordinary Professorship.—*St. Petersburg* (*Military Medical Academy*): Dr. Blumenau has been recognised as *privat-docent* of Internal Medicine and Dr. Oleinikoff as *privat-docent* of Bacteriology.—*Strasburg:* Dr. Funke has been recognised as *privat-docent* of Midwifery and Gynæcology and Dr. Landolt as *privat-docent* of Ophthalmology.—*Yale:* Dr. Moses C. White, Professor of Pathology for the last 33 years, has become Emeritus Professor; Dr. Bartlett has been appointed to succeed him. Dr. Benjamin Moore, Professor of Physiology, has resigned, having been appointed to the Lectureship in Charing Cross Hospital, London. Dr. Otto G. Ramsay of the Johns Hopkins University has been appointed to the Chair of Obstetrics and Gynæcology.

METROPOLITAN HOSPITAL SATURDAY FUND.—Oct. 13th is the date set apart for the "Special" Hospital Saturday Collection for the current year.

THE LIVINGSTONE MEDICAL COLLEGE.—The committee of this institution has purchased the mansion, which includes about two acres of adjoining woodland, lately in the occupation of the Barclay family of Knotts Green, Leyton, Essex. The college is intended for the primary medical training of candidates for foreign missionary work.

PRESENTATIONS.—Mr. Richard Ellery, L.R.C.P., L.M. Edin., M.R.C.S. Eng., L.S.A., who is leaving Plympton, Devon, after a residence in the village of 35 years, was on June 16th presented with a silver salver together with a list of the subscribers, numbering about 150. Mrs. Ellery was presented with a purse of gold.—On the occasion of his recent marriage the Æsculapian Society of London presented Mr. W. Campbell M'Donnell, L.R.C.P. Lond., M.R.C.S., with a table and chair for his consulting room, a gratifying recognition of his services as honorary secretary to the Society.

GUY'S HOSPITAL PRIZE DAY.—On July 4th at a garden party given by the governors and medical staff of Guy's Hospital, the prizes and medals were presented to the successful students by the Right Hon. the Earl of Pembroke and Montgomery, G.C.V.O. A large company assembled in the theatre in the new school buildings to witness the ceremony, Mr. Cosmo Bonsor, M.P., being in the chair. After Lord Pembroke had given the awards and addressed the students and guests, Dr. Frederick Taylor moved a vote of thanks to his lordship, which was seconded by Dr. Stevenson. A move was then made to the grounds, where the band of the Scots Guards played a lively selection of melodies. The hospital and school buildings were opened for inspection, and refreshments were served in the quadrangle of the surgical buildings.

THE CONVERSAZIONE AT THE POLYCLINIC.—The conversazione given by the president and council of the Medical Graduates' College and Polyclinic on July 4th was a most successful affair. About 900 medical men were present. The occasion was the inauguration of the museum and an oration by Professor Osler of Baltimore on the Teaching of Practical Medicine. The ceremony of inauguration by the President, Sir William Broadbent, Bart., was witnessed by a crowded assembly who accorded Mr. Hutchinson, after whom the museum is named, a hearty reception. The oration was then delivered in the lecture hall by Professor Osler, who spoke for nearly an hour and whose words elicited much applause. The entire building was then thrown open for inspection and, in addition to demonstrations and exhibitions in the different departments, a good programme of music by the London Orchestral Band enlivened the proceedings.

SOCIETY FOR THE STUDY OF CHILDREN'S DISEASES.—On June 11th a well-attended meeting took place at 20, Hanover-square, London, W., for the purpose of discussing the advisability of founding a society for the study of children's diseases. Dr. Arthur E. Sansom occupied the chair. Mr. Clement Lucas proposed and Dr. Fletcher Beach seconded the following motion—viz., "That in the opinion of this meeting it is advisable to form a society for the purpose of studying the diseases of children." The motion was supported by several speakers, including Dr. E. Cautley and Dr. W. C. Chaffey (Brighton) and Mr. J. Jackson Clarke, Mr. F. Churchill, and Mr. Alfred H. Tubby. After some discussion, during the course of which it was stated that the new society would be largely clinical, and that its meetings would probably be held at the various hospitals in London and in the provinces, Mr. Lucas's motion was carried *nem. con.* A provisional committee, consisting of the following gentlemen, was appointed to draw up rules and to make necessary arrangements:—Mr. Henry G. Armstrong (Wellington College), Dr. Henry Ashby (Manchester), Dr. Wayland O. Chaffey (Brighton), Dr. Arthur Downes (Local Government Board), Mr. Walter Edmunds, Dr. Theodore Fisher (Bristol), Mr. Jonathan Hutchinson, sen., Dr. David B. Lees, Mr. Clement Lucas, Mr. Howard Marsh, Dr. Lewis Marshall (Nottingham), Dr. John McCaw (Belfast), Mr. D'Arcy Power, Dr. Humphry D. Rolleston, Dr. Arthur E. Sansom, Dr. George E. Shuttleworth, Dr. Harold J. Stiles (Edinburgh), Dr. George A. Sutherland, Mr. Alfred H. Tubby, Dr. Dawson Williams, and Mr. Sydney Stephenson (honorary secretary *pro tem.*).

MEDICAL MAGISTRATE.—The Lord Chancellor has appointed Mr. C. H. Johnson, M.R.C.S., a Justice of the Peace for the borough of Basingstoke.

DR. JOHN CROPPER was on June 25th returned at the head of the poll at the Port Skewett (Mon.) School Board election.

CENTENARIANS.—Sarah Priest, who is in her 104th year, applied to the Bath Board of Guardians on June 13th for outdoor relief.—Miss M. A. G. Strachan, who celebrated her 100th birthday in February last, died at College-green, Bristol, on June 18th.

A CURIOUS DENTAL ACCIDENT.—A curious accident is reported in the *Indian Medical Record* of June 6th. A boy, aged nine years, whilst attending a cow was horned by it in the face. The effect of the blow was to drive the left central incisor through the alveolar process into the incisor fossa, from which it was easily removed by means of suitable forceps. The remarkable feature about the accident was that the blow inflicted no other injury in the mouth. The tip of the horn must just have caught the cutting edge of the incisor tooth.

THE NEW JENNY LIND INFIRMARY FOR SICK CHILDREN, NORWICH.—On June 30th the Prince and Princess of Wales were present at the formal opening of this institution. The ceremony was performed by the Princess. This infirmary has been erected as a memorial of the Queen's Diamond Jubilee at a cost, including equipment, of £14,000. For the endowment fund the sum of £10,000 has been subscribed, but £4000 are still required. It may be stated that Mr. Otto Goldschmidt, husband of the late Madame Jenny Lind, and their son and daughter witnessed the interesting ceremony.

AMERICAN ODDFELLOWS AND THE FAITH-HEALERS.—The Supreme Lodge of the Knight of Honour of the United States, which is stated to be the most powerful body of Oddfellows in America, has decided to decline as members all persons associated with the body known as Christian Scientists. Statistics in America prove that the mortality amongst the faith-healing fraternity, who decline the services of medical men, is so high that their membership in a society of persons coöperating for mutual general assistance becomes very undesirable.

SHORTHAND FOR MEDICAL STUDENTS.—The Society of Medical Phonographers offers for competition among registered medical students two prizes, each of the value of £5, one for those studying in England and one for those studying in Scotland or Ireland, for proficiency in the groundwork of phonetic shorthand (phonography). A second prize will be given in each case, consisting of one year's free membership of the society and a selection from its shorthand publications. The examination will be held the first week in November simultaneously in London, Edinburgh, and Dublin, and at any provincial medical school in the United Kingdom at which not fewer than three candidates shall offer themselves. Intending candidates are requested to send in their names at as early a date as possible to the examination secretary (Dr. E. B. Gray, Oxford), who will inform them in due course as to the precise date and place of examination at each centre.

LITERARY INTELLIGENCE.—Messrs. Rebman, Limited, announce the following new books as just issued:—"The International Text-book of Surgery," by British and American authors, in two volumes, edited by A. Pearce Gould, M.S. Lond., F.R.C.S. Eng., of the Middlesex Hospital, and J. Collins Warren, M.D., LL.D., of Harvard Medical School; "An Entirely New Cyclopædia of Practical Medicine and Surgery," in one volume, illustrated, by 70 special contributors, compiled under the editorial supervision of Dr. George M. Gould and Dr. Walter L. Pyle of Philadelphia; "A Text-book of Pharmacology and Therapeutics, or the Action of Drugs in Health and Disease," by Dr. Arthur R. Cushny; "The Gross and Minute Anatomy of the Central Nervous System," by Dr. H. C. Gordinier; "Gould's Year-book of Medicine and Surgery for 1900," in two volumes (Medicine and Surgery).—The same publishers also announce the following for early publication: Vol. II. of Professor

Deaver's work on "Surgical Anatomy"; a new book by Mr. A. Marmaduke Sheild entitled "The Causes, Consequences, and Treatment of Nasal Obstruction"; and "A Treatise on the Theory and Practice of Medicine for Students and Practitioners," by Dr. H. W. Syers of the Great Northern Central Hospital, London.

EDINBURGH UNIVERSITY UNION.—On Friday, June 29th, an interesting dinner was given in the Royal Hotel, Edinburgh, by members of the classes of surgery, midwifery, and clinical surgery of the University of Edinburgh. The dinner was in honour of Mr. H. J. Stiles, Dr. W. Fordyce, and Mr. Bowden, the assistants in the above classes, who were retiring from their respective posts. Mr. J. C. Mitchell, D.Sc., presided over a gathering of more than 100 gentlemen, among whom were Dr. G. A. Gibson, Mr. F. M. Caird, Dr. F. W. N. Haultain, and other colleagues of the guests.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.—The annual general meeting of this association took place on July 3rd at the Café Royal, Regent-street. Dr. J. R. Gabe was elected President for the forthcoming year and Dr. A. L. Achard Vice-president. Dr. E. G. Younger and Dr. Major Greenwood were unanimously re-elected respectively treasurer and honorary secretary. The members and their friends afterwards dined together. After the usual loyal toasts, Mr. Howard Marsh proposed the "Health of the Association." This was responded to by Dr. Greenwood, who said that the association was not in favour of the reciprocity scheme brought before the General Medical Council at its last session, and that although their members claimed the right to register foreign degrees in addition to English qualifications they were strongly opposed to the registration of practitioners possessing only foreign ones. The President proposed "Our Guests," and the toast was responded to by Dr. Vivian Poore and Dr. Gilbart Smith. The Amphion Gleemen, under the direction of Mr. Sidney Marion, gave a selection of glees and songs during the evening.

NEW PHYSICAL LABORATORY FOR OWENS COLLEGE.—The new physical laboratory of Owens College, Manchester, was opened on June 29th by Lord Rayleigh. The building stands opposite to the College in Coupland-street, contains about 40 rooms, and is provided with a great variety of valuable apparatus and machinery. On the roof there is an observatory with a 10-inch telescope. The electro-chemical and electro-technical departments are specially dedicated to the memory of Dr. John Hopkinson. A sum of £23,000 has been laid out upon the building and a further amount of £10,000 is to be spent upon the equipment. The executors of the late Mr. John Harling have given £5000 for the purpose of endowing a research Fellowship. In declaring the building open Lord Rayleigh said that Professor Arthur Schuster who presides over the laboratory was an old friend of his, and that 20 years years ago they worked together on the subject of electrical units. When he was a young man he had not at his disposal anything approaching the facilities for practical and experimental work which were to-day provided in this laboratory.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*Registered Companies and Medical Practice.*

ONE of the clauses of the Companies Bill proposes that it shall be unlawful for a registered company to carry on medical practice. Another says that no such company may carry on the business and use the description of a pharmaceutical chemist or chemist and druggist unless the business is *bonâ fide* conducted by a manager or assistant who is duly registered. Both these clauses were discussed on Tuesday, July 3rd, when the Bill came before the Grand Committee of the House of Commons on Trade. Mr. RITCHIE the Minister in charge of the Bill, suggested that they should be deleted, giving as his opinion that they were not germane to the Bill and that their appearance in it would jeopardise its passage. Sir HENRY FOWLER defended the clauses as both appropriate and necessary, and the majority of the Committee taking the same view determined by 17 to 12 votes to retain both clauses. Mr. MARKS proposed to insert in the medical clause words to the effect that nothing in it should prevent a company from making a contract with a physician or surgeon for services rendered or to be rendered at the request of the company, or from making any contract with any person in respect of the services of a physician or surgeon who is under contract with the company. The ATTORNEY-GENERAL gave the opinion that the amendment was unnecessary, and Mr. Marks did not press it.

*Amendment of the Medical Acts.*

The Bill drafted by the General Medical Council for the amendment of the Medical Acts will be introduced into the House of Commons on Friday, July 13th, by Sir RICHARD JEBB, one of the Members for the University of Cambridge. The Bill deals mainly with the disciplinary powers of the General Medical Council and the medical licensing authorities.

## HOUSE OF COMMONS.

THURSDAY, JUNE 28TH.

*Volunteer Medical Officers.*

Sir HOWARD VINCENT asked the Under-Secretary of State for War if, having regard to the fact that the medical experience of a surgeon in the volunteer force could not be increased by his watching men going through field training for 14 days, the pay and allowances of one medical officer for the whole period of camp could be sanctioned and its allotment be left to the commanding officer among such of the surgeons of a regiment whose practice enabled them to be present on certain days.—Mr. WYNDHAM: The suggestion will be considered.

*Inoculation of the Troops against Enteric Fever.*

Mr. WYNDHAM, replying to a question on this subject, said that the operation was entirely voluntary. There was no idea of making an experiment on the troops going out to South Africa. The credit of suggesting inoculation belonged to the Professor of Pathology at Netley Hospital.

*The St. Pancras Lunacy Scandal.*

Mr. JOHN BURNS asked the President of the Local Government Board whether he had considered the advisability of holding a Local Government Board inquiry into the irregularities committed by the relieving officers of St. Pancras.—Mr. CHAPLIN: I have directed an investigation by the Local Government Board into this matter. Pending the inquiry I have directed a communication to be made to the metropolitan boards of guardians to the effect that in the opinion of the Board such practices are altogether indefensible.

FRIDAY, JUNE 29TH.

*Army Medical Department.*

Sir CHARLES DILKE asked the Under-Secretary of State for War whether the report of the Departmental Committee which was sitting in 1898 on the Re-organisation of the Army Medical Department was presented to Parliament, and if not, whether the portion of it which bore on organisation for war could now be laid before Parliament.—Mr. WYNDHAM replied: The Committee to which the right hon. baronet referred only considered the titles to be given to the corps and to the officers and the command to be exercised by the officers. No question of organisation came before it.

*Sir Walter Foster's Offer to the War Office.*

Sir HENRY FOWLER asked the Under-Secretary of State for War whether, in October last, he received a letter from the honourable Member for Ilkeston (Sir Walter Foster) pointing out that in all probability great loss of life from fever and other maladies, more or less preventable by careful sanitary work, was likely to occur in the South African campaign, and suggesting the appointment of a small sanitary commission, or a commissioner and assistants, to proceed to South Africa to assist the army medical officers in preventing the dangers referred to; whether the honourable Member offered to place his services and his experience as a physician and as secretary of the Local Government Board during the last invasion of cholera, at the disposal of the War Office in an unpaid capacity; and whether the suggestion and offer were declined by the Secretary of State on the ground that the need of special assistance was not the same in sanitary matters as in surgical operations.—Mr. WYNDHAM replied: Yes, sir; the facts are as stated. Army surgeons are not in constant practice as operators, and therefore the Secretary of State was very glad to avail himself of the patriotic offers made by Sir W. Mac Cormac, Mr. Treves, and other specially skilled surgeons. But army medical officers have special training in sanitation of camps and the management of diseases incidental to field service and abundant opportunities of obtaining experience in these matters. It did not, therefore, appear that there was any occasion for the appointment of such a sanitary commission as the hon. Member proposed.

*Strength of the Medical Staff in South Africa.*

Mr. WYNDHAM, replying to questions on this subject, said that for each increase of the force in South Africa a proportionate increase of medical staff and medical stores had been made. There were now in South Africa, according to their latest information, 466 army medical officers and 440 civilian surgeons, 566 female nurses, and 5668 male nurses and orderlies. These did not include doctors and nurses engaged in South Africa. The supply of beds was on June 16th 5000 in Natal and 13,600 in Cape Colony and other parts, total 18,600 beds in South Africa.

*Debate on the Medical Arrangements in South Africa.*

The House devoted nearly eight hours of this sitting to a debate on the medical arrangements in South Africa which had been impugned by Mr. Burdett-Coutts in a series of articles in the *Times* and had been the subject of question and answer across the floor of the House at several previous sittings. The debate took place in Committee of Supply, the Government putting up for the purpose a purely nominal supplementary vote for the Army Medical Department. The speeches delivered were too numerous and dealt too much with matters of detail to be reported or even to be summarised in this column and no doubt our readers will have seen reports of them in the

day press. Before the debate began Members had in their hands copies of a telegram from Lord Roberts in which his lordship suggested that a small committee should be deputed to proceed to South Africa in order to inquire into and furnish a full report on the working of the medical arrangements throughout the war, and they had before them the promise of Mr. Balfour that the Government would adopt this suggestion.

MONDAY, JULY 2ND.

*Inoculation against Typhoid Fever.*

Mr. JOSEPH A. PEASE asked the Under-Secretary of State for War whether the medical expert at Netley Hospital who recommended the inoculation with so-called anti-typhoid serum of troops sent to South Africa had sold serum to the Government; if so, how many doses were purchased from him, and at what price; and whether the doctor had pecuniarily profited by the sale of serum.—Mr. WYNDHAM: No, sir, there is no pecuniary profit.—Mr. PEASE: Were any doses sold?—Mr. WYNDHAM: My information is that there was no sale or profit to anybody concerned.

*Outfit Allowance for the Royal Army Medical Corps.*

Mr. MACNEILL asked the Financial Secretary to the War Office would he explain why, when all officers of the Reserve rejoining under Paragraph 483, Clause C, of the Royal Pay Warrant (whether ordered on active service or otherwise), had been granted an outfit allowance of £100 to cover the expense of providing themselves with the necessary uniform, exception had alone been made in the case of officers of the Royal Army Medical Corps, and would he say whether the word "officer," used in Part I. of the Royal Warrant, included medical as well as officers of any other corps.—Mr. POWELL WILLIAMS: Outfit allowance will be granted in these cases.

*Medical Men and the Housing of the Working Classes.*

Sir WALTER FOSTER during the report stage of the Housing of the Working Classes Act (1890) Amendment Bill moved to insert in the Bill the following new clause—viz.: 1. "It shall be the duty of the medical officer of health of every rural sanitary district to represent to the local authority of that district any parish or other area within that district where danger arises to the health of the inhabitants of such parish or area from the insufficiency or unwholesomeness of the existing supply of lodging-houses for the working-classes. 2. If in any rural sanitary district any four or more householders living in or near to any parish or other area in such district complain in writing to the medical officer of health of that district that danger arises to the health of the inhabitants of such parish or area or of such district from the insufficiency or unwholesomeness of the existing supply of lodging-houses for the working-classes in such parish or area he shall forthwith inspect the same and transmit to the local authority the said complaint and his opinion thereon, and if he is of opinion that danger does arise as aforesaid shall represent such parish or area to the local authority, but the absence of any such complaint shall not excuse him from the duty of making a representation under sub-section one of this section when necessary. 3. If within three months after receiving the said complaint and opinion or representation of the medical officer the local authority declines or neglects to take any proceedings to put this part of the Act in force, the householders who signed such complaint may petition the Local Government Board for an inquiry, and the said Board after causing an inquiry to be held may order the local authority to proceed under this part of this Act, and such order shall be binding on the local authority." Sir Walter Foster said he was anxious that there should be some means of calling the attention of the local authority to their neglect of the intentions of the Legislature and he could not think of any more suitable means than the medical officer of health who was familiar with the conditions and circumstances of the locality. With regard to the third sub-section of the clause he was aware that there might be objection to the interference of the Local Government Board and therefore he would be prepared to substitute the County Council.—Mr. CHAPLIN, the Minister in charge of the Bill, intimated that he could not accept the clause. He was advised, and he was satisfied, that much that the hon. Member had in contemplation could be done under the existing law. He attached great importance to the medical officer of health, but he did not think the position of that officer would be improved by this clause. The position of the medical officer of health would have to be considered some day. To make him really efficient he would have to be put in quite a different position from his present position, but the thing would require to be done in a Bill for the amendment of the Public Health Acts; he did not think it could be dealt with in this Bill. With regard to the third sub-section, he had considered the matter very carefully, and he had come to the conclusion that if pressure of this kind was to be brought to bear it should be brought to bear through the County Council and not through the Local Government Board. The former was a representative body and it had the great advantage of local knowledge.—After some further discussion Sir WALTER FOSTER withdrew his proposed new clause, and there was inserted in the Bill a clause empowering the County Council to take action in cases where the rural council had been guilty of default.

## PROPOSED EXEMPTION OF HOSPITALS FROM LOCAL RATES.

EVIDENCE BEFORE THE SELECT COMMITTEE.

The Select Committee of the House of Commons appointed to inquire into the proposed exemption from local rates of hospitals and institutions for the education and treatment of idiots and imbeciles met again on Friday, June 29th, with Mr. T. W. RUSSELL, Parliamentary Secretary to the Local Government Board, in the chair, and proceeded with the examination of witnesses.

Sir WILLIAM HART DYKE, M.P. for the Dartford division of Kent, explained that owing presumably to the salubrity of the district of Dartford there had been planted there a large number of charitable institutions, some supported wholly by voluntary contributions and others rate-aided, proceeding directly or indirectly from Acts of Parliament, and he submitted that in the matter of rating a clear distinction should be drawn between institutions planted in such a district on behalf of the inhabitants of a distant community and supported by these inhabitants and institutions designed to meet purely local wants. At the present moment contracts were out for the construction of a small-pox hospital in the district which was to cost over £200,000. If such an institution were exempted from rates he thought the locality would have a distinct grievance and he would remind the Committee that institutions of this description were a nuisance and a detriment to the prosperity of a district. Already they had in the district institutions metropolitan in character and object, such as a home for waifs and strays, convalescent homes, an asylum for idiots, and the City of London Asylum. He thought it would be a great hardship to the Isle of Wight if the Hospital for Consumption at Ventnor were exempted from local rates, seeing that the institution was designed for the use of patients from a distance. In the case of the cottage hospital at Dartford, a local institution, no rates were paid. He would not like to leave the rating of hospitals to the discretion of local authorities, because the result would be uncertain; he would rather have the matter settled once and for all by Parliament. He frankly admitted that the case was not free from difficulty, especially when they had to deal with institutions which were both local and general in their character.

Mr. BARTON, Commissioner of Valuation in Ireland, called in connexion with the evidence given by Mr. Manders of the Irish Office, gave an account of the system of valuation in Ireland. He explained that there were no local valuation committees in Ireland, the whole valuation work of the country being done by his department. He cited the Acts of Parliament which govern that work and which exempt from local rates institutions used exclusively for scientific and charitable purposes. In Dublin, where there were many hospitals, some with paying beds, none paid rates, and the corporation in addition contributed £10,000 or £11,000 every year towards the cost of the maintenance of the hospitals. There was a feeling in Dublin that exemptions had been carried too far and probably some change would be made in the future. He was now engaged in the revision of the valuation of Belfast, and he proposed, subject of course to the appeal of the courts which was always open to those concerned, to make a change in his procedure. He proposed in the case of hospitals with paying beds to make two valuations—one in respect of the paying beds and the other in respect of the free beds. The latter would be free from rates, while the former would have to pay a certain contribution. If he found a case where a hospital with paying beds had a deficit on its working he should in such circumstances only make a nominal charge. This would be an entirely new departure in Ireland. He would value paying beds on a much lower scale than he would value ordinary houses or shops.

The Marquis of BRISTOL gave evidence with regard to the claim for exemption made by the Eastern Counties Asylum for Idiots and Imbeciles, Colchester. He complained of the manner in which the assessment of the asylum had been raised by the local authority, and said he wished to see this institution and similar institutions exempted by Act of Parliament and not left at the mercy of local authorities. This being his view he did not think that a discretionary power vested in the local authorities would meet the case. He considered that such institutions should be free from the school rate and the poor rate, but that they might be called upon to contribute towards the district rate from which they derived some benefit.

Mr. JOHN J. C. TURNER, superintendent and secretary of the asylum, also gave evidence. He stated that institutions for the education, training, and care of idiots and imbeciles had been established by private benevolence and were really voluntary schools for imbecile children as well as homes for adult idiots. They were supported by voluntary contributions and were managed by committees of noblemen and gentlemen who gave their services gratuitously. These institutions were registered under Act 49 & 50 Vict., cap. 25, and existed for the benefit of the poorer classes whose imbecile children if not taken care of and educated therein would in many instances have to be supported out of the poor rates. Such institutions also received cases upon various rates of payment, and in four of these institutions cases were likewise received from boards of guardians upon payment at rates varying from 10*s.* 6*d.* a week. Any profit that might accrue either from private payment or boards of guardian cases went towards the support of free cases. The employés in these institutions, from the superintendent downwards, were all paid by salary, and were not in any way dependent on any profit that might be made from the reception of payment cases. Such institutions received no subsidy from the Treasury or any educational grant, and were heavily handicapped by having to pay local rates, especially school board and poor rates, from which they derived no benefit. Witness handed in the following table of figures with reference to the five institutions in England and the one in Scotland, viz.:—

| Institution. | No. of beds. | Assessment. | School Board and poor-rates for 1899. | District rates for 1899. |
|---|---|---|---|---|
| Earlswood, Surrey ... ... | 700 | £2973 | £166 6 8 | £426 18 10 |
| Royal Albert Asylum, Lancaster ... ... ... ... | 640 | 1333 | 127 0 2 | 10 17 9 |
| Eastern Counties Asylum, Colchester ... ... ... ... | 235 | 600 | 129 17 3 | 91 16 2 |
| Western Counties Asylum, Starcross ... ... ... ... | 250 | 501 | 79 7 3 | 6 1 9 |
| Midland Counties Asylum, Knowle... ... ... ... ... | 72 | 216 | 23 15 3 | 11 16 8 |
| Scottish National Institution, Larbert ... ... ... | 280 | 508 | 56 9 4 | 85 13 11 |

Mr. HAYWARD, clerk to the Dartford Board of Guardians, was the last witness examined and gave evidence in corroboration of Sir William Hart Dyke. He stipulated that there should be no exemption unless there was local benefit.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADYE, WILLIAM JOHN ALEXANDER, M.R.C.S., L.S.A., has been appointed Medical Officer to the Bradford-on-Avon Workhouse by the Bradford-on-Avon (Gloucestershire) Board of Guardians.

BENNETT, JOHN, M.B., B.Ch. Irel., has been appointed Medical Officer for the Borough of Hyde, Cheshire.

CHILCOTT, E. S., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health by the Itchen Urban District Council.

COOKSON, A. N., M.R.C.S., has been re-appointed Medical Officer of Health for the Nuneaton Sanitary District, Nuneaton Union.

DIXON, A., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer for the Eighth Sanitary District of the Preston Union.

EMMETT, RICHARD, M.R.C.S., L.R.C.P., L.S.A., has been appointed Medical Officer to the Portsmouth Post Office, vice F. W. Way, retired.

FERGUSON, R. B., M.D. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the New Southgate District.

FLEMMING, CHARLES E. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the No. 1 District by the Bradford-on-Avon Board of Guardians.

FRASER, P., M.D. Edin., has been re-appointed Medical Officer of Health for Carnarvonshire.

GARNER, J. E., M.D. Aberd., has been re-appointed Medical Officer for the First Sanitary District of the Preston Union.

GILLETT, J. F., M.B., B.C. Camb., has been appointed Medical Officer for the Second Sanitary District of the Andover Union, vice L. W. Oliver, resigned.

GIMSON, K.C., M.B., B.C. Camb., has been appointed Medical Officer to the Urban District Council, Witham.

HAMILTON, D. L., L.R.C.P., F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Timsbury Sanitary District of the Clutton Union, vice F. Woods, resigned.

HANNAH, E. W. ST. CLAIR, M.B., Ch.B. Aberd., has been appointed House Surgeon to the Kent County Ophthalmic Hospital, Maidstone, vice Percy E. Turner, resigned.

HARGREAVES, J. A., M.B., C.M. Aberd., has been re-appointed Medical Officer of Health by the Wetherby Rural District Council.

LEIGH, WILLIAM WATKIN, L.R.C.P., L.M. Edin., M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Llanvabon District by the Pontypridd Board of Guardians.

LIMRICK, W. S., L.R.C.P., L.R.C.S. Edin., has been re-appointed Medical Officer of Health for the Great Crosby Urban Sanitary District.

MACKEITH, J. M.B., C.M. Glasg., has been appointed Medical Officer to the Exeter Dispensary.

MARSHALL, C. DEVEREUX, F.R.C.S., has been appointed Assistant Surgeon to the Royal London Ophthalmic Hospital, City-road (Moorfields).

MOXON, HENRY J., L.D.S., R.C.S. Irel., has been appointed Dental Surgeon to the County Council's School at Feltham.

PICKARD, RANSOME, M.S., M.D. Lond., has been appointed Medical Officer to the Exeter Dispensary.

PLATT, J. E., M.S. Lond., F.R.C.S. Eng., M.D. Lond., has been appointed an Honorary Assistant Surgeon to the Royal Infirmary, Manchester, vice G. A. Wright.

SMITH, G. H., M.B., C.M. Aberd., has been appointed Medical Officer of the Workhouse, the Bucklow Union, vice T. J. Appleby, resigned.

THYNE, T., M.D. Edin., F.R.C.S. Eng., has been re-appointed Medical Officer for the Mill Corner and Cockfosters Sanitary District of the Parish of Enfield.

WRIGHT, G. A., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Royal Infirmary, Manchester, in succession to Thomas Jones, deceased.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 per annum with board and residence.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—House Surgeon. Salary £120 per annum, with rooms and attendance (not board), or £80 per annum, with board.

CARDIFF INFIRMARY.—Assistant House Physician for six months. Salary at the rate of £75 per annum, with board, washing, and apartments.

CENTRAL LONDON SICK ASYLUM DISTRICT HOSPITAL, Cleveland-street, W.—Medical Officer as Locum Tenens. Salary £3 3s. weekly, with board, lodging, and washing.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Resident Medical Officer for twelve months. Salary £60 per annum. Also Registrar. Annual re-appointment, but tenable for three years. Honorarium 20 guineas per annum.

CHESTER GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with residence and maintenance in the house.

CLAYTON HOSPITAL AND WAKEFIELD GENERAL DISPENSARY.—Junior House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

CORNWALL COUNTY ASYLUM, Bodmin.—Locum Tenens for one month or more. Terms £3 3s. and all found, with second class return fare.

CORPORATION OF BIRMINGHAM.—CITY HOSPITAL., Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer as Locum Tenens for a few weeks. Salary £3 3s. per week, with furnished apartments and board.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £80, with board, residence, and washing.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for six months. Salary £30 for that period, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon for twelve months. Salary of House Surgeon £100 per annum. Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising to £160 by annual increments of £10, with board, laundry, and attendance.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for twelve months, unmarried. Salary £60, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Senior House Physician for six months. Salary at the rate of £60 per annum, with board, lodging, and washing in the Hospital.

HOLLOWAY SANATORIUM HOSPITAL FOR THE INSANE, Virginia Water, Surrey.—Junior Assistant Medical Officer. Salary £100 per annum, rising £20 annually to £200, with board, lodging, washing, and attendance.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer at the Asylum, Willerby. Salary £120 per annum, rising £5 per annum to £150, with board, apartments, and washing. Applications to the Clerk to the Committee of Visitors, Town Hall, Hull.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Four Assistant Surgeons, unmarried. Salary £100 per annum, with board and apartments.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80, with board, lodging, and washing.

LONDON HOSPITAL, Whitechapel, E.—Assistant Surgeon.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the Infirmary.

METROPOLITAN ASYLUMS BOARD.—Fourth Assistant Medical Officer at the Asylum at Darenth, near Dartford, Kent, unmarried. Salary £150 per annum, rising conditionally to £170, with board, lodging, attendance, and washing subject to statutory deduction. Apply to the Office of the Board, Victoria Embankment, London, E.C.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Soho-square, London.—Physician to Out-patients.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Physician for six months. Salary at the rate of £80 per annum, with board, residence, and laundry. Also Resident Medical Officer for twelve months. Salary £120, with board, residence, and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH RIDING ASYLUM, Clifton, York.—Junior Assistant Medical Officer. Salary £125, with board, lodging, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—A Senior and a Junior House Surgeon for one year. Salary £100 and £75 per annum respectively, with board, residence, and washing.

PARISH OF BIRMINGHAM WORKHOUSE INFIRMARY.—Assistant Resident Medical Officer at the Workhouse Infirmary, for one year. Salary £100, with furnished apartments, rations (no alcoholic liquors), coals, gas, laundry, and attendance. Apply to the Clerk to the Guardians, Parish Offices, Edmund-street, Birmingham.

PECKHAM HOUSE ASYLUM, S.E.—Locum Tenens for two months.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, with furnished apartments in the Asylum, board, and washing. Applications to the Clerk to the Visiting Committee, Municipal Buildings, Plymouth.

PONTEFRACT GENERAL DISPENSARY AND INFIRMARY.—Resident Medical Officer, unmarried. Salary £150 per annum, with furnished rooms, fire, lights, and attendance.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £90 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—House Surgeon and Registrar for six months, unmarried. Salary at the rate of £100 per annum, with residence and partial board.

RUBERY-HILL ASYLUM FOR THE CITY OF BIRMINGHAM, Barnt-green, Worcestershire.—Senior Assistant Medical Officer.

ST. MARY'S CHILDREN'S HOSPITAL, Plaistow, E.—Assistant Resident Medical Officer for six months. Salary at the rate of £80 per annum, with board, residence, laundry, &c.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, Paddington, London.—Demonstrator of Physiology. Salary £150.

ST. MUNGO'S COLLEGE, GLASGOW, FACULTY OF MEDICINE.—Bellahouston Chair of Anatomy. Emoluments £300 per annum.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—House Surgeon for twelve months. Salary £90, with residence, board, and washing. Also Assistant House Surgeon for six months. Salary at the rate of £75, with residence, board, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

SWANSEA GENERAL AND EYE HOSPITAL.—House Physician for twelve months. Salary £50 per annum, with board, apartments, washing, and attendance.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing. In lieu of stimulants or mineral waters £6 per annum will be given.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy of Certifying Surgeon under the Factory Acts at Saddleworth in the West Riding of the County of York.

UNIVERSITY COLLEGE, Cardiff.—Demonstrator and Assistant Lecturer in Anatomy, and Demonstrator and Assistant Lecturer in Physiology. Salary in each case, £120.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £80, rising £10 annually to £100, with board, residence, and washing.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £130, rising £10 a year (if approved) to £160, with board (no beer or wine), residence, attendance, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—Assistant House Surgeon, for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £110 a year, with board, lodging, and attendance

# Births, Marriages, and Deaths.

## BIRTHS.

BUCKLEY.—On June 27th, at Gillott-road, Edgbaston, Birmingham, the wife of J. R. Buckley, M.B. Lond., M.R.C.S., of a son.

CUTTING.—On June 28th, at Chetwynd House, Stalham, Norfolk, the wife of Ernest Buxton Cutting, M.R.C.S., L.R.C.P., of a son.

DEAN.—On June 24th, at Queen-street, Lancaster, the wife of Charles William Dean, F.R.C.S.E., of a daughter.

DOUGLAS.—On June 28th, the wife of A. R. Douglas, L.R.C.P., L.R.C.S., Resident Medical Officer Royal Albert Asylum, Lancaster, of a son.

GLOVER.—On June 27th, at 17, Belsize-park, Hampstead, the wife of Lewis G. Glover, M.D., of a daughter.

HARDING.—On June 22nd, at Whittlesea, Cambs, the wife of C. H. Harding, M.R.C.S., L.R.C.P. Lond., of a son.

HUTCHINSON.—On July 1st, at Loneside, Haslemere, Surrey, the wife of R. J. Hutchinson, M.R.C.S., L.R.C.P., of a daughter.

JACKSON.—On July 1st, at Grove Lodge, Winchmore-hill, Middlesex, the wife of John W. Jackson, L.R.C.P., M.R.C.S., of a daughter.

MORETON.—On June 23th, at Dunsley, Cotham-park, Bristol, the wife of T. W. E. Moreton, B.A. Cantab., M.R.C.S., L.R.C.P., of Tarvin, Chester, of a son.

NEWBOLT.—July 2nd, at 42, Catharine-street, Liverpool, the wife of George Palmerston Newbolt, M.B., F.R.C.S., of a daughter.

## MARRIAGES.

ARNOTT—HEWLETT.—On June 27th, at St. George's (Parish) Church, Beckenham, by the Rev. Henry Arnott, F.R.C.S. Eng., rector (father of the bridegroom), assisted by the Rev. Chas. Green, vicar of St. Paul's, New Beckenham, Neil, elder son of the Rev. H. Arnott, to Evelyn Mary, eldest daughter of John C. Hewlett, Esq., F.C.S., of Hillside House, Beckenham, Kent, and 40, 41, and 42, Charlotte-street, London, E.C.

ROUNTREE—VAILE.—On June 30th, at St. Peter's, Belsize-park, William Augustine Rountree, M.B., B.Ch., of Haverstock-hill, to Mary Collett (Collie), eldest daughter of T. H. Vaile, of Belsize Park-gardens, Hampstead.

TUKE—FRASER.—At the Roxburghe Hotel, Edinburgh, on 27th June, by the Very Rev. Archibald Scott, D.D., St. George's, and the Rev. Robert Stevenson, M.A., Dunfermline Abbey, Alan L. S. Tuke, M.B., C.M., youngest son of Sir John Batty Tuke, M.P., to Dorothy, only surviving child of the late William Fraser, Inverkeithing, Fife.

## DEATHS.

GOULD.—At Whiteknight's Park, Reading, on July 1st, after a very short illness, Catherine Alfreda, the eldest and dearly loved daughter of Alfred Pearce Gould, of 10, Queen Anne-street, London, aged 20.

EWBANK.—On July 2nd, at 5, Berkeley-place, Cheltenham, Henry Ewbank, M.R.C.S., aged 44 years.

LEECH.—On July 2nd, at his residence, Elm House, Whalley Range, in his 61st year, Daniel John Leech, M.D., D.Sc., F.R.C.P., Professor of Materia Medica and Therapeutics in the Owens College, Manchester.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE HONOUR AND DIGNITY OF THE MEDICAL PROFESSION.

A CORRESPONDENT writes:—"Notwithstanding the increasing age of the candidates for the medical profession, the increased cost of their education, and the length of time required to obtain a legal qualification, are we really at bottom—socially, professionally, and otherwise—superior to our predecessors in the healing art? There has been far too much nonsense preached at the annual introductory lectures at our medical schools—that we should 'look for our reward hereafter'; that we should 'retrace our steps at the very threshold if we are seeking pecuniary reward,' &c., &c., *ad nauseam*. But after all is said and done, what is a man in any profession or calling, including medicine and even the Church, valued at if he is poor? Is the money, honourably earned, no test whatever of success? Has not many a brilliant man gone down into a pauper's grave? Does anyone shed a tear of regret for the poor, dead or living? Possibly a few may do so, but their tears can be counted and they do not often scald.

"The recent revelations respecting the lunacy scandals in the parish of St. Paneras may come as a surprise, and possibly as a grief, to some. But the foul ulcer is not a new one; it is chronic—shall I say 'spreading'?—for the same scandal has existed for over 30 years in more than one parish in this metropolis to my own certain knowledge, and how many years previously I will not venture to suggest. The entire subject is a most unsavoury one, but it is best not to attempt to hide it or hush it up lest worse befall us and we as a profession have to pass through the same painful portals that another profession—that of the law—is passing through at the present time. It is time carefully to inquire into the management of our own happy home and also into the conduct of some of our own more unworthy brethren ere the bud becomes the decayed and drooping flower. Surely, there should be some kind of court of preliminary inquiry into the conduct and bearing of certain members of our profession before the serious question arises of removing a name from the Medical Register.

"It is not always the poor man who is to blame, but frequently it is the one who ought to be able to keep up the honour and dignity of the profession and who does know better who is the greater offender. True nobility is not a monopoly of the rich. The sharing of fees with relieving officers, the keepers of licensed establishment for the reception of lunatics, drunkards, &c., coroners' officers, policemen, and nurses is not a very dignified or desirable position for a medical man. Even coroners' officers are painted with the same brush; and some time ago one of these men had the audacity to offer me only a part of my legal fee, and at the same time made the excuse that Dr. So-and-So always allowed a discount of 25 per cent. Was this bribe given in order to secure the officer sending cases to this particular doctor? If so the donor was singularly unfortunate as he was only opening the door to bribery, corruption, and public scandal. I once knew of a nurse who retained 5*s.* from a fee of 5 guineas handed to her to be given to a doctor for attending a lady in her confinement. The doctor, who was one of the old school, said nothing to the nurse, but returned at once to the patient and inquired whether she had not made a mistake of 5*s.* in his fee. Again, to come to more recent times, since the General Medical Council have made some weak pronouncement respecting medical men attending certain medical aid societies I know of cases of medical men living in large houses and driving their own carriages who have resigned a few of their more doubtful appointments as medical officers to medical aid societies and the like, fearing the possibility of their conduct reaching the ears of the General Medical Council. This fear is most wholesome, for most offenders of this class are arrant cowards, but at the same time some of these nervous ones have conveyed to the rejected clubites that 'quite privately, you know, I shall be pleased to see you at my surgery for one shilling.' I should like to know why little children such as 'Juvenile Foresters,' 'Juvenile Oddfellows,' and the like should be attended for half the usual fees, such as 6*d.* a quarter and even less? Is the life of a little child only of half the value of that of the parent? Is the time or skill, or even the medicine, of less value than that which is doled out to the parents. I have known the case of two little children living under the same roof and belonging to the same parents one of whom was a Juvenile Forester and the other a Juvenile Oddfellow, and these two little mites have been receiving the distinguished attention of two doubly qualified physicians and surgeons of our Royal Colleges, who have been only too delighted to drive up to their humble cottage with horse and carriage, coachman, cockade, and fur cape and cuffs included, and all for one halfpenny a week. There was a time when we never received less than 1*d.* Need anyone be surprised how these little children will respect us in the years to come.

"Take the case of life-insurance offices. There was a time when no medical man of repute would take a fee of less than one guinea for

examining the life of an insurer, but now that industrial offices accept lives for small sums of insurance these offices plead that they cannot pay such large fees, and in this way our position is assailed and our fees are cut down and undermined. Is the time required of less value when examining the poor? Is there less need of care on our part? Is the fee so small that there is no longer any need for us jealously to defend our written diagnosis, no longer any necessity to defend the honour and dignity of the profession? We really have only ourselves to thank for this gradual, but certain undermining, of our nobility. If the lives of the poor are to be insured, by all means let them be so, but not at the expense of the medical profession. Let these offices take such small sums and lives at their own risk, or else pay some of the enormous funds which are at their disposal to some of our poorer brethren who are trying so hard to keep the wolf from the door, but who frequently find themselves quite unable to do so in consequence of the mean trade-like competition within our ranks."

## A GOOD BICYCLE SADDLE.

*To the Editors of* THE LANCET.

SIRS,—Can you or any of your correspondents tell me the name of a good anatomical saddle for a bicycle where a proper support is given to the buttocks of a rider in the upright (non-stooping) position and where at the same time the thighs are not apt to get chafed?

I am, Sirs, yours faithfully,

June 25th, 1900. B.

## SOME OF THE FACTORS LEADING TO A RELATIVELY HIGH PERCENTAGE OF MALE OFFSPRING.

*To the Editors of* THE LANCET.

SIRS,—After studying more than 300 marriages with the object of discovering some of the conditions likely to give rise to a relatively high percentage of boys I have come to some conclusions which I now give for what they are worth. Possibly some of your readers may have time and opportunity to work out a still larger number of cases and to compare their results with mine. It seems to me that this should not be regarded as a mere matter for curiosity, but as having real practical bearings. I think that if my rules are followed we shall hear less often the complaint of paterfamilias that he has "seven daughters who prophesy" and, alas, not one boy! The conditions thrown into rules are:—1. Do not marry the eldest daughter of a family but rather the youngest. There is a progressive increase of boy-producing power from the eldest up to the youngest daughter. 2. Do not marry one whose age differs much from your own; and do not marry much under or over 30. 3. Do not marry a widow. 4. Do not refuse to marry a cousin or an only daughter. No doubt there are other factors to be taken into account, but here I think we have some rather important ones. I am, Sirs, yours faithfully,

Sutton, June 29th, 1900. GERALD S. WALTON, M.B., C.M. Edin.

## AN APPEAL TO BROTHER PRACTITIONERS.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers suggest a line of treatment likely to be of use to me? For the last few months I have at times suffered from rheumatism in my right hip-joint, aggravated by long walks or damp weather. I am 59 years old, very temperate, always had good health, weight 14 stone, urine normal. Being fond of shooting I do not want to become an arthritic cripple. Would cider be harmful? I have given it in cases of atonic gout with great benefit.

I am, Sirs, your faithfully,

July 3rd 1900 M.D.

## THE TREATMENT OF MORPHINOMANIA.

*To the Editors of* THE LANCET.

SIRS,—A lay paper recently published a statement that Dr. O. Emmerich of Baden-Baden had discovered a drug useful in morphinomania. Can you or your readers give me any information or refer me to papers written by him?

I am, Sirs, yours faithfully,

ROGER N. GOODMAN, M.D. Cantab.

Kingston-on-Thames, July 1st, 1900.

## SHAM DIPLOMAS IN THE UNITED STATES.

WE are accustomed from time to time to see accounts of inquests held upon the bodies of those who have died while under the care of quacks who pose as "qualified" and put after their names such letters as F.C.S.M. or M.B., the latter letters signifying not Medicinæ Baccalaureus but Medical Botanist. This, of course, is the explanation given by the quack. Only, naturally enough, his dupes think the letters refer to the genuine degree and naturally, also, that is what the quack counts upon. In the United States, however, the sham diploma factory flourishes to a greater extent than here, and we rejoice to see that a raid has at length been made upon such an institution which had its local habitation in Chicago. Its late title is the Metropolitan Medical College, and its history, according to the *Chicago Daily Tribune*, is as follows:—The institution was organised in 1895 under the name of the Illinois Health University. The charter for this name was revoked by the board two years later. Immediately the college was re-organised by the same owners under the name of the Independent Medical College. A revocation of this charter in December last resulted in the college being started anew under the name of the Metropolitan Medical College. Finding that the promoters of the institution had seven charters remaining under which the institution could be conducted, Attorney John A. Barnes, counsel for the board, interested the Post-office authorities in the prosecution. The charge upon which the proprietors have been arrested is that of using the mails to defraud. They sold worthless diplomas through the post for sums varying from 25 dollars to 100 dollars, and some of the victims gave evidence in the police-court. We are afraid that a charge of "using the mails to defraud" would not stand on this side of the Atlantic, but if only it could be made to do so there might be some chance of many thieves being brought to book. To say nothing of the innumerable prospectuses of bubble companies there are the circulars of the "Free portrait" swindlers, of quacks such as "Dr." Bell, and the specious promises of the money-lending fraternity. The number of fools is incalculable, but the swindler with brains should not be assisted by the Government in his nefarious trade.

## "THE CASE OF THE LATE MR. ALFRED BOURNE."

*To the Editors of* THE LANCET.

SIRS,—The following is the third list of subscriptions.

I am, Sirs, yours faithfully,

Northallerton, June 26th, 1900. J. A. HUTCHINSON.

| | £ | s. | d. |
|---|---|---|---|
| Rev. R. J. Steele (Harlsey) | 1 | 0 | 0 |
| Mrs. Jefferson (Northallerton) | 0 | 10 | 0 |
| Miss J. Yeoman (Northallerton) | 1 | 0 | 0 |
| Mr. C. A. Bell (Osmotherley) | 0 | 10 | 0 |
| Dr. J. H. Buchanan (Thirsk) | 1 | 0 | 0 |
| Dr. S. Yeoman (Prestwich) | 2 | 2 | 0 |
| Dr. W. D. Arnison (Newcastle) | 1 | 1 | 0 |
| Mr. C. K. Morris (Blackheath) | 5 | 5 | 0 |
| Mr. J. Walker (Harlsey) | 0 | 10 | 0 |
| Dr. Gibb (Newcastle) | 0 | 10 | 0 |
| Mr. J. Birkmyre (Port Glasgow) | 1 | 1 | 0 |
| Mr. A. M. Morris (Wallington) | 1 | 1 | 0 |
| Mrs. A. de L. Long (Crosby Cote) | 5 | 0 | 0 |
| Professor Brady (Newcastle) | 1 | 0 | 0 |
| Mr. C. Evers (Newbiggin) | 0 | 10 | 6 |
| Sir A. Y. Lawson (Leeds) | 1 | 0 | 0 |
| Miss G. Atkinson (Northallerton) | 0 | 10 | 0 |
| The Misses Yeoman (Osmotherley) | 2 | 2 | 0 |

## THE OPEN-AIR TREATMENT OF PHTHISIS.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers tell me where a servant girl can be treated for early phthisis by the open-air method? Her mistress will pay a reasonable figure weekly for her.

I am, Sirs, yours faithfully,

July 3rd, 1900. J. B.

*** A list of institutions was given in THE LANCET of Sept. 9th (p. 724) and 23rd (p. 851), 1899.—ED. L.

## "PULEX IRRITANS."

*To the Editors of* THE LANCET.

SIRS,—If "C. M. H." will freely spread dry chloride of lime on the floors and then order the floors to be washed with the scrubbing-brush in the ordinary way, he will not only whiten the floors, but will also completely rout the enemy, which will not, like De Wet, renew the attack. I am, Sirs, yours faithfully,

Holland Park Avenue, W., July 4th, 1900. ALFRED E. BARRETT.

*Pathology.*—Full information with regard to post-graduate study in foreign universities will be found in the Students' Number of THE LANCET for 1899. Foreign degrees are as a rule granted to medical men holding English qualifications only after they have gone through the full foreign curriculum. Some of the foreign universities admit the use of interpreters, but, practically speaking, a knowledge of the language is—and we think should be—essential. Some of the university towns are much more economical to live in than others, but the allowance is a larger one than the foreign student enjoys as a rule. If our correspondent can live as a native he will be well off, but to do this he must have a working knowledge of the language.

*Expectant.*—There is no rule. The purchaser, we think, generally pays, but the matter is one for mutual arrangement between the parties.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

**During the week marked copies of the following newspapers have been received:** *Stalybridge Herald, Sporting and Dramatic News (London), Bullionist, South Wales Daily News, Birmingham Daily Post, Liverpool Daily Post, Jersey Express, East Anglian Daily Times, Newcastle Daily Chronicle, Manchester Guardian, Glasgow Herald, Cornishman, Leeds Mercury, Nottingham Daily Guardian, Birkenhead News, Cheltenham Mercury, Times of India, Pioneer Mail, Architect, Builder, Citizen, Scotsman, Bristol Mercury, Yorkshire Post, Brighton Gazette, Sanitary Record, Medical Review, Madras Standard, Modern Society, Chester Courant, Newbury Weekly News, City Press, Lincolnshire Chronicle, Reading Mercury, Oban*

*Times, Jewish Chronicle, Hertfordshire Mercury, Local Government Journal, Surrey Advertiser, Surrey Gazette, Hereford Mercury, Weekly Free Press and Aberdeen Herald, Wiltshire Times, Worcester Herald, Suffolk Chronicle, Peterborough Express, Keighley Herald, Dover Standard, Gloucester Journal, Manchester Courier, Admiralty and Horse Guards Gazette, People (London), Bolton Journal, New Age (London), Kent County Examiner, &c., &c.*

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, July 5th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. Shade. | Min. Temp | Wet Bulb | Dry Bulb | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| June 29 | 29·95 | S.W. | ... | 121 | 77 | 57 | 59 | 62 | Hazy |
| ,, 30 | 29·73 | S.W. | 0·26 | 111 | 68 | 55 | 56 | 57 | Cloudy |
| July 1 | 29·62 | W. | ... | 117 | 69 | 57 | 58 | 56 | Cloudy |
| ,, 2 | 29·64 | S.W. | 0·10 | 93 | 66 | 56 | 57 | 59 | Raining |
| ,, 3 | 29·74 | N.W. | 0·28 | 121 | 73 | 57 | 57 | 61 | Fine |
| ,, 4 | 30·10 | N.E. | 0·27 | 110 | 71 | 54 | 55 | 59 | Cloudy |
| ,, 5 | 30·04 | S.W. | ... | 78 | 68 | 57 | 57 | 60 | Overcast |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (9th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (10th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (11th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

**THURSDAY (12th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY (13th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

**SATURDAY (14th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**FRIDAY (13th).**—BRITISH GYNÆCOLOGICAL SOCIETY (Buxton).—Specimens will be shown by Mr. Furneaux Jordan, Mr. C. Martin, Mr. Macnaughton Jones, and Mr. C. Ryall. Discussion on Some Untoward Results following Abdominal and Pelvic Operations and the Means requisite to Prevent them (opened by Mr. S. Bishop).

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (9th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. C. Fox: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. F. Poter: Post nasal Growths. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Chest Cases.

**TUESDAY (10th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. B. Cheadle: Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.)—3.30 P.M. Dr. A. Turner: Tabes Dorsalis.

**WEDNESDAY (11th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. G. Rankin: Consultation. (Medical.)

EVELINA HOSPITAL (Southwark-bridge-road, S.E.).—4.30 P.M. Mr. C. H. Fagge: Clinical Demonstration of Selected Surgical Cases. (Post-graduate Course.)

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. Habershon: Auscultatory Percussion as a means of Diagnosis in Thoracic Disease.

**THURSDAY (12th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Spinal Cord Cases.

CHARING-CROSS HOSPITAL.—4 P.M. Dr. Willcocks: Medical Cases. (Post-graduate Course.)

**FRIDAY (13th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. Tilley: Consultation. (Nose and Throat.)

## EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, are given in this number of THE LANCET.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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## Communications, Letters, &c., have been received from—

A.—A. E. P.

B.—Mr. C. Birchall, Liverpool; Messrs. Bedford and Co., Lond.; Messrs. Brown, Gould and Co., Lond.; Surgeon J. W. Bird, R.N., H.M.S. *Bramble*; Messrs. Burgoyne, Burbidges, and Co., Lond.; Mr. W. Brown, Lond.; Mr. F. A. Brockhaus, Lond.; Mr. L. C. Bacon, Cambridge; Mr. E. Baker, Birmingham; Birkbeck Bank, Lond., Manager of; Dr. R. Browne, Leek; Dr. A. G. Bateman, Lond.; Borough of Douglas, Town Clerk of; *Birmingham Daily Post*: Rev. F. Burnside, Hertingfordbury; Mr. A. E. Barrett, Lond.; Mr. A. A. Bradburne, Farnborough.

C.—Mr. H. A. Collins, Saxmundham; Class Rooms, Edinburgh; Cardiff Infirmary, Secretary of; Messrs. Cresswell and Cresswell, Dowlais; City Hospital, Birmingham, Medical Superintendent of; Chester General Infirmary, Secretary of; Messrs. Cadett and Neall, Ashtead; Dr. A. Carmusso, Nervi, Italy; Dr. J. Carter, South Tottenham; Hon. S. Coleridge, Lond.; Dr. E. H. Colbeck, Lond.; Caledonian-road (546); Cornwall County Asylum, Bodmin, Medical Superintendent of.

D.—Mr. A. Duke, Cheltenham; Mr. A. W. Denny, Gringley-on-the-Hill; Dr. C. Dukes, Rugby; Durham County Asylum, Winterton, Clerk of; Derbyshire Royal Infirmary, Secretary of; Messrs. Davy, Hill, and Son, Lond.; Dr. W. E. Dixon, Cambridge.

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# An Address

ON

# THE IMPORTANCE OF POST-GRADUATE STUDY.

*Delivered at the Opening of the Museums of the Medical Graduates' College and Polyclinic on July 4th, 1900,*

BY WILLIAM OSLER, M.D., F.R.S.,

PROFESSOR OF MEDICINE, JOHNS HOPKINS UNIVERSITY, BALTIMORE, U.S.A.

MR. PRESIDENT AND GENTLEMEN,—If the licence to practise meant the completion of his education how sad it would be for the practitioner, how distressing to his patients! More clearly than any other the physician should illustrate the truth of Plato's saying that education is a life-long process. The training of the medical school gives a man his direction, points him the way and furnishes a chart, fairly incomplete, for the voyage, but nothing more. Post-graduation study has always been a characteristic feature of our profession. These 300 years the schools of Italy, Holland, France, Austria, and Germany have in turn furnished instruction to the young English practitioners who believed in the catholicity of medicine and who felt the sharp sting of the remark which associates homely wits with home-keeping youths. At first it was the grand tour, and many of the masters spent years in foreign study. In spite of our journals and international societies and increased facilities for travel I am not sure that among the teachers in our art the world over medicine to-day is more cosmopolitan than it was in the seventeenth and eighteenth centuries. We now spend a few months or a year in foreign study, whereas our great-grandfathers thought nothing of two and three years. I have seen the MSS. Journal of Dr. John Morgan (a Pennsylvania colonist), the founder of the first medical school in America (University of Pennsylvania), who, after graduation at Edinburgh, spent three years on the continent and became thoroughly familiar with Italian, Dutch, and French medicine, reaching such distinction as a student that he took his seat as a corresponding member of the Paris Academy of Surgery and was elected a Fellow of the Royal Society. Linacre, Caius, and Harvey remain to-day the models for all students in foreign lands, but the pace they set is a hard one to keep up. In the rapid extension of methods and subjects in medical education during the past quarter of a century post-graduate teaching has come in for a full share of attention. In the United States many special schools have been organised and perhaps more systematic attention has been paid to the subject than anywhere except in Germany. In New York, in Philadelphia, and in Chicago, the polyclinics and post-graduate colleges have been widely appreciated by practitioners and have done much good. Less successful attempts have been made by some of the ordinary medical schools, but the leading ones have now abandoned in great part the teaching of graduates. Personally, I have been engaged in the work for the past 11 years. For the first five years of the organisation of the Johns Hopkins Hospital we admitted only physicians, but since the medical school proper began we have had courses for graduates in the months of May and June. At any time during the year, at the discretion of the professor, a few special students may enter the classes or work in the laboratories. So far as the subject of medicine is concerned it is easy to arrange very attractive courses in routine ward instruction, in physical diagnosis, and in clinical micropsy. I have just finished a six weeks' course of clinical instruction to a class of about 30 general practitioners, and to meet these good earnest students from all parts of the country, some of whom have been in practice 15 or 20 years, stimulates one's optimism as to the outlook in the profession.

Upon the advantage which London offers for graduate study it would be superfluous to dwell, since here is collected a larger number of sick people than in any city in the world. The special hospitals offer unequalled facilities for the study of diseases of the eye, of the skin, of the nervous system, and of the diseases peculiar to women and to children. The absence of concentration of material so convenient in Vienna is counterbalanced by the much more elaborate equipment to be found in the special hospitals. There has been but one thing lacking—the organisation necessary to bring patients and students into intimate association, for which purpose this college for graduates was started. Until recently the physician who came to London felt lost and perplexed, and even if he took out three or four hospital tickets there was but little systematic teaching and he had to pick up information as best he could. Here he finds a local habitation with a comfortable reading-room, a good library, and a well-arranged curriculum embracing all the practical branches of medicine and surgery.

The value of a Museum as a means of practical instruction was first practically demonstrated by John Hunter whose magnificent collection is in itself a college for graduates. So extensive is the material, so admirably arranged, and so well catalogued that to the general practitioner and to the special student it offers a unique field for study. I am surprised that a larger number of physicians do not take advantage of the opportunity there offered to study accurately and systematically the manifold manifestations of disease. To Hunter's example is owing the place which the museum occupies in the medical schools of this country. You have been fortunate in having associated with your College a man with a truly Hunterian mind. In the broad scope of his work, in the untiring zeal with which he has studied the natural phenomena of disease, in his love for specimens and collections, Mr. Jonathan Hutchinson, bears a strong likeness to the immortal Hunter. No individual contributor in this country has made so many careful observations upon so many diseases. He is the only great generalised specialist which the profession has produced, and his works are a storehouse upon which the surgeon, the physician, the neurologist, the dermatologist, and other specialists freely draw. When anything turns up which is anomalous or peculiar, anything upon which the text-books are silent and the systems and cyclopædias are dumb, I tell my students to turn to the volumes of Mr. Hutchinson's "Archives of Surgery," as if it is not mentioned in them we surely have something very much out of the common. It is very fortunate that the collection which he has made will be kept together, as it will be of great service to students from all parts of the world. In one respect it is unique, pictorial and clinical, not anatomical and pathological, and it will remain a worthy monument to the zeal and perseverance of a remarkable man, a man who has secured the homage of a larger number of clinical workers than any Englishman of his generation.

Post-graduate instruction is needed in all classes among us. The school for the young practitioner is a general practice in which the number and variety of cases will enable him at once to put his methods into daily use. A serious defect may warp his course from the outset. Our students study too much under the one set of teachers. In English and American schools they do not move about enough. At a tender age, four or five years give a man a sense of local attachment to place and teachers which is very natural, very nice, but not always the best thing for him. He goes out with a strong bias already in his mind and is ready to cry "I am of Guy's," "I am of Bart's," or "I am an Edinburgh man." To escape from these local trammels, which may badly handicap a man by giving him an arrogant sense of superiority often most manifest when there is least warrant, is very difficult. I knew three brothers, Edinburgh men, good fellows at heart and good practitioners, but for them the science and art of medicine never extended beyond what their old teachers had taught. A Guy's man they could just endure, for the sake, as one of them said, of Bright and Cooper and Addison, but for men of other schools they entertained a supreme and really ludicrous contempt.

There are two great types of practitioners—the routinist and the rationalist—neither common in the pure form. Into the clutches of the demon routine the majority of us ultimately come. The mind, like the body, falls only too readily into the rut of oft-repeated experiences. One evening in the far North-West, beneath the shadows of the Rocky Mountains we camped beside a small lake from which diverging in all directions were deep furrows, each one as straight as an arrow, as far as the eye could reach. They were the deep ruts or tracks which

countless generations of buffaloes had worn in the prairie as they followed each other to and from the water. In our minds countless, oft-repeated experiences wear similar ruts in which we find it is easiest to travel, and out of which many of us never dream of straying. Year by year we follow the same plan in practice, give the same drugs, and settle down into routinists of a most commonplace type. Last year I was called to a town in Pennsylvania and having to wait until late in the evening for the return train, I insisted, as is my wont, that the medical man should carry on his daily work and allow me to help him if possible. An afternoon round among patients chiefly of the mechanic class showed me a shrewd cheery man who in 20 years had gained the confidence and esteem of his patients. Kindly, hopeful words, very sensible directions about diet, and some half-dozen drugs, seemed the essential in his practice. In the evening I saw him dispose of a dozen patients at an out-door dispensary rate; the examination was limited to the pulse, the tongue, and sometimes the throat. The dispensing, which was of the most primitive sort, was done at the table, on which stood four or five tin and paper boxes containing large quantities of calomel, soda, antipyrin, and Dover's powder. Other drugs, he said, were rarely necessary. He never used a stethoscope, he had no microscope or instruments of precision other than the thermometer. In reply to my questions he said "that he rarely had to make an examination. If the patient has fever I send him to bed, if there is œdema I ask for the urine. Of course, I make many mistakes and I sometimes get caught, but not oftener than the other fellows, and when I am in serious doubt I ask for a consultation." This was a man of parts, a graduate from a good school, but early in his career he had become very busy, and gaining the confidence of the people and having much confidence in himself he had unconsciously got into a rut, out of which at 40 only one thing could lift him—a prolonged course of additional study. This is by no means an exaggerated picture of a routinist in general practice. We all have our therapeutic ruts and we all know consultants from whom patients find it very difficult to escape without their favourite prescription, no matter what the malady may be. Men of this stamp gain a certain measure of experience, and if of a practical turn may become experts in mechanical procedures, but to experience in the true sense of the word they never attain. In reality they suffer with the all-prevailing vice of intellectual idleness. It is so much easier to do a penny-in-the-slot sort of practice, in which each symptom is at once met by its appropriate drug than to make a careful examination and really to study the case systematically. Much depends on a man's mental constitution, but much more on the sort of training he has had. If when a student good methods are not acquired it is very hard to get into proper habits of work in practice.

The rationalist, on the other hand, always approaches a patient as a mathematician does a problem. There is something to be found out; in each case, however trivial, there is something novel, and the problems of causation and the question of relief, while not perhaps of equal importance, are of equal interest. He may be just as busy as his idle brother, but he finds time to keep up a technical dexterity in the use of instruments of precision and the stethoscope and the microscope are daily helps in diagnosis. These men are the delight of the consultant. To go into the country and find the diagnosis made in a case of mitral stenosis, a Friedrich's ataxia, a case of leukæmia, or one of myxœdema gives a man a thrill of pleasure such as Comte says he always felt when a student gave him an intelligent set of answers in an examination. It is this class of practitioners for whom the post-graduate courses are helpful and necessary. They alone feel the need of keeping abreast with the times, and men of this type will return every few years, finding that a three months' course of study not only improves and helps them personally but is most beneficial in their practices.

The members of no class in our ranks travel to the waters in deeper or straighter ruts than the specialists. To work for years at diseases of the skin, ophthalmology, gynæcology, &c., necessarily tends to make a man narrow not only as a practitioner but in other relations. One of the best features of British medicine has been the practice of specialties by general surgeons and physicians. It has been better for the men themselves perhaps than for the patients and for the particular branch practised. Nowadays, to master even the smallest specialty requires concentrated effort of years' duration, and to counteract the benumbing influence of isolation a man must scan the wide horizon of pathology and must cultivate ardently the general interests of his profession. The degree of advancement of the specialties in different countries must be borne in mind by our friends and there are few who have been in practice for five or ten years who would not be benefited by a course of study in some foreign country.

After all, no men among us need refreshment and renovation more frequently than those who occupy positions in our schools of learning. Upon none does intellectual staleness steal "with velvet step, unheeded, softly," but not the less relentlessly. Dogmatic to a greater or less degree all successful teaching must be, but year by year, unless watchful, this very dogmatism may react upon the teacher who finds it so much easier to say to-day what he said last year. After a decade he may find it less trouble to draw on home supplies than to go into the open market for wares, perhaps not a whit better, but just a wee bit fresher. After 20 years the new even when true startles, too often repels; after 30, well, he may be out of the race, still on the track perhaps, even running hard, but quite unconscious that the colts have long passed the winning post. These unrefreshed, unregenerate teachers are often powerful instruments of harm and time and again have spread the blight of a blind conservatism in the profession. Safely enthroned in assured positions, men of strong and ardent convictions, with faithful friends and still more faithful students, they too often come within the scathing condemnation of the blind leaders of the blind, of those who would neither themselves enter into the possession of new knowledge nor suffer those who would to enter. The profession has suffered so sorely from this blight of intellectual old fogeyism that I may refer to the most glaring instances in our history. In the scientific annals of this great metropolis there is no occasion more memorable than April 16th, 1616, when Harvey began his revolutionary teaching. Why the long, the more than Horatian delay in publishing his great discovery? He knew his day and generation and even after 12 years of demonstration, which should have disarmed all opposition, we know how coldly the discovery was received, particularly in certain quarters. Harvey, indeed, is reported to have said that he did not think any man above 40 years of age had accepted the new truth. Many of us have lived through and taken part in two other great struggles. The din of battle over the germ theory of disease still rings in our ears. Koch's brilliant demonstration of the tubercle bacillus had a hard up-hill fight to recognition. The vested interests of many minds were naturally against it, and it was only the watchers among us, men like Austin Flint, who were awake when the dawn appeared. It is notorious that the great principles of antiseptic surgery have grown slowly to acceptance, and nowhere more slowly than in the country in which they were announced, the country which has the great honour to claim Lord Lister as a citizen. Old fogeyism of the most malignant type stood in the way, and in some places, strange to say, still stands. Mentally it is possible that surgeons age earlier than physicians. I remember as a student, listening to the introductory lecture of a distinguished surgeon at one of the metropolitan schools the burden of whose discourse was the finality which had been reached by modern surgery. In boldness of conception and in precision of execution, he said, we could scarcely hope to see any further progress. Poor man! Cerebral, renal, and hepatic surgery, to say nothing of other operative advances, followed in rapid succession, and I only quote this as illustrating the state of mental blindness with which we teachers may be smitten.

As Locke says: "Truth scarce ever yet carried it by vote anywhere at its first appearance," and these well-known examples illustrate a law in human knowledge that a truth has to grow to acceptance with the generation in which it is announced. Progress is an outcome of a never-ending struggle of the third and fourth decades against the fifth, sixth, and seventh. Men above 40 are rarely pioneers, rarely the creators in science or in literature. The work of the world has been done by men who had not reached *la crise de quarante ans*. And in our profession wipe out, with but few exceptions, the contributions of men above this age and we remain essentially as we are. Once across this line we teachers and consultants are in constant need of post-graduate study as an antidote against premature

senility. Daily contact with the bright young minds of our associates and assistants, the mental friction of medical societies, and travel are important aids. Would you know the signs by which in man or institution you may recognise old fogeyism? They are three: First, a state of blissful happiness and contentment with things as they are; secondly, a supreme conviction that the condition of other people and other institutions is one of pitiable inferiority; and thirdly, a fear of change, which not alone perplexes but appals.

Conservatism and old fogeyism are totally different things; the motto of the one is "Prove all things and hold fast that which is good," and of the other "Prove nothing but hold fast that which is old." Do not suppose that you have here a monopoly of the article, which is a human, not a national, malady, for we see a very virulent type in America. In its illusiveness and in the disastrous consequences which have often followed its hunting, old fogeyism is a sort of Snark in the medical profession. Before the Boojum, in the form of an entrenched variety, many good men and true have softly and silently vanished away like the beamish nephew of the bellman, sacrificed to intellectual staleness in high places. One of the best correctives is the plan followed at Harvard which compels (?) every teacher to take the Sabbatical year, ensuring in this way rest of the mind if not refreshment. To maintain mental freshness and plasticity requires incessant vigilance; too often, like the dial's hand, it steals from its figure with no pace perceived except by one's friends and they never refer to it. A deep and enduring interest in the manifold problems of medicine and a human interest in the affairs of our brotherhood—if these do not suffice nothing will.

As I stated at the outset, during the past three centuries English students have frequented in turn different countries, drinking deep, deep draughts at the great fountains of learning. Think of the debt we owe to these men and to their foreign masters! Linacre and his successors, Caius, Harvey, and Glisson, brought the new learning from Italy and, moreover, gave to English medicine that smack of culture, that tincture so peculiarly its own. From Holland a succeeding generation drew rich stores of knowledge, and the methods of teaching of the great Boerhaave were quickly adopted by English and by Scotch students. From France came next the new science of Bichat, the new art of Laennec, and the new methods of Louis. To another group the great teachers of Austria contributed accuracy in clinical methods, a zest for the study of special branches and a much-needed, at the time, therapeutic nihilism. The debt of the present generation to Germany can never be paid. Think of the scores who have found inspiration in our common master Virchow; and in the scientific study of disease the Fatherland is still in the van. The great Republic of Medicine knows and has known no national boundaries, and post-graduate study in other lands gives that broad mental outlook and that freedom from the trammels of local prejudice which have ever characterised the true physician.

The course of Empire has opened new fields in which problems new and old have been presented for solution, some of which are of great interest to you "on this side of the water." In any comprehensive survey of the educational field in medicine perhaps the most important single event during the past quarter of a century has been the silent revolution which has taken place in the United States, a revolution which has a direct bearing upon the matter in hand. Everywhere in the schools the entrance requirements have been strengthened, the course of study has been prolonged, and the character of the examinations changed. The hospital equipment has been enormously improved and the clinical facilities have been correspondingly increased. But a still more striking change has been the cultivation of the scientific branches of medicine. 25 years ago physiological laboratories were few and far between; now the output of a score of well-established laboratories supports one of the best journals of physiology in the world. The study of pathology has shown a corresponding growth. The most hopeful feature is a restless discontent which, let us hope, may not be allayed until the revolution is complete in all respects. Meanwhile, to students who wish to have the best that the world offers, let me suggest that the lines of intellectual progress are veering strongly to the West, and I predict that in the twentieth century the young English physicians will find their keenest inspiration in the land of the setting sun.

# The Ingleby Lectures

ON

# THE COMMONER NEUROSES OF CHILDHOOD, THEIR PATHOLOGY AND TREATMENT.

*Delivered at the Mason University College, Birmingham, on June 27th and July 4th, 1900,*

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## LECTURE II.[1]

*Delivered on July 4th.*

MR. DEAN AND GENTLEMEN,—Migraine and recurrent paroxysmal headaches which are deficient in the special characteristics that distinguish migraine are common in children, the latter type being particularly frequent. It would be an error to attempt a sharp separation between these two affections, for although the characteristics which mark migraine—viz., the sensory symptoms, the unilateral commencement of the pain, and the sickness and vomiting—are very prominent, yet we find that typical attacks of hemicrania alternate with simple non-migrainous headaches, and that one form may, in any individual sufferer, replace the other in the course of time. Moreover, the vaso-motor symptoms and the fluctuations in the blood pressure which in typical migraine are so pronounced are seldom, if ever, quite absent from recurrent headaches of the simple kind. Precisely the same causes are found to produce both these forms of cephalalgia.

The true character of these headaches is shown by their recurrent character, a slight cause sufficing, in those who are predisposed, to bring on a paroxysm; and it follows that in dealing with cases of this kind we must attack the predisposing factors, if they be accessible to treatment. In the opposite event we must content ourselves with recognising those causes which immediately excite the attacks and instructing the patient to avoid them. Children suffering from this complaint usually show evidence, even in the intervals between the attacks, of being out of health, but in exceptional instances they appear to be in good physical condition. Without going into great detail, the causes which lead to migraine may be stated thus: 1. Heredity, direct or indirect. 2. Overwork, mental or physical. 3. Overstrain of the eyes. 4. Slight injuries. 5. Metallic intoxication, tobacco intoxication, and alcoholic intoxication. 6. Depressed general health arising from either (1) previous disease, (2) respiratory intoxication, (3) disorders of the alimentary tract, or (4) unsuitable diet. 7. Indigestion and constipation without evident impairment of the general health. It will be at once seen that no definite line severs the predisposing from the exciting causes; for in an individual who is led to the verge of migraine by, say, overwork at school a slight extra amount of work will precipitate an attack.

Now, if we consider the toxæmic conditions which predispose to these headaches we are struck by the prevalence of those which arise from unsuitable diet or from other disorders of the alimentary canal. Very often one can elicit a history of constipation, and this or an account of irregularity of the bowels will generally direct us straight to the cause of the trouble. Then we shall on inquiry often be confronted with an account of most unsuitable feeding; the child either has its meals irregularly or they consist of materials quite unfit for its consumption, and very usually the diet is faulty in both these particulars. Even a short experience will convince any observer that in these two conditions, constipation and faulty feeding, are founded a large number of cases of migraine. There may be, on the other hand, a state of catarrh of the gastro-intestinal tract which is not due to errors of diet or constipation, but which results from infective disease. Measles and whooping-cough

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are particularly liable to leave behind them such a condition. Infective diseases may also lead to migraine by simple enfeebling of the general health without there being any evidence that the alimentary canal is specially affected, and where scarlet fever has been the forerunner of recurrent paroxysmal headaches one should be careful to exclude nephritis, which is often overlooked and may first show its presence by these attacks.

A not uncommon cause of migraine and the related headaches is the respiration of air which is contaminated by repeated breathing, and in cases where careful inquiry fails to elicit alimentary disorders or the history of an infective disease, insufficient ventilation should be thoroughly looked for. That the effect is produced rather by the poisonous material contained in the air than by deficient oxygenation of the blood is shown by the comparative rareness of migraine or paroxysmal headache in those who suffer from cyanosis, the result of chronic cardiac or pulmonary disease. It has been remarked that patients suffering from migraine usually bear evidence of being out of health; but even where the cause is a toxic one this does not hold true universally, and although in the majority of these cases we notice the languor of expression, the coated tongue, and the vascular stigmata, yet the child may look perfectly well. In such cases there is often excessive indicanuria which will guide one to the cause of the trouble. Another feature of these toxæmic patients is that their headaches general begin in the morning, either before rising or soon after, and the reason of this is the comparative inactivity of the kidneys during sleep and the consequent accumulation of toxic materials in the blood during the night. Where fatigue or overwork bring on the paroxysms, they occur, on the other hand, most frequently during the latter part of the day. Thus the time of occurence of the seizures may help us to some degree in recognising the cause of attacks.

I have only a word to say on the subject of heredity, and that refers to cases in which there is evidence of a gouty inheritance. This means that the tissues are inclined to irregular metabolism even when they are supplied with food which is suitable to children who are free from this tendency. In such cases, therefore, successful preventative treatment will lie in regulation of the diet till it suits the individual.

*Epilepsy.*—Of the neuroses under consideration epilepsy is the most serious, owing to its great frequency and the difficulty of treating it when the disease has lasted any considerable time, and also in consequence of the dangers which the attacks bring with them. The remarks which I have to make shall not apply to those epilepsies which are produced by gross cerebral disease, nor to those single epileptoid attacks which not infrequently in young children mark the onset of an acute infection.

The main causes of epilepsy may be grouped as follows:—1. Heredity, direct or indirect. 2. Damage to the peripheral nerves, cranial or spinal. 3. Emotion, fright, and shock. 4. Masturbation and retained smegma preputii. 5. Commencing or disturbed menstruation. 6. Congenital syphilis. 7. Uræmia. 8. Alcohol poisoning or lead poisoning. 9. Acute infective diseases. 10. Rickets and teething. 11. Indigestion and gastro-intestinal disorders, including parasitic worms and constipation. It is unnecessary for me to go into detail on each of these points, and I will confine my remarks to the commoner or more important causes.

*Emotion.*—In children under the age of four years excitement, shock, and fright must be very rare as exciting causes of epilepsy, but in older children this cause is much more frequently operative. It is always necessary, however, to guard against the possible error of assuming this to be the sole cause, for in a number of instances of the disease we shall find that though fright occasioned the first fit, yet one of the predisposing factors such as, e.g., indigestion, was at work long before the fright occurred.

*Masturbation.*—Masturbation and other irritation of the external genitals is by most authors given as a cause of epilepsy, and I have myself met with a good many instances in which this appeared to be the case. I think, however, that masturbation is a rare cause in boys, and although I have no doubt that it may be effective in producing epilepsy in girls I have never seen a case which could be accepted as satisfactory evidence on the point. Even in boys who masturbate or who suffer from adherent prepuce with retained smegma—which sometimes smells very offensively—and who are the subjects of epilepsy, there have generally been, in my experience, other factors which could not be neglected in the endeavour to get at the true cause of the attacks. In order to illustrate this I will mention a case—that of a boy aged 12 years, of pleasant, frank, intelligent manner, but with a sallow complexion and rather thin and suffering from constipation, who had had several epileptic attacks, two of which were clearly associated with a quantity of indigestible food, and one of which was provoked by want of food beyond the usual interval, coupled with excitement and subsequent overeating. He was subject to irregularity in his meals and to injudicious feeding. He also had a prepuce which was permanently drawn forward and which concealed a good deal of retained smegma; but there was no offensive smell. It was denied that he masturbated, but the father's attention was drawn to the necessity of being on the watch for the vice. Stricter diet and general hygiene and moderate purgation were prescribed. Some weeks later the patient had another seizure and by this time the father had found out that the boy masturbated and that he was troubled with precocious sexual feelings of which he had quite willingly told his father on straightforward questioning. He was circumcised and for many months after that he had been free from seizures. Now, I shall presently have to point out the great importance which in my opinion attaches to digestive disturbances, more particularly as a predisposing cause for epilepsy, and I feel disinclined to overlook the very evident disorder of the alimentary tract which here existed. There was the constipation and the habitual irregularity of the diet both as regards time and quality of the food. On the other hand, there was masturbation, which was probably excited, like the precocious feelings, by the constant irritation to which the glans penis was subjected by the retained secretion. In the light of my present experience I would interpret the case in the following way. A predisposition of the cerebral centres was set up by the prolonged disorder of digestion, and in this state the brain was easily incited to an epileptic discharge by the stimulus of masturbation or at other times by the stimulus of an extra indigestible meal. One other case has been brought to my notice which is very parallel to that just cited. In this latter patient the considerable size of the external genitals contrasted strongly with the generally poor state of bodily development, whilst, as in the first case, the mind was active and bright. It is also worth considering whether in these two boys the immediate cause of the fits may not have been the mental excitement which the masturbation produced. I know of cases—very rare ones, certainly, but still they occur—in which the act of copulation produces in women a state of frenzy or a condition in which they act precisely as do sufferers from masked epilepsy (epilepsia larvata)—i.e., they carry out complicated acts without any evident purpose and without being in the least conscious of them at the time or afterwards. I do not know whether these occurrences happen only in women who are otherwise epileptic or not, but it is this point which has suggested to me the question as regards the excitant of the seizures in the boys just mentioned.

*Menstruation.*—The incidence of menstruation and the disturbances of this function in young girls are frequently blamed as exciting causes of epilepsy—and probably with justice, for it is undeniable that in many women the commencement of the fits dates from the establishment of the menstrual function. Here, again, it is not quite clear whether the effect is produced in a reflex manner or by the working of the new function upon the emotions. Possibly these two mechanisms act together. My own experience among the women at the infirmary suffering from long-continued epilepsy has shown me, rather contrary to my expectation but in agreement with the experience of others, that the fits are comparatively rarely aggravated at the menstrual periods, and in fact in the majority of these sufferers menstruation had no apparent influence either on the number or the severity of the seizures.

*Rickets and teething.*—These two causes are taken together because they so frequently co-exist and because in cases where they are jointly present it is difficult to gauge the true importance of each. They may, however, also exist separately. Teething may lead to epileptic fits by means of local irritation and reflex reaction. This will, of course, only occur in those children whose nervous centres are already susceptible to the epileptic discharges either through inherited weakness or through disease, and one of the diseases which is most frequently met with in this connexion is rickets. Now, we know rickets to be a disorder of metabolism and nutrition, and the central nerve-tissues must share in this disorder, with the consequence that

disturbance of their function is brought about; but it is easy to trace rickets a step further back, and we may say with confidence that the cause of rickets lies primarily in faulty diet or in faulty digestion. Rickets, therefore, comes under the more comprehensive heading of diseases of digestion, of which great class of epileptic factors we may say that rickets is a well-defined constituent.

*Digestive disturbances.*—Tænia, round-worms, and thread-worms may be associated with epilepsy, and I have met with each of these three causes. As before remarked, these worms never inhabit the intestine for long without producing some change in the mucosa of the gut. Very possibly in many cases a diseased state of the intestinal mucosa precedes, and renders possible, the lodgment of the worms. The intestinal change which we generally find is a chronic catarrh, in which thick masses of greyish-white mucus, stiff and difficult to remove, lie on the surface of the mucous membrane, often hiding the worms from view. By degrees, in long-continued cases, the inflammation ends in the formation of cicatrical tissue and thickening of the walls of the gut. The inflamed and altered intestine must be changed both as regards the condition of its secretion and as regards its powers of absorption. It is apparent, therefore, that besides the local presence of the worms there is an organic change in the intestine which may, if extensive, affect the absorption of food-stuffs, and which, even if of no great extent, may lead to interference with the regular course of digestion and to the formation of irregular by-products. These if absorbed will certainly not have the same effect on tissues as healthy food, but will act on them in a toxic manner. In view of the conditions just described one will certainly hesitate to explain the epileptic fits produced by intestinal worms as due to mere reflex irritation.

There are one or two further points of interest in connexion with this subject. It is said, for instance, that threadworms are comparatively rarely found to be the cause of epilepsy. This may be because they escape observation. Not very long ago there was under my care a little girl, aged eight years, who had minor seizures in a strong degree. Inspection of the stools revealed no worms for a week, although the bowels were quite freely moved every day. At the end of a week, however, a good number of threadworms were discovered in the dejecta and the association of the parasites with the seizures was thus established. The worms are therefore apt under some circumstances to escape the notice of even a trained nurse, and much more of an unobservant mother, for a considerable period; or they may be voided per anum, not continuously "with every stool," but at intervals which extend to several days. These are points worth considering when one bears in mind the somewhat severe changes which worms are apt to produce in the intestine and the great frequency with which they are associated with epilepsy. Again, epilepsy produced by worms may be unilateral in distribution, the convulsions not only commencing on one side of the body but remaining limited to that side throughout the whole course of the seizure. The same point may be observed in certain cases of epilepsy produced by overloading of the intestines, of which I shall presently give an instance. The fact is generally recognised that epilepsy caused by intestinal worms is difficult to cure even when the parasites are completely removed by proper anthelmintic treatment. There is, of course, the fallacy which has just been illustrated of the continued presence of threadworms without their being passed or recognised in the fæces, and one may be easily misled into the idea that the parasites have been successfully removed. But even when the intruders have been really got rid of the seizures are apt to continue from a persistence of a morbid condition of the intestinal mucosa which is associated with their presence. There is another reason for the continuation of the seizures—namely, the morbid habit of the nerve-centres, which once acquired is only to be overcome by prolonged treatment, but this point applies to all epilepsies whatever may be their immediate and remote causes.

There are, however, disorders of the gastro-intestinal tract, particularly of the intestine as distinguished from the stomach, other than those set up by worms, which are very frequently both the predisposing and the direct causes of epilepsy. Both in children and in adults instances of the disease meet us for which we fail to find a satisfactory explanation as to either the predisposing factor or the exciting cause. In adult males, in whom these causes are far from infrequent, there is strong evidence to show that chronic alcoholism, even when unaccompanied by kidney disease, is the predisposing factor, whilst the discharge may be produced by an extra dose of the alcoholic poison. In other cases where drink can be excluded I think strongly that the reason for the epilepsy must be sought for, and would be found, in the digestive tract. Unsuitable ingesta which act as poison, like alcohol, may be the provokers, and it is by no means necessary that they should in every instance be such well-recognised toxic agents as alcohol is. In young adolescents and particularly in children it would appear that an excessive meat diet is quite capable of putting the nervous system into what may be called the state of epileptic tension. In other patients there is catarrh of the intestine which, when it fails to attract by any marked signs the attention of the sufferer himself or of the mother, is not complained of and requires skilful questioning to be revealed. Beyond such patients whose appearance does not help us in forming a conclusion as to the cause of the epilepsy there are, however, those of another class who bear marks of their gastro-intestinal disorder which, though plain enough when attention is directed to them, are nevertheless not infrequently overlooked. I have spoken before when dealing with chorea of the frequency of certain facial signs, such as a dull, muddy complexion and furred tongue, as indicating an habitual toxæmia arising from the bowels. It is quite remarkable how often we are confronted with this complex of signs in patients whose complaint is about their epileptic fits; indeed, this state of affairs is so frequent that I have often wondered that no greater stress is laid upon the conjunction. The appearances in question may be briefly described here, since they were only touched upon under the heading of chorea. In pronounced instances the complexion is muddy, the eyes and expression are dull, and dark rings may be found round the orbits. There is a tendency to erythematous, patchy flushing of the skin of the face, neck, and chest. The small vessels on the cheeks are dilated and form vascular stigmata, such as are seen in chronic alcoholic patients and others in whom the degeneration of the blood-vessels is commencing. Often there is a tendency to acne and comedones, when the skin is often greasy-looking and secretes an excess of sebaceous material, especially about the nose. The tongue is usually coated or furred in a greater or smaller degree and the patient suffers from a bad taste, particularly in the morning. The breath frequently has a disagreeable acrid odour which at times may be very offensive—a condition which is in no way connected with any local process in the mouth. Such sufferers are often big and stout and frequently present a coarse appearance, due largely to the acne and seborrhœa. In many of them the appetite is great and even voracious. They are usually constipated, though the history of constipation is often difficult to elicit from them, for it seems as though a moderate degree of constipation becomes so much a part of a patient's life that it no longer presents itself as anything abnormal. The bowels are frequently asserted to be "quite regular" when, as a fact, they are moved every second or third day only; and it is necessary for the physician to assure himself of the physical state of the dejecta before he is justified in accepting the statement of the patient or that of the patient's mother, that there is nothing the matter with the bowels. Particularly I would lay stress on the misleading fact of the bowels being opened twice or three times a day. This generally means not that the stools are loose or copious, but that each evacuation is small, hard, and scanty, so that at each motion only a small portion of the fæcal matter lying in the sigmoid and rectum is removed, and that the true state consequently is one of constipation. On the other hand, it must not be forgotten that true diarrhœa may exist with such a disorder of the intestine and with those facial signs that I have just described. Diarrhœa, however, in my experience is very rare as compared with constipation.

In all probability the constipated condition predisposes to epilepsy by leading to a toxæmia, and not by reflex irritation. For in the first place we have the facial signs and the condition of the tongue pointing to toxæmia, and in the second place it strikes me that one very rarely encounters epilepsy when there is a mere overloading of the stomach, a condition which nevertheless has a strong tendency to set up reflex action. I am not aware of any case in which an overcharged stomach, while the food is still in that viscus, has given rise to an epileptic seizure; and in those cases in which an indigestible meal is blamed, and justly blamed, for the attack the latter does not usually

occur until at least 12 hours after the meal in question, and we know that in children in such cases an enema will often remove pieces of undigested food from the rectum. Now, from the stomach comparatively little, if any, absorption takes place, and the facts just mentioned appear to bear out the suggestion that it is only when the absorption of products of such an indigestible meal is commenced that the fits occur. This of course applies to the exciting cause of the seizure; the predisposing cause is, however, much more important and is *a fortiori* more probably a toxæmia than a state of reflex irritation.

The foundation of digestive disturbances which ultimately become complicated with epilepsy is very commonly laid at school. Thus I have seen many cases of epilepsy in young women who gave a distinct history of severe indigestion commencing while they were at boarding-schools and who never entirely recovered from their indigestion. These patients all showed in addition to their dyspeptic symptoms some evidences of auto-intoxication and with hardly an exception admitted suffering from constipation.

It is to me a remarkable fact that epilepsy is but rarely combined with anæmia. Thus out of 32 cases of women and children in whom epilepsy was connected with marked signs of digestive disorders one only showed anæmia to a degree which was recognisable by the pallor of the conjunctiva and I have not seen a single instance of epilepsy associated with typical chlorosis. When we remember how constantly chlorosis and other anæmias are combined with, and probably are due to, irregular digestion and constipation this exemption of chlorotics is certainly notable and is in want of a plausible explanation. It may of course be that the particular toxic substances which lead to anæmia are without influence on the nervous system and that, *vice versâ*, those that have a profound effect upon the latter leave the blood-forming tissues unaffected, and until we are enabled to isolate or to discriminate by their toxic effects between the several deleterious bodies which are in different circumstances produced in the alimentary canal, this is the only explanation which I can suggest.

There is nothing special in the form which the epileptic attacks assume when they are due to gastro-intestinal intoxication. Major and minor attacks occur with equal frequency and epilepsia larvata is not uncommon; it may even occur that the convulsions so produced are confined to one side of the body after the type of Jacksonian epilepsy. Thus I have seen an infant who on two successive occasions was brought to hospital suffering from marked unilateral convulsions limited to one side. On each occasion grossly unsuitable food proved to be the cause of the seizures and undigested masses were removed by enema from the rectum. Watching this child in its convulsions one would certainly have said that they were due to coarse brain disease, and although I have never seen another case so clear in character, this one seems worth noting, since instances of this kind are probably not altogether exceptional and are apt to mislead one as to the cause of the fit. The time at which the seizures take place is not characteristic in gastro-intestinal epilepsies, for the fits appear with about equal frequency in the day and in the night, and in several cases I have noted that they take place in the early morning, either while the patient is still in bed or during the process of dressing. It is noteworthy that in a considerable proportion of the gastro-intestinal cases no evidence of any hereditary tendency can be obtained.

I trust that I have made it clear that a great proportion of the epilepsies met with in everyday practice are the result of chronic toxæmia arising from the alimentary tract, and that this same auto-intoxication is the true factor in several other conditions which are universally recognised as predisposing causes of epilepsy—as, e.g., intestinal worms and rickets. It is necessary to emphasise the predisposing as contrasted with the exciting cause to which the first or any subsequent fit is attributed. It is not possible to classify the causes of epilepsy into two distinct groups—pre-disposing and exciting—without straining the facts, but in any individual case of the disease we can discern these two factors and the predisposing cause remains the same, whereas the immediate excitants of the fits may vary, and will be, now fatigue, then excitement, or again injury or pain.

*Pathology.*—The diseases under consideration have, then, the following etiological points in common. They are produced by a group of emotional causes and, on the other hand, by a group of toxic causes, together with each of which hereditary predisposition has an important influence. The toxæmic element is more effective than the emotional in all these maladies excepting saltatory spasm. The further remarks which I have to make on the pathology of these disorders shall be limited to the subject of self-intoxication from the alimentary canal, which has been shown to be a factor of first importance.

We may conveniently divide the gastro-intestinal disorders which lead to toxæmia as follows:—

1. *Excessive amount of food.*—Over-eating has a great effect in setting up disorder of the alimentary canal. The habit is a common one among the children of the lower classes, but it is by no means confined to them. We may explain its action as follows. Normally the glands which produce the digestive juices secrete them in quantities which are capable of dealing with a certain volume of food. Habitual excess of food or too frequent meals will no doubt stimulate the glands to yield a proportionate increase of their secretion for the time being, but such an over-strain, if long continued, is apt to end in glandular inadequacy and consequent incomplete digestion. The incomplete digestive products may be absorbed; or in the absence of a sufficient amount of the digestive fluids bacterial decomposition of the intestinal contents takes place, and the products of the same are taken up by the blood-vessels and lacteals.

2. *Unsuitable food.*—Food unsuitable either to the age of the patient or to his individual digestive capacity is likewise often the cause of those gastro-intestinal conditions which are found associated with the neuroses, and very frequently such dietary errors signalise themselves by producing the facial appearances which have been described. Reference has already been made to the fact that an excess of meat food—and probably the same would hold good of excess of any other proteid material—is apt to be associated both with dreaming, enuresis nocturna, and epilepsy, and I think that when a fault is discovered in the nature of the food it is the proteid constituents which are usually to blame.

3. *A catarrhal condition of the stomach or of the small intestine.*—This may arise from various causes, as, for example, dietary errors, intestinal worms, or infective diseases. This condition may be accompanied by diarrhœa, or, more commonly, by constipation. In speaking of the local effect of intestinal worms I have already detailed the manner in which such catarrhs act and how they may long outlast their original cause.

4. *Constipation.*—Constipation, arising from catarrh of the intestine or faulty diet or from mere habit and encouraged by neglect is undoubtedly one of the most common predisposing causes of all the neuroses here considered, and its effect is produced partly by the delayed elimination of fæcal matter which therefore has a chance of being re-absorbed by the intestine and partly by the encouragement which it is shown that bacterial growth within the intestine receives when the fæces are retained. In the absence of a verbal admission by the patient of any of these digestive disorders we may observe the signs which have been fully described and the significance of which as an index of auto-intoxication has been pointed out, or we may find indicanuria. Indican is derived from indol, which latter is formed in the intestine by the bacterial decomposition of albuminous substances. A very little indican is commonly present even in the urines of healthy persons, but a considerable excess of the same, such as I show you in these specimens, is always accompanied by disturbed general health. We may, therefore, say that excess of indican in the urine is always associated with toxæmia, and this toxæmia arises (with rare exceptions, in which the source is decomposing pus) from the intestinal canal. Indol itself may possibly be toxic, in view of its origin through bacterial action and of the fact that it is unlikely to be a nutrient substance, for all the familiar organic food stuffs contain oxygen, and indol is deficient in this element. Indol is formed from the nitrogenous food stuffs and is so far the only decomposition product of intestinal origin which we have the means of detecting in the urine. But it is quite probable that analogous products are formed from both carbohydrate and fatty articles of diet under the influence of constipation or of intestinal catarrh. If this be so we ought to meet with bodies of the constitution of the alcohols and of the fatty acids, but I am not aware that any such have been certainty detected in the urine, and it is possible that they undergo such changes before they are finally excreted with that fluid as to be no longer recognisable, or that they are completely oxidised in the blood and excreted from the lungs.

Excepting the sign of indicanuria we have no chemical test which proves that auto-intoxication from the alimentary canal is in progress. There is, to be sure, the fact, first described in detail by Bouchard, of the toxic action of the urine, and we might expect to find in the case of self-intoxications special results following the injection of such a patient's urine into the blood of an animal. But so far as I am aware the poisonous effects of the urine of healthy persons have hitherto proved to be identical in nature with those obtained with urine from patients suffering from blood-poisoning, though less in degree, and the only exception to this rule appears to occur when the urines of certain infective diseases—e.g., pneumonia—are employed. This physiological test would, however, not be applicable to the bedside, even if it should in the end prove useful in detecting special poisons in special gastro-intestinal disorders. A point to which I have previously drawn attention is the prominence of the toxæmic symptoms of malaria, languor, and sometimes vertigo, in the early morning, and in this connexion it is highly interesting to note one result of Bouchard's experiments—viz., that the urine secreted during the night is, though more concentrated, materially less toxic than that eliminated during the hours of mental and bodily activity.

### TREATMENT.

In view of so many common points in the production of these neuroses their treatment must possess certain common features which shall first be dealt with.

From the stress which has been laid upon disorders of digestion and faulty diet as a cause of nearly all these diseases it follows that correction of dietary errors is one of the main points requiring attention. In the majority of cases in which the feeding is at fault it is advisable to cut down the amount of meat which the child consumes. Meat once a day will nearly always be sufficient, and that once should be at dinner-time in the middle of the day while there are still some hours of muscular activity before the child. It is seldom necessary or advisable to remove meat altogether from the dietary, for it is nearly always an excessive quantity of meat which leads to the trouble, not meat in a small or moderate amount. So long as the meat is good there is, I believe, not much difference between beef, mutton, rabbit, fowl, game, &c., but fish may with advantage be substituted for butcher's meat. Light puddings and green vegetables may be given and potatoes in moderation. In fact, it is not so much a question of prohibiting any article of diet as of regulating the amount. In many children the entire bulk of food requires reducing. In severe cases of enuresis it is sometimes (as in the case which I have quoted) advisable to stop meat altogether for a period and then to allow it again in a very small quantity. Sufficient mastication and moderate rest after meals should be insisted on, as they greatly help digestion, and the child should not leave the house after breakfast until the bowels have been opened.

It is plain, also, that in most cases the action of the bowels demands attention, since the prevention of an auto-intoxication from the intestine depends firstly on regular and sufficient defæcation. As cathartics the saline purgatives are invaluable, at all events to begin the treatment with, and since it is advisable not to give drugs more often than necessary they are best administered in the shape of a single dose of mixed sulphates of soda and magnesia one hour before breakfast, or in a smaller dose last thing at night. Any of the natural aperient waters may be substituted for this mixture. Calomel (or calomel combined with a small quantity of colocynth and rhubarb) is also extremely valuable in this class of cases. Senna, aloes, and other drugs which act mainly on the lower intestine, are less indicated, for it appears that the groups of aperients first named act largely by stimulating the flow of bile and by thus helping the liver to eliminate whatever toxic materials it has removed from the portal blood stream. Whichever drug be given the object to be attained is one large stool, of porridge-like constituency, to be passed preferably before or shortly after breakfast. Again, we want to convert habitual irregularity of the bowels into habitual regularity, and to this end it is necessary to give, not an occasional purge when the bowels have been obstinate for a day or two, but a regular course of this daily treatment, extending over three or four weeks, to be followed by a gradual diminution of the dose, administered first on alternate days, then at longer intervals. This combined with the dietary measures prescribed will usually be followed by complete success in children, and any excess of indican, if present at the onset, usually disappears under these therapeutic measures, but sometimes it continues to be present in considerable quantity, showing that in spite of the purgation an excess of microbial products is absorbed. In such cases the so-called intestinal antiseptics naturally suggest themselves, the chief of which are sulpho-carbolate of soda, salol, phenol, mercurial salts, charcoal, and possibly arsenic. All these, excepting phenol and arsenic, I have tried, and though each has proved useful I cannot say that any one of them can be relied upon to remove the trouble entirely and in all cases. Those which have in my hands proved the most successful are sulpho-carbolate of soda and charcoal. The first is, however, very apt to give rise to headache and must therefore be carefully watched, and on the whole I give the preference to vegetable charcoal given in 30 grain doses twice daily. Perchloride of mercury, the most powerful of antiseptics, has not in my experience had the desired effect—at least, in such doses as I have cared to give to children. Arsenic in comparatively large doses I have not yet tested in this connexion.

Tonics may be of use in certain of these neurotic conditions where there is enfeebled general health due to previous disease, but their utility is far less than that of the remedies which act upon the intestines. They do, however, improve the appetite and probably hasten the general metabolism, and they may therefore be usefully combined with the intestinal drugs. Their employment alone, however, is to be deprecated where there is any active auto-intoxication, for in such cases they do not strike at the root of the trouble and only delay improvement by deferring the employment of the proper remedies.

In conjunction with the measures which I have mentioned above to be applied in all those cases in which self-intoxication is the main cause each one of the neuroses requires some special treatment.

*Chorea.*—Besides seclusion, darkness, and quiet, undoubtedly the most effective treatment is that by arsenic in doses of about 15 minims of Fowler's solution twice or three times daily, as advised by Dr. Murray. The success of this method is quite another thing than that attained with arsenic in small doses, and is much more quickly gained. Some evidences of poisoning are apt to arise under this medication, notably nausea and vomiting, and when these occur the best thing is to diminish the dose, not to stop the drug.

*Enuresis nocturna.*—This may be successfully treated, as a rule, by giving bromide of potassium, with either tincture of belladonna or of hyoscyamus, as a nightly dose. It is, moreover, well to administer some alkali, such as citrate of potash, in order to diminish the acidity of the urine, which excessive acid reaction is itself of irritating effect. Of course, should bacteriuria be present it is necessary to locate the cause of the same and to deal with it.

*Migraine.*—Attacks of migraine which depend upon auto-intoxication may, I believe, be successfully cut short by the administration of a smart emetic, and I have known several adults who have asserted that this course more certainly relieved the attack than any other. Of course, antipyrin sometimes succeeds in these cases, but by no means always. It is not clear how emetics produce their effect, but it may be that some of the toxic material is excreted from the blood by the gastric mucous membrane and re-absorbed, in which case an emetic will remove it. On the other hand, it is possible that the act of vomiting stops the headache by the violent stimulus which it affords to the nervous system. I do not think that emetics are ever useful in those migrainous attacks which result from prolonged overwork of the body or mind.

*Tetany.*—For the spasm of tetany the bromides, so far as my experience goes, are by far the most efficient remedies when employed together with the proper treatment for the catarrh of the respiratory or intestinal tracts. Galvanisation is recommended, but I have never had occasion to employ this measure, and I cannot help thinking that in most cases it is unnecessary. Quiet and darkness are strong aids to the successful treatment of this affection.

*Dreaming and nightmare.*—For these symptoms no treatment is required beyond that which deals with the primary cause.

*Epilepsy.*—Undoubtedly the best drugs to employ in epilepsy are the bromides. I am accustomed to give equal quantities of the potassium and ammonium bromide, the total dose to be determined by the result upon the seizures. This combination tends, I think, to resist the depression

which is apt to ensue when the potassium bromide alone is used for long, and for long these drugs must be administered if any permanent good is to be done. They probably act directly upon the cerebral centres. As I had occasion to point out before, epileptic seizures are very apt to continue even when the predisposing cause has apparently been removed, and their continuance is no doubt due to the fact that a morbid habit of action is acquired by the nerve-structures concerned in the convulsive discharge, a habit which is favoured by every seizure. Taken in hand early and treated with perseverance epilepsy is by no means so hopeless a malady in children as one might be led to believe by seeing it in the adult chronic epileptic. Should intestinal worms appear as the cause of this disease, and the proper anthelmintic remedies be administered with apparent success, one must nevertheless bear in mind the obstinacy of these parasites and the fact that they are generally present in numbers. A child can certainly not be regarded as being free from the intruders until the stool has been repeatedly found clear of the ova, and in the case of tapeworms the head must be found. For oxyuris vermicularis I am in the habit of prescribing infusion of quassia internally, coupled with mild purgatives. For tænia male fern is the most successful drug, provided that it be given when the intestines are empty through fasting and that it be helped by a cathartic remedy; but whichever parasite it may be the altered condition of the intestinal mucous membrane will have to be remembered, and this condition will require careful dieting, and possibly saline purgatives, to be continued over a considerable period of time.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following is the prize list for the summer session, 1900:—Barker Anatomical Prize, £21: J. F. Peart. Carmichael Scholarship, £15: A. Charles. Gold and Silver Medals in Operative Surgery: gold medal, E. A. W. Henley; and silver medals, F. W. Lamb and A. H. B. Hartford. Practical Histology: R. W. Burkitt, first prize (£3) and medal; and R. G. Allen, second prize (£1) and certificate. Practical Chemistry: Miss J. Bell and A. N. Crawford (equal), first prize (£2) and medals. Public Health and Forensic Medicine: J. F. L. Keegan, first prize (£3) and medal; and Miss H. A. Hall and W. R. Meredith (equal), second prizes (£1) and certificates. Materia Medica: A. T. Mulhall, first prize (£3) and medal; and J. R. MacManus, second prize (£1) and certificate. Practical Pharmacy: J. J. Connolly, first prize (£3) and medal; and Miss L. Smith, second prize (£1) and certificate. Biology: B. H. Peters, first prize (£3) and medal; and J. J. Connolly, second prize (£1) and certificate. The preliminary examination for the next session will be held on Sept. 26th and 27th. Regulations and students' guide are now ready.

THE BRISTOL ROYAL INFIRMARY.—The accommodation for nurses at the Bristol Royal Infirmary having been found inadequate the home which was fitted up for some of the nurses in 1886 and enlarged in 1896 has been again considerably enlarged and improved. The entire structure now contains bedroom accommodation for 93 nurses. There are also recreation-rooms, reading-rooms, bath-rooms, &c. The whole of the building is lighted by electricity. By the acquisition of an adjoining piece of ground a garden has been made which is sufficiently large to provide a tennis court and other means of outdoor recreation. The cost of the new building, including an extension of site and furnishing, has been about £8600. The expense of furnishing has been defrayed by the carnival which was held at the Zoological Gardens, Clifton, in 1899, and the committee hope that the residents of Bristol, recognising the need of reasonable comfort for the nurses, will subscribe the requisite funds.

THE NOTIFICATION OF MEASLES.—At the meeting of the Ottery St. Mary District Council held on July 6th one of the members proposed that measles should be made a notifiable disease, but after discussion it was determined to postpone further consideration of the matter for three months and in the meantime to obtain the opinion of the Local Government Board upon the subject.—At the meeting of the New Quay (Cornwall) District Council held on July 7th it was decided to continue the inclusion of measles as a notifiable disease, but that in future the notification should be 1*s.* instead of 2*s.* 6*d.*, the medical men of New Quay having agreed to such a reduction.

# The Croonian Lectures

ON

# THE DEGENERATION OF THE NEURONE.

*Delivered before the Royal College of Physicians of London on June 19th, 21st, 26th, and 28th, 1900,*

BY FREDERICK W. MOTT, M.D. LOND., F.R.S.,

PATHOLOGIST TO THE LONDON COUNTY ASYLUMS; PHYSICIAN-IN-CHARGE OF OUT-PATIENTS, CHARING-CROSS HOSPITAL.

## LECTURE IV.[1]

*Delivered on June 28th, 1900.*

### SOME CHRONIC TOXIC CONDITIONS.

MR. PRESIDENT AND GENTLEMEN,—So far I have dealt with experiences relating to poisons producing acute or sub-acute changes in the nerve-cells. I shall now refer to the effects of chronic poisoning of the system, especially in reference to two factors which are the most potent, the most prevalent, and the most persistent poisons in the production of the degeneration of the neurone and which frequently act in combination, affecting not only the nervous system of the individual but also of the offspring. Such are alcohol and syphilis.

### THE CLOSE RELATIONSHIP IN THE ETIOLOGY AND PATHOLOGY OF TABES AND GENERAL PARALYSIS.

Syphilis is the best example of a poison probably, though not proved to be, of microbial origin which has a selective influence upon the nervous system with a remote effect; it is the most important factor in the production of two progressive degenerations of the nervous system, one affecting especially the exogenous afferent spinal neurones—namely, locomotor ataxy; the other affecting the association systems of neurones of the cerebral hemispheres, especially of the frontal and central convolutions—namely, general paralysis of the insane. A striking instance of the selective action of the syphilitic poison is shown in the fact, first pointed out by Sir William Gowers, that only in persons affected with acquired or inherited syphilis is the symptom known as the Argyll-Robertson pupil found; indeed, it is sometimes the only symptom. Seeing that this is the most common objective phenomenon in the two diseases mentioned it strengthens the presumption, based on experience, that the syphilitic poison is the cause of the disease in the majority of instances. It is the opinion of many authorities—and I must say that my experience supports it—that locomotor ataxy and general paralysis are one and the same morbid process, affecting different parts of the nervous system. They are, in my opinion, both a primary and progressive decay of the nervous elements and are etiologically, clinically, and pathologically very closely related. At a discussion held at the Pathological Society of London I supported the view that tabes and general paralysis are one and the same disease affecting different parts of the nervous system. It was asked if this be so, how do you explain the fact that in general paralysis it is the brain, and especially one particular part, which is affected, while in locomotor ataxy it is the cord? Let us consider the effects of poisons like alcohol, lead, ergot, lathyrus, and diseased maize (pellagra). They may produce both peripheral nerve and cord changes together with brain changes in the same individual. It is the individual, his occupation, and habits which determine the seat of the morbid process. In some cases, however, the cord symptoms, on the one hand, predominate and the brain symptoms may be slight, or even absent; on the other hand—and these are the cases of lead and alcoholic poisoning which come into the asylums and are not seen in the hospitals—we have the brain symptoms predominant and the paralytic symptoms often less defined, overshadowed by the brain affection or even absent. So it is with general paralysis. Cases come into the hospitals with Argyll-Robertson pupils, marked paresis, and speech affection, but with the mental symptoms only comparatively slightly developed. Likewise

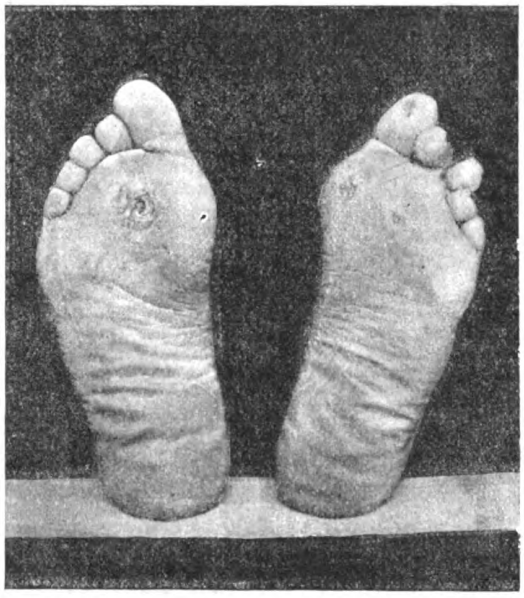
[1] Lectures I., II., and III. were published in THE LANCET of June 23rd and 30th, and July 7th, 1900, respectively.

numerous cases of tabes attend the hospitals for a considerable time and then marked mental symptoms develop, when the case is certified as tabetic general paralysis. In all these degenerative diseases we have more than one factor in operation, and I quite agree with Edinger in his opinion that *stress* will determine the initial localisation of the degenerative process. I do not know that we can learn very much about these primary degenerations from experiments upon animals. However, much valuable knowledge undoubtedly has been obtained by the effects of poisons in producing acute or subacute degeneration of the neurones. Certainly animals have not been inoculated with syphilis. Tuczek, who first described the changes in the nervous system in ergotism and pellagra, was unable to produce these degenerative processes in animals by long-continued feeding with diseased rye, nor have other experimenters been successful with injection of ergotin and sclerotic acid. Likewise, alcohol and lead administered to animals do not produce the characteristic clinical and pathological conditions found in man. Moreover, many other poisons, the products of micro-organisms, produce different effects in man to those produced in animals. The close association of tabes and general paralysis is to my mind clearly shown by the fact that there are a considerable number of cases in which it is difficult to say whether they should be classed from their clinical symptoms and morbid changes found post mortem as tabes with mental symptoms or as cases of tabetic general paralysis. I have seen cases in which the diagnosis of general paralysis has been made because the patients were suffering with mental symptoms indicating that disease—viz., maniacal or melancholic symptoms and delusions associated with ataxy. After a time the mental symptoms have cleared up and the case has then been called tabes. Again, I have frequently seen cases of tabes which begin with all the characteristic phenomena of this disease and then terminate in progressive dementia and paresis, dying in an asylum from general paralysis. Symptoms which are looked upon as characteristic of tabes, such as grey atrophy of the discs, are not at all uncommon in general paralysis (10 per cent.) and I have met even with symmetrical perforating ulcers (Fig. 1) and Charcot's joint. I have recently examined 12 cases of the tabetic form of general paralysis in which the changes in the brain (naked-eye and microscopical) were characteristic of general paralysis and the cords showed the characteristic lesions of tabes. My experience would point to about 10 per cent. of the cases of general paralysis being associated with tabetic cord lesions. The etiological relationship of the two diseases is almost identical; both affections occur usually in the prime of life, are more prevalent among townspeople, affecting men of all grades of society, but as a rule only women of the lower and lower middle class. Again, juvenile general paralysis and juvenile tabes probably occur only in the subjects of congenital syphilis and the sexes are affected with equal frequency. I have met with one case of the latter and 30 cases of the former with 24 post-mortem examinations. In 80 per cent. of the cases of juvenile general paralysis a definite history or signs of syphilis were obtained. A considerable number of cases have now been recorded of married couples being affected with general paralysis. I have recently seen a man who had well-marked signs of syphilis who subsequently died from the tabetic form of general paralysis; his wife, who had healthy children by the first husband and none by this second, is now dying from general paralysis. Dr. T. Buzzard related a similar case at the discussion referred to.

### SOME FACTS CONCERNING THE ETIOLOGY AND PATHOLOGY OF GENERAL PARALYSIS.

There are two types among the juvenile general paralytics: (1) in which the syphilitic poison seemed to have produced an arrest or impaired development of the higher centres, so that the child was weak-minded or imbecile; and (2) in which the child was mentally capable, in some cases highly intelligent and active-minded. The cause of the degenerative process in most of these cases seemed to be associated with the increased psychical *activity*, which must of necessity develop after puberty, when new emotions, objects, and ambitions are awakened by the sexual instinct and the struggle for existence. That psychical activity plays a very important part in this disease as affecting adults is clearly shown by the following facts: the sufferers are nearly all townspeople with a quick reaction time, ambitious and energetic, and the first symptom of the disease may be undue mental activity, approaching now and then to that of genius. It might be argued that a large number of these people are from the lowest and least educated classes; still, I am convinced that they belong to the mentally active class. Not only do we find the people affected possess mental activity but also usually sexual proclivity, and it is very difficult to decide whether the increased sexual activity so frequently met with in the early stages of this disease is a cause or an effect. But all forms of mental excitement are associated with fatigue and too often the neurasthenic condition which precedes the more definite symptoms of the organic brain affection leads to alcoholic excesses, and it is often very difficult to decide whether a case is one of *mania à potu* or of general paralysis. The two are frequently combined, and if so the disease runs a more rapid course. The researches of Bonhofer and Trömner have shown that acute degenerative changes may occur in the cortical cells as a result of acute alcoholism; and I have found, and can therefore agree with Jolly, that in cases of alcoholic dementia there exist organic changes affecting the superficial layers of the cortex and causing atrophy of the tangential fibres. It is, then, probable that although alcohol will not of itself produce general paralysis it will materially increase the rapidity of the progress of the disease. Kraft-Ebbing sums up the etiology of this disease in two words—"civilisation" and "syphilisation"; and he brings forward very strong arguments in favour of the important rôle of syphilis. The recent report for the year 1899 by Dr. J. Warnock from the Egyptian Hospital for the Insane entirely upsets this view. He states: "During 1899 57 general paralytics were under care out of a population of 500. The large towns furnished nearly all the cases of this disease, and syphilis was known to be the cause in 29 of the 35 cases admitted. 24 of them were native Egyptians."

FIG. 1.



Why should general paralysis be associated especially with atrophy of the frontal and central convolutions? It has already been pointed out that in these regions venous stasis is most likely to occur. Psychical activity is associated with hyperæmia of the brain and congestion; those portions of the brain in which the mechanical conditions favour this congestion in the most marked degree would be more likely to suffer from the effects of the congestion. The whole cerebrum and spinal cord waste in general paralysis, but certain regions are earlier and more markedly affected than others—viz., the frontal and central convolutions (*vide* Figs. 2, 3, and 4). These are the regions whose veins drain into the longitudinal sinus and in which, therefore, for reasons previously mentioned, congestive stasis is more liable to occur. If it be admitted that owing (in the majority of cases) to the influence of the syphilitic poison the durability of the nervous system has been lowered, increased psychical activity will tend to exhaustion and disturbance

FIG. 2.

FIG. 4.

FIG. 3.

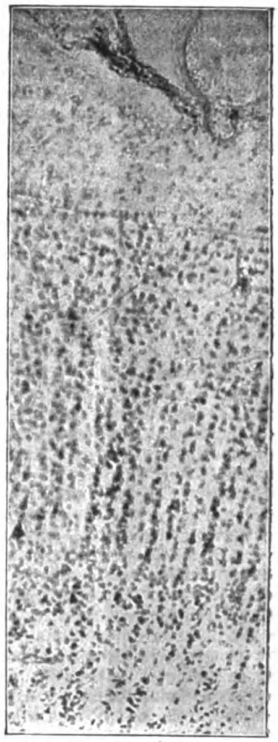


FIG. 5.

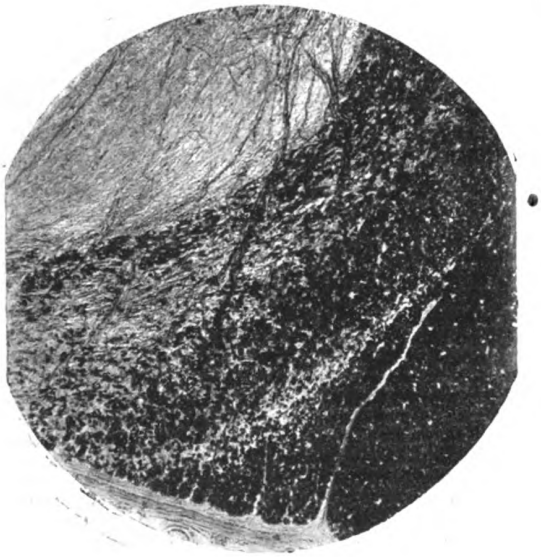


FIG. 6.

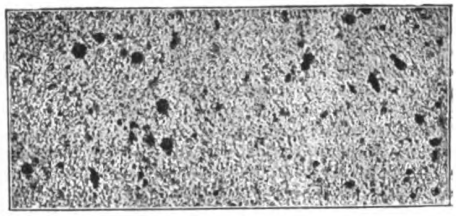
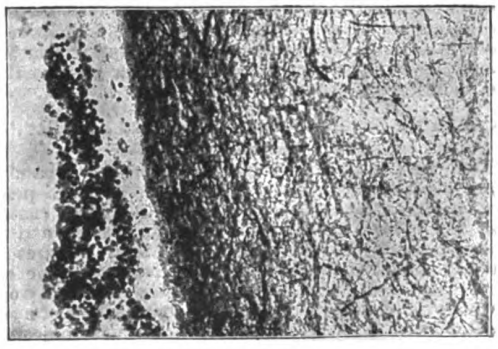


FIG. 7.



of the normal nutritional equilibrium of the neurones. But psychical activity will cause hyperæmia and congestion of the brain, and in regions where there is a tendency to stasis the congestion may persist, especially if it leads to insomnia. A vicious circle becomes established by conditions which tend, on the one hand, to perpetual venous congestion in certain regions, and, on the other hand, to increased excitability of the neurones; these factors mutually interact. It has been argued that in Mohammedan countries where syphilis is rife general paralysis is unknown.

Venous congestion (according to the researches of Waller who has shown that $CO_2$ increases the excitability of nerve) may lead to hyper-excitability of those regions in which the stasis occurs. Likewise there is probably an impaired supply of arterial blood to the brain for the following reasons. The experiments of François Frank show that excitation of the Rolandic area of the cortex causes contraction of the arterioles and rise of blood-pressure; observations which I have made upon the blood-pressure in general paralysis by Hill's sphygmometer entirely accord with the results obtained by Leonard Hill and Craig. There is a considerable rise in the arterial pressure above the normal and this is increased markedly during the occurrence of seizures, whether congestive or epileptiform. The blue condition of the skin and the coldness of the hands and feet of patients suffering with general paralysis suggest a small amount of blood in the arterial system and a large amount in the venous. Although we find this high arterial pressure there is seldom marked hypertrophy of the left ventricle, and I have found that if a patient has a great number of epileptiform seizures the arterial pressure falls and right heart distension and sometimes a condition of asphyxia arise, with great engorgement of the veins, and death in consequence. The heart muscle in these cases exhibits early and often extensive fatty degeneration, due to a combination of causes—insufficient oxygenation of the blood, auto-intoxication probably from fatigue products, and increased destructive metabolism owing to the much greater resistance to be overcome. Not only the heart but also the striated muscles show this change. I could not find evidence of degeneration of nerves to account for this change, neither do I believe this to be the effective cause, seeing that exactly the same changes in heart, diaphragm, and other striped muscles have been found by me in seven cases of status epilepticus.[2] Some of the latter patients prior to the fits were in perfect health. In connexion with this I may mention that the venous congestion of the brain caused by the status epilepticus produced marked changes in the cells of the cerebral cortex, changes which corresponded with the appearances presented by many of the large pyramidal cells in general paralysis and not unlike those found in experimental anæmia with convulsions. There was great swelling of the cell (œdema), disappearance or disintegration of the Nissl granules, often eccentric position of the nucleus, and dilatation of the peri-neuronal and peri-vascular lymph spaces. Moreover, epilepsy frequently ends in dementia, and we find in such cases atrophy of the tangential super-radial and inter-radial association fibres, a condition which is always found in general paralysis even in the earliest stages before any fits occur. Dr. George Watson, who has looked over a large number of my specimens, reports that in 20 cases which he has examined he found the tangential fibres, the super-radial and inter-radial fibres atrophied in all the 16 cases of general paralysis, but that of these 16 none showed any recent change by the Marchi method; consequently we must suppose the atrophy was of some considerable standing, and probably years before the patient comes to an asylum a regressive change has commenced in these latest morphologically-developed structures. Occasionally I have been able to show that the tangential fibres of Broca's convolution are more atrophied on the left than the right side when the left hemisphere has weighed less than the right. The four cases in which he did not find atrophy of the association systems mentioned were primary degenerations of projection systems—viz., two of amyotrophic lateral sclerosis, one of combined sclerosis, and one of universal syphilitic arteritis. In a considerable number of the cases of general paralysis there was recent degeneration of the radial fibres, especially in those cases where there had been epileptiform seizures. The perivascular lymphatics also contained the fatty products of degeneration. We can thus understand that a number of contributory factors may arise to establish a vicious circle which is continually enlarging until a fatal termination occurs. Such factors may not only lead to rapid destruction of the neurones or nervous elements, but by irritation lead to a proliferative formation of the neuroglia cells, and we can account for the ependymal granulations almost invariably met with in this disease by the irritation caused by an altered cerebro-spinal fluid. They are, however, not found exclusively in general paralysis.

[2] Vide Archives of Neurology, p. 493.

### General Paralysis a Primary Degeneration.

The morbid process in general paralysis has been considered by Mendel and many other authorities to be a primary meningo-encephalitis. I would advance the following reasons for considering it a primary degeneration of the neurone with secondary meningo-encephalitis:—1. Its relation to tabes dorsalis and the probability of its being the same morbid process due to the same cause (syphilis) commencing in a different part of the nervous system. 2. The existence of the Argyll-Robertson pupil in the majority of cases. 3. The existence of grey atrophy of the discs in a number of cases, much more frequent than can be explained by mere coincidence. The last two symptoms cannot be explained except by a primary atrophy. 4. The evidence of a wasting of the whole nervous system, but out of all proportion to the evidences of inflammation affecting some parts more than others. This wasting must be primary in the nervous system and not secondary to bodily disease, for in no cachectic disease or even in starvation do we find extensive wasting take place. 5. The thickening of the pia-arachnoid membrane is proportional to, and corresponds with, the degree and locality of the atrophy; so it is with tabes. 6. In many cases of tabes, especially those with mental symptoms, atrophy of the tangential and super-radial association fibres of the brain are found quite similar to but often in different situations to general paralysis. 7. In diseases with well-marked meningo-encephalitis, about which there can be no dispute that it is primarily an inflammatory process, we do not find this extreme atrophy. In illustration of this I would call attention to two cases of African lethargy which I had the opportunity of examining and of describing[3] for the first time the histological changes in the central nervous system. Throughout the whole central nervous system in both these cases there was evidence of a profound and widespread chronic inflammatory process. The whole of the perivascular lymphatics were choked up with mononuclear leucocytes. The pia-arachnoid membrane was similarly infiltrated, indicating the existence in the cerebro-spinal fluid or blood of an irritant poison the nature of which I was quite unable to discover, although the most painstaking efforts were made by myself and Dr. Bulloch, both post mortem and during life, to discover a micro-organism. The only abnormal condition that was found in the blood of these negroes, as also in a previous case of Dr. Stephen Mackenzie's (the tissues of which by his courtesy I was able to examine and observed similar histological changes), was the existence of the embryo filaria perstans in the blood. The evidence of this being the cause of the symptoms or of the morbid process found in the nervous system is wholly inadequate. Although there was this chronic inflammation, yet throughout the nervous system there was far less cellular atrophy and nerve-fibre destruction, even in the most advanced case, than one meets with in quite the early stages of general paralysis. In fact, the brains showed little or no atrophy or change to the naked eye; and microscopically there was very little disarrangement of Meynert's columns in one case. The weight of the brains showed little deviation from the normal in one case and none in the other, whereas the bodies were extremely emaciated in both cases. I think this evidence tends to show that there is a primary atrophy in general paralysis and that the inflammatory and vascular changes are secondary complications. Primary degeneration of the neurones may affect the afferent, efferent, or association systems, singly or combined, and in the tabetic form of general paralysis all three may be affected.

[3] Brit. Med. Jour., 1899.

### Primary Degeneration of the Afferent System of Neurones.

In tabes we have an example of degeneration of the

afferent projection system which, for reasons already mentioned, is probably due to nutritional failure on the part of the posterior spinal neurone, by which parts most remote from the centre of nutrition undergo a regressive atrophy. The cells of origin seldom undergo marked changes unless pigmentation can be considered evidence of degeneration, but there seems to be some reason why the cells of the posterior spinal ganglia should be able to maintain a trophic independence. Possibly it may be the existence of the capsule, or possibly the cells receive stimuli from the viscera by sympathetic branches, or, lastly, it may be that they have become more or less independent of the influence of stimuli by the impulses from the periphery travelling directly across the T-shaped process. Again, after section of the posterior spinal roots I did not find any change in the posterior spinal ganglion cells. Moreover, we know that in amputation cases of long duration, although the nerves and posterior roots waste, the spinal ganglion cells undergo little change. It is particularly the central projection of the neurone that undergoes the degenerative process in tabes, and from the experimental evidence above adduced this would not suffice to cause changes in the cell. The peripheral portion of the neurone—viz., the sensory peripheral nerves—have been shown to undergo regressive atrophy and degeneration from the termination towards the centre. We know that the peripheral portion of the T-shaped process is ensheathed by the hollow mesoblastic cells forming the sheath of Schwann, and which we have shown for many reasons probably exercises an indirect trophic influence upon the long axis-cylinder process.

Again, in tabes, the idea that a sclerosis of the posterior columns produced by an irritative proliferation of the glia tissue is the initial morbid process causing a secondary degenerative atrophy is the result of confusion of cause and effect. The overgrowth of the glia tissue is the result of, and proportional to, the primary progressive atrophy of the nervous elements, for we cannot suppose that the glia tissue would electively destroy exogenous fibres, leaving the endogenous intact. In support of this statement I show a photomicrograph of the sixth cervical segment of the spinal cord of a monkey in which the third, fourth, fifth, sixth, and seventh cervical and first, second, and third dorsal posterior spinal roots were cut on the left side. The eighth cervical, which especially supplies the hand, was not cut. This animal was kept alive six months, and it was after a time very difficult to determine upon which side the operation had been performed, as it used each hand equally well, thus behaving entirely different to the animals which had had all the roots cut.[4] The result of this operation is shown in two bands of sclerosis in the posterior column on the side of the divided roots, with an area of normal fibres corresponding to the undivided root lying between (Fig. 5).

It will be observed in this photo-micrograph of the sixth cervical segment that fine fibres are passing across the area of sclerosis to the grey matter of the posterior horn; in not a single section of all the segments of the upper part of the cord could I find the absence of these fibres, which could only be terminal branches of the undivided eighth root. This points to the probability of the overlapping of roots of spinal segments. It certainly shows that sclerosis does not cause atrophy of fibres, for here is a band of fibres lying between two definite bands of sclerosis with delicate fibres passing across the sclerosed area. Obersteiner has maintained that the degeneration of the posterior columns is due to a meningitis affecting the roots at their entry, thereby compressing the accompanying nutrient vessels; but there are so many facts against this theory which will occur to everyone upon consideration that I need not mention them. Suffice it to say that one does not find this same degeneration of the posterior columns in obvious cases of meningitis, syphilitic in origin. Obersteiner figures specimens stained by the Pal method showing as the fibres pass through the membranes to enter the cord disappearance of the staining. This, however, must not be taken as indisputable evidence of degeneration at this particular point because the anterior roots sometimes show a similar defect in staining upon their emergence from the cord. Moreover, the meningitis theory does not explain the changes in the peripheral nerves met with in this disease, nor does it explain the affection of the posterior roots as far back as the ganglion, leaving the anterior roots quite intact. That some anatomical condition of the circulation in the posterior columns may act as a contributory factor, as occurs in the frontal and central convolutions in general paralysis, is possible, especially when one considers the effects of cerebral tumour in the production of degeneration limited to the posterior columns (Hoche, Batten).

[4] Mott and Sherrington: Proceedings of the Royal Society, 1895.

### PRIMARY DEGENERATION OF THE EFFERENT SYSTEM.

In amyotrophic lateral sclerosis we have an example of a systemic degeneration affecting the motor efferent system of neurones from cortex to periphery. I have had the opportunity of examining three typical cases of this disease; in all three I have found degeneration of the whole efferent system comprising the cortico-spinal neurone and the spinal muscular neurone, the degeneration being limited to these neurones alone. This was pointed out by Sir William Gowers in the first edition of his manual. Certain groups of the motor spinal neurones we know from clinical and microscopical observation are affected before others—e.g., the postero-external group in the eighth cervical and first dorsal segments of the cord is especially proved to be the seat of the earliest and most severe change in a large number of cases. This is a group of neurones which presides over the small muscles of the hand. I am of opinion that the morbid process in these systemic degenerations commences at the periphery of the neurone and extends back towards the trophic and genetic cells of origin, finally, in prolonged cases, causing the destruction of the cells themselves. The arguments I would advance in favour of this view are that in some cases of amyotrophic lateral sclerosis degeneration could only be followed as far as the pyramids, in others to the crus cerebri, while in other cases, published by Charcot and Marie, Kahler and Pick, and Kowjenikoff, the atrophy had extended to the pyramidal cells of the cortex. In the case referred to by the last observer there was even atrophy of the motor convolutions with thickening of the membranes; this I have also observed in one of the three cases I have above mentioned. In two of the three cases which I have examined there was not only degeneration, discoverable by the Marchi method, of the whole cortico-spinal neurones, but of the lateral branches which pass off from the axis-cylinder processes to enter the corpus callosum (*vide* Fig. 6). This degeneration of the motor fibres in the corpus callosum strongly favours the primary degeneration theory of the origin of the disease being a nutritional degradation of the neurones themselves independent of external vascular or supporting tissue changes. Moreover, in these cases I have found that the tangential, super-, and inter-radial systems of fibres were intact (*vide* Fig. 7). Now, if it were any external condition these neurones would have suffered with the motor neurones. Senator published a case of typical amyotrophic lateral sclerosis in which there was no degeneration found in the pyramidal tracts. We can only explain the symptoms by supposing that there was interruption between the cortico-spinal and spinal muscular neurones, either a failure of junction between the two, or possibly, in view of the opinion of von Monakow and of the recent interesting observations of Schäfer, an atrophy of intermediate cells (of Golgi) (*vide* Fig. 8). Schäfer is of opinion, based upon observations made by the Marchi method on spinal cords of animals on which he had performed hemisection of the spinal cord, that the fibres of the pyramidal tract do not end in the terminal arborisation around the anterior horn (spino-muscular neurones), but are in connexion with intermediate cells situated at the base of the posterior horn; if this doctrine be true a voluntary motor impulse will pass through three sets of neurones instead of two. There is always a considerable amount of cellular atrophy at the base of the posterior horn in amyotrophic lateral sclerosis, therefore the appearances presented by this disease do not negative this theory.

### DEGENERATION OF AFFERENT AND EFFERENT SYSTEMS.

Both afferent and efferent tracts of the spinal cord may undergo degeneration, giving rise to the condition known as "combined sclerosis" which is met with in various forms of grave anæmia and in pernicious anæmia, first thus described by Lichtheim and Minnich, also in ergotism, pellagra, and lathyrism. This degeneration cannot be produced experimentally in animals, and we must suppose that some auto-intoxication occurs by which a progressive degeneration affecting primarily the long tract afferent and efferent systems in the cord takes place. I have had the opportunity of examining microscopically three cases of combined sclerosis with grave anæmia, and I found that the process of degeneration was not limited to the spinal cord. In two

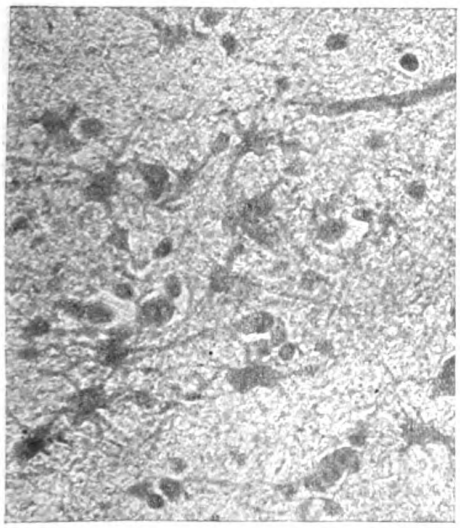
cases which I examined by the Nissl method there were marked changes in the cortical pyramidal cells, and when examined by the Marchi method all these cases showed degeneration in the whole pyramidal system from the cortex downwards, although it was more marked and extensive in the spinal cord than in the pyramid and pons. Likewise, the cells of Clarke's column showed in two cases examined by the Nissl method degenerative changes, and both ventral and dorsal cerebellar tracts were extremely degenerated. The changes, however, in the posterior spinal ganglia were but slight, probably for the same reasons as I have mentioned in referring to tabes.

A valuable paper on Sub-acute Combined Degeneration has recently appeared in *Brain* by Batten, Russell, and Collier. 12 cases are narrated and seven necropsies with microscopical examinations. The authors are of opinion that the disease is a degeneration due to a toxic agent in the blood.

### POLYNEURITIS.

Multiple polyneuritis occurs as the result of toxæmia. The poisons which give rise to the condition are numerous, but by far the most common is alcohol, and it is about this that I shall speak more particularly. Alcohol affects not only the peripheral nerves but the brain too, where it produces degenerative changes accounting for the symptoms manifested by the patients during life. A consideration of the extent of surface of the motor and sensory neurones shows that relatively the portions covered with the myelin sheath and sheath of Schwann, as compared with the rest of the neurone, are enormous. For it is obvious that the neurones supplying sensation to the soles of the feet and the motor neurones supplying the muscles of the feet are from three to four feet long, and if we admit that the trophic centres are in the cells of origin at the lower end of the spinal cord, then it is quite obvious that parts so remote from the trophic and genetic centre will suffer from nutritional failure caused by the insidious action of toxic

FIG. 8.



substances such as alcohol. As the effects of the poison become more marked so the functional defect in sensation and movement travel up the legs towards the centres, so that we have in peripheral neuritis an anæsthesia progressing in the manner one puts on a stocking, and as sensation returns in recovery it proceeds as one takes off a stocking, except that there is not a sharp upper border. This would quite accord with the fact that the parts most remote from the centres of nutrition are the first to be affected and the last to recover. Very probably also the parts most remote from the centre of circulation, the heart, are more liable to be affected. Thus, the extremities of the limbs are most affected as regards movement and sensation, and it seems that mineral poisons, arsenic, lead, &c., and alcohol, which are taken into the system for some time before effects are produced, act more particularly on the peripheral nerves. There is very little evidence in these cases of the poison producing interstitial inflammation, neither do we find changes sufficiently marked, as a rule, in the ganglion cells to account for the symptoms. The earliest and most obvious change is a proliferation of the nuclei of the sheath of Schwann, and this condition may be found before microscopical evidence exists of the degeneration of the myelin sheath, as revealed by the Marchi method. This does not, however, show that changes have not taken place in the myelin sheath, for the following reasons. The products of degeneration, we know from experimental section of the nerves, are rapidly absorbed and are by no means so obvious as in the central nervous system. Again, a chemical change may have taken place in the protagon, which has not advanced to a stage in which a non-phosphoretted fat, essential for the Marchi reaction, has been produced. We know that for at least four days after section of the nerve the Marchi reaction is not given, and yet we have no reason to believe that protagon has not been undergoing a chemical change during that period. Again, the nerve fibres are not all affected simultaneously, some fibres being affected more than others. It may be asked, if the poison, which has been accumulating in the system and producing its toxic effects on the nervous system, acts upon the whole neurone, why are changes not seen throughout the whole neurone? and why should the poison not be the effect of irritation of the chain of tubular mesoblastic cells which surround the axis-cylinder process of the neurone? If it were so there is no reason why it should not affect the nerves of all parts of the body equally. I conceive that this proliferation of the nuclei of the sheath of Schwann is due to a disturbance of the normal physiological nutritional interrelationship between the neurone and the cells which ensheath its axis-cylinder process. It is a vital reaction on the part of these cells to the progressive nutritional failure of the neurone which will eventually terminate in destruction of the essential conducting axis-cylinder. In fact, we know that this takes place when a nerve is cut, and it is a provision for repair; therefore it is wrong to look upon this proliferation of nuclei of the sheath as evidence of irritative effects of the poison, but rather as an attempt to repair the destruction caused by the poison.

In three cases of alcoholic neuritis which I have lately examined in conjunction with Mrs. Hamilton Williams, M.B., it was found that many of the nerves did not show very marked evidence of degeneration by the Marchi method; there was, however, considerable nuclear proliferation of the sheath of Schwann, especially marked in the nerves of the lower extremities. In one case in which there was complete paraplegia the ganglion cells of the lumbar-sacral spinal cord showed well-marked chromolytic changes; the Nissl granules in many of the cells of the anterior cornua had entirely disappeared; the nucleus was eccentric and the processes broken off; and some of the cells were vacuolated (*vide* Figs. 9, 10, 11, and 12). Marked degenerative changes were also observable in nearly all the nerves of the limbs by the Marchi method (*vide* Figs. 13 and 14).

From previous experience and from the electrical reactions which the muscles gave during life I should conclude that a great number of the cells would recover under favourable circumstances. The changes in most of the cells resembled rather the condition which one would find after section of a nerve, the reaction phase, mentioned in Lecture II.; in fact, when we consider it, the condition is really very much the same as that produced by section, for the axis-cylinder processes of the sensory and motor nerves have in advanced cases died for a considerable part of their extent, but under favourable circumstances, especially if the poisonous influence be removed and the nutrition of the muscles be maintained by appropriate treatment, there is no reason why, the same as in section of a nerve, regeneration should not take place. The great thing to remember is that the joints should not be allowed to become stiff or the muscles inactive. Passive movements, massage, and galvanism will stimulate the neurones and hasten regeneration, for we have already had abundant evidence to show the important influence stimulus exercises upon the metabolism of the neurones and the degenerating and atrophic effects of non-stimulation. In two of these cases, in which there was marked fatty degeneration of the heart, we found fatty degeneration of the fine myelinated fibres of the vagus (*vide* Fig. 14).

Examination of the brains of all three cases showed a certain amount of atrophy of the tangential systems of fibres, accounting for the dementia which existed in all three cases. There were also changes revealed by the Nissl method in the cortical pyramidal cells, but seeing that there was no degeneration discovered by the Marchi method in the

FIG. 9.

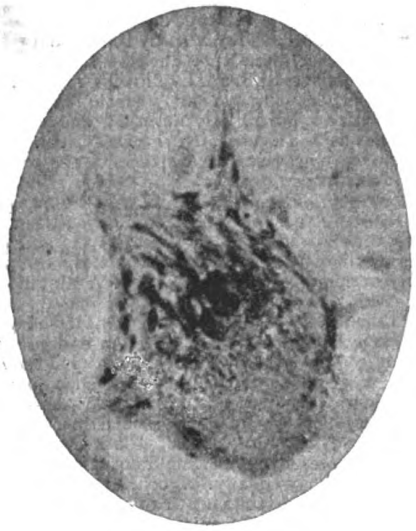


FIG. 10

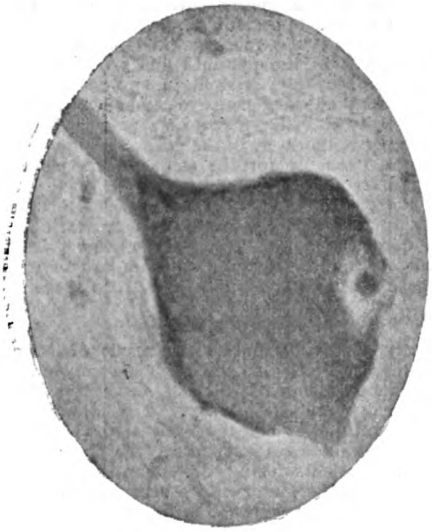


FIG. 11

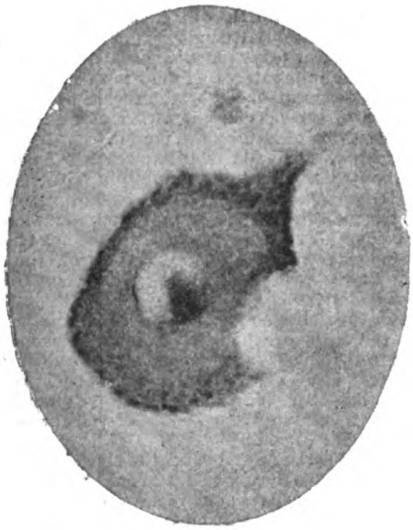


FIG. 12.

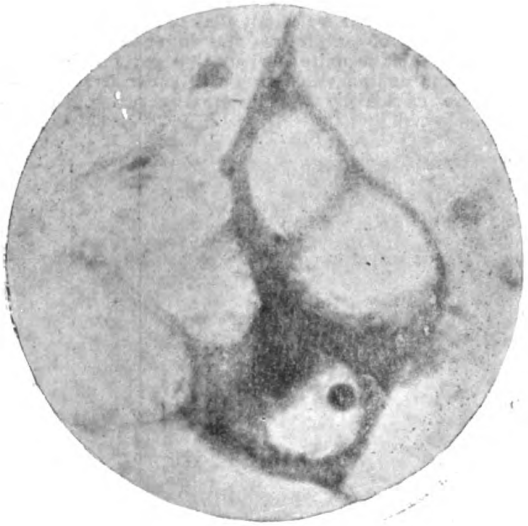


FIG. 13.

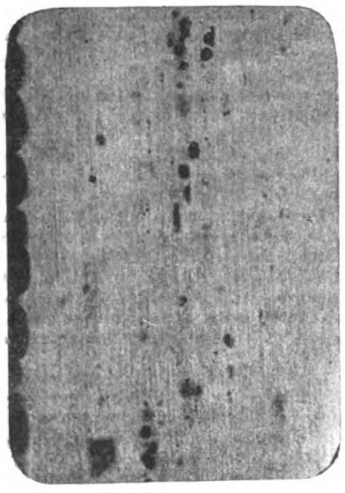
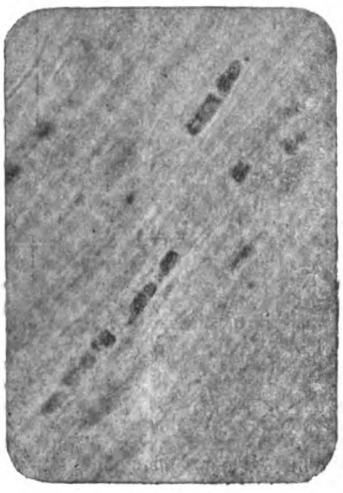


FIG. 14.



spinal cord we cannot assume that these were more than of a functional nature. In one case there were marked congestion and microscopical intra-cerebral hæmorrhages. The condition of the cortex could not be mistaken for general paralysis, for there was not the same overgrowth of glia cells or atrophy, nor was there the same disappearance of Meynert's columns so characteristic of the latter disease.

### RELATION OF STIMULUS TO DEGENERATION OF THE NEURONE.

Structure and function are mutually reciprocal and interdependent and we know that a structure which is not used will gradually lose its function, while its nutrition will also suffer and in time atrophy may occur. Consciously and unconsciously a continuous stream of impulses is pouring into the nervous system from without by the sensory channels, which are the avenues of experience and intelligence, and our bodily and psychical life depends upon the existence of such stimuli.

Excess of normal stimulation of itself is seldom the cause of organic disease, although we have examples of psychomotor paralyses in the palsy affecting scriveners, typewriters, pianoforte players, violinists, hammer-men, &c., but whether this is due to an actual degeneration or to a functional depression is not known. If, however, by excessive exercise such a disturbance can take place without any other apparent cause, then undoubtedly stress acting upon structures in a state of nutritional deficiency will lead to a disturbance of the normal physiological equilibrium and a progressive degeneration of those structures which are most remote from the centre of nutrition. Increased functional activity of a part, however, is asscciated with increased blood-supply, and if the blood contains a toxic substance a larger amount of that toxic substance will be carried to the functionally active part, so that whatever benefit might arise in the way of repair from the additional amount of blood will be neutralised by the excess of poison. Numbers of instances have occurred in my experience in which stress seemed to determine the seat of the degenerative process. I will give a few illustrations. 1. A policeman who was affected with tabes commencing in the arms turned out to be a mounted policeman, and when I pointed out to the students the unusual situation he immediately volunteered the information that the pains began in the arm in which he held the reins. 2. A case of amyotrophic sclerosis affecting a cooper began in the muscles of the right arm with which he wielded a four pound hammer. 3. A man who had alcoholic dementia, paralysis, and wasting of the muscles of the upper extremities, the lower being unaffected, was shown to me as a case of progressive muscular atrophy. I found that he was a porter and the symptoms he presented were determined by his occupation of carrying boxes all day on his shoulders. This patient completely recovered. I will not detain you with a number of further examples, but asylum experience only too well demonstrates the importance of undue mental excitement in causing degeneration of the higher structures of the brain, as in general paralysis. Professor Edinger has emphasised the important influence of stress in determining the seat of nervous degeneration, and his philosophical writings on the subject are worthy of careful consideration; he has, too, endeavoured to prove it experimentally.

Voss was unable to produce degeneration in the spinal cord in rabbits, guinea-pigs, and dogs by injections of pyridine sufficient to produce a severe anæmia; but Edinger repeated these experiments, varying them by inducing stress upon the nervous system by various means, one of which was to place the animals (rats) in a wheel cage. He claims then to have shown: (1) that abnormal stress can produce in animals a degeneration of the posterior columns; (2) that it is possible to produce a predisposition by artificial anæmia by which the influence of stress of much less degree and of much shorter duration can cause this posterior column degeneration; and (3) that this disease stands in close relationship, both as to localisation and cause, to the tabetic degeneration of the posterior columns in man.

### RELATION OF HEREDITY TO DEGENERATION OF THE NEURONE.

Of all the causes of nervous disease hereditary predisposition stands pre-eminently first. It may be paternal, maternal, convergent, from grandparents, or, according to Weissmann's theory of the continuity of the germinal plasm, there is no limit to the remoteness of the origin of a neuropathic taint. This doctrine must have been known to the high-born Romans who carried the masks of all their ancestors upon public occasions. In fact, in Lucretius it is stated: "Sometimes, too, the children may spring up like their grandfathers, and often resemble the forms of their grandfather's fathers, because the parents often keep concealed in their bodies many first beginnings mixed in many ways, which first proceeding from the original stock one father hands down to the next father, and then from these Venus produces forms after a manifold chance and repeats not only the features but the voices and hair of forefathers; and the female sex equally springs from the father's seed, and males go forth equally from the mother's body, since these distinctions no more proceed from the fixed seed of one or other parent than our face and bodies and limbs. Again, we perceive that the mind is begotten along with the body and grows up together with it and becomes old along with it." The history of the Roman emperors from Julius Cæsar, one of the greatest geniuses the world has seen, but an epileptic, shows how the endeavour to keep the sacred Julian blood for the dynasty culminated under the influence of a depraved environment in the criminal madness of Tiberius, Messalina, Caligula, and Nero. Strictly speaking, it is the tendency to nervous disease rather than the disease itself which is inherited, and this is frequently spoken of as neuropathic or neuro-psychopathic taint. There are, besides, a number of inherited diseases which, although rare, are of great interest, inasmuch as they affect members of a family, the disease frequently commencing in each individual at about the same age. These are termed "family diseases" and include hereditary ataxia (Friedreich's disease), amaurotic idiocy, hereditary chorea, and paramyoclonus multiplex, an interesting family of cases of which I have recently seen. Two boys and two girls were affected with epilepsy and this clonic choreiform spasm of the muscles; in each it commenced at the age of 15 years. There was no direct hereditary history in the parents of any nervous affection, but an uncle suffered from epilepsy. Presumably, therefore, ancestral germinal plasm possessed the neuropathic predisposition, which possibly under some influence which I was unable to ascertain—e.g., some acute specific fever affecting the members of the family or possibly alcoholism or syphilis in the parents—had supplied the contributory factor to develop the disease. In a healthy nervous system we must suppose that the balance of potential is high and that the sense of fatigue is the natural indication for sleep and repose by which nervous energy may be recuperated. The neuropath may be conceived to possess in some portion of his nervous system communities, groups, and systems of neurones, either of defective durability or with an inherited low potential, readily becoming exhausted and especially liable to functional depression, and which under the influence of contributory factors such as toxic conditions of the blood or undue stress undergo premature degeneration. To explain the inherited neuropathic tendency morphologically we may suppose that there is an inherent defect in the germinal plasm which is concerned in the formation of the neurones.

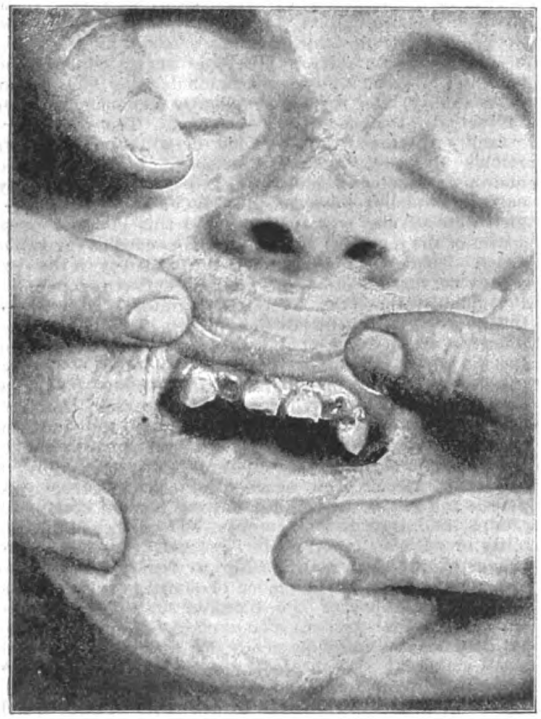
Certain acquired conditions in the parents, affecting them especially at the time of conception, are liable to produce this defect in the germinal plasm; they are acute and chronic alcoholism, syphilis, and tuberculosis. Statistics by Mr. Tredgold relating to 40 cases of congenital imbecility, although not numerous, are valuable because reliable, and in course of time, when he has completed the investigation of this question in all the London county asylums, as he has done at Claybury Asylum, will be of still more value. As far as they go they show that the most important cause of congenital imbecility is inherited neuropathic taint (70 per cent.), generally in some form of insanity,[5] but that alcoholism, syphilis, and tuberculosis are important contributory factors. My own researches on juvenile general paralysis, of which I have now had the opportunity of examining 50 cases, show: (1) that the disease affects both sexes equally; (2) that it may commence at any age from eight to 23 years,[6] according

[5] It is very interesting to note that two of the cases of imbecility with congenital syphilis have become juvenile general paralytics, and in neither of these cases was there a family history of insanity which is independent corroboration of my observations, as neither of these cases are included in my 30 cases.

[6] It is possible that some of the cases occurring in adults in which no history of acquired syphilis can be obtained may still owe the disease to an inherited taint. It is not necessary that they should show external signs of syphilis, for many of the cases which I have recorded were proved to be born of syphilitic parents although manifesting themselves no external signs of disease.

to my statistics; and (3) that in 80 per cent. of the cases there were either undoubted signs or history of congenital syphilis and that in 20 per cent. it could not be excluded. Therefore we may assume that the effect of syphilis on the germinal plasm on one or both of the parents is the essential cause. In the greater proportion of the cases I was unable to obtain a history of insanity or nervous disease in the family, although it was remarkable that in four of the cases and also in one hereditary case of tabes the fathers suffered with general paralysis. The notes of their cases give no evidence of their having acquired syphilis, yet in four out of the five cases there were distinct and well-marked signs in their offspring. From a very careful study of the family histories of these cases I was led to believe that the germinal plasm of the parents, particularly of the father, may be very unequally affected by the syphilitic poison, and it seemed to me that the inherited syphilis was not infrequently the result of spermatic infection only. Many of the mothers never had any illness that they knew of, yet some of their children showed syphilitic teeth, chorio-retinitis, rhagades, and other characteristic signs, while

FIG. 15.



other children appeared perfectly healthy (*vide* Figs. 15 and 16). Generally, however, the history was—miscarriages, still births, syphilitic children, and healthy children in succession. In one family there were three children; the eldest had no external signs of congenital syphilis, but a syphilitic liver was found post mortem. He was an able-bodied seamen, but at the age of 20 years broke down with general paralysis. I consider that this was induced by stress, for he was on duty in the Mediterranean just at the Fashoda crisis and the disease commenced by a fit. The next brother had a characteristic syphilitic nose and teeth but was earning his living as an artisan. The youngest boy is an imbecile in an asylum (*vide* Fig. 16), with characteristic objective signs of congenital syphilis. Another family was interesting in this respect that the eldest daughter of a mother who gave a history of infection showed no signs of syphilis on the body yet died from general paralysis. The next daughter presented well-marked external signs, but at present is healthy otherwise. The majority of the 30 cases gave some interesting details bearing upon this question. Another factor which seemed to have an important bearing upon the occurrence of general paralysis in children of parents suffering with syphilis was the existence of chronic alcoholism in one or both the parents. Thus we see impaired vitality of specialised structures may result from devitalising influences acting upon the germinal plasm of one or both the parents. With regard to the toxic influence of alcohol on the nervous system I have been particularly struck with this fact, that although at least 20 per cent. of the people admitted into the London county asylums yield a history of intemperance as the cause of their mental symptoms, yet I only once remember seeing in the post-mortem room of the asylums a case of well-marked cirrhosis of the liver with ascites. That was in the case of a person celebrated in the police-courts who was convicted nearly 400 times of drunkenness before she was found to be certifiable as incapable of taking care of herself. One must suppose, therefore, that these people who come into the asylum are very susceptible to the toxic influence of alcohol and long before they could drink sufficient to produce cirrhosis of the liver symptoms of alcoholic poisoning of the nervous system arise. In fact, it would rather show that a person who can drink sufficiently long to get a hob-nailed liver has inherited a nervous system of unusual stability. To the mentally unstable alcohol is a poison, and I have been particularly

FIG. 16.

struck with the fact that it acts even in moderate quantities as a poison on women at the climacteric period when potential is low in the nervous system. Another class of individuals often potential to whom alcohol is unquestionably dangerous is the neurasthenic. The sense of fatigue, whether of mind or body, is physiological and protective. It should be responded to by rest; but the active-minded town-dweller who is suffering from nervous exhaustion takes spirits to enable him to make up the deficient energy. He draws, so to speak, a bill on his health which must always be renewed at a higher rate of interest. My own observations and those of Mr. Tredgold, the technical scholar, entirely agree with the observations of numerous authorities who have shown that epilepsy, insanity, imbecility, idiocy, mental weakness, and loss of moral control and will power are frequently the heritage of children born of drunken parents.

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DESCRIPTION OF ILLUSTRATIONS.

FIG. 1.—Symmetrical perforating ulcers from a case of tabetic general paralysis.

FIG. 2.—Section of ascending frontal convolution from a case of general paralysis showing engorgement of vessels, disappearance of Meynert's columns from displacement of the nerve-cells, and overgrowth of glia cells.

FIG. 3.—Section of occipital lobe from same case showing practically normal appearance of the cortex. The Meynert's columns are distinctly seen and there are no vascular changes.

FIG. 4.—Case of juvenile general paralysis from which these preparations were made. Photograph shows Hutchinson's teeth and rhagades round the mouth.

FIG. 5.—Described in text.

FIG. 6.—Section of the corpus callosum from a case of amyotrophic lateral sclerosis showing large black degenerated fibres in transverse section.

FIG. 7.—Section of the superficial cortex cerebri of the Rolandic area stained by Marchi-Pal method showing the super-radial and tangential fibres intact.

FIG. 8.—Section of lower portion of grey matter showing absence of large pyramidal cells and replacement by Deiters' cells. This occurred in little isolated foci of the motor area of the cortex.

FIGS. 9, 10, 11, and 12, are photo-micrographs of cells of the anterior horns of the lumbo-sacral enlargement from a case of a woman with severe alcoholic paraplegia with extensive muscular atrophy and degenerative changes in the muscles and nerves of the legs. Magnification 600.

FIG. 9 shows a cell with commencing chromolytic change.

FIG 10 shows a cell with advanced chromolytic change and eccentric nucleus. Both of these cells resemble the appearances presented by cells after section of a nerve and the change may be due to the morbid process having caused destruction of their axis-cylinder process. They, however, are capable of regenerating the axis-cylinder process, the same as may occur after section of a nerve.

FIGS. 11 and 12 show, on the other hand, morphological changes indicating death of the trophic and genetic centre. We see in Fig. 11 a concavity on one side indicating rupture of the nuclear membrane, and in Fig. 12 there is so much vacuolation of the protoplasm of the cell as to indicate its destruction.

FIG. 13 is a section of the external popliteal nerve, stained by Marchi method. The black degenerated myelin is not very abundant because it has in great part been absorbed, but other stains—e.g., Stroebe—show that hardly any healthy fibres exist. This preparation is from the same case as the cells described above. Magnification 200.

FIG. 14.—Section of the vagus nerve from a case of acute alcoholic neuritis with hæmorrhagic encephalitis and dementia. The patient suffered with very marked signs of cardiac failure and died comparatively suddenly. Marked fatty degeneration of the heart was found post mortem. The section stained by Marchi method shows fine medullated fibres undergoing degeneration. Magnification 600 diameters.

FIG. 15.—Case of tabetic form of juvenile general paralysis which died, aged 20 years, three months after onset of symptoms. The photograph shows characteristic teeth.

FIG. 16.—Photograph of congenital imbecile with depressed bridge of the nose. He also had Hutchinson's teeth. A brother who died from juvenile general paralysis showed no such external signs.

**THE EXETER DISPENSARY.**—A special meeting of the governors of the Exeter Dispensary was held on June 30th under the presidency of Mr. S. Ward, J.P. It was decided to add two medical officers to the staff of the institution and it was further determined that any member of the medical staff who wished to do so should be allowed to limit the number of patients admitted under him on his day to 20 recommends, provided he did not refuse to admit any urgent cases or those of patients coming from a distance. The governor decided that for the future a trained nurse should be appointed to the dispensary. There were six applications for the posts of surgeons and on a ballot being taken Dr. Ransom Pickard and Dr. J. A. S. MacKeith were elected.

**ABERDEEN HOSPITAL SATURDAY.**—On Saturday, June 23rd, the fifth annual demonstration under this movement took place in what promised to be splendid weather, broken somewhat by a thunderstorm. In the forenoon there was a monster street procession from the reclaimed land north of the river Dee to Duthie Park, the route being by leading thoroughfares, and the parade being taken part in by the various friendly societies in the city, representatives of trades, cyclists in fancy costume, school-children, and others. Collections were made *en route* from the spectators, and at Duthie Park (where a charge for admission was made) an attractive programme of sports, including a brass band competition, was presented. The attendance was very large, but it will be some time before the financial result is made known.

# ON THE CONFUSION OF TWO DIFFERENT DISEASES UNDER THE NAME OF RUBELLA (ROSE-RASH).

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A SUSPICION of the confusion of two different diseases under the name of "rubella" has been entertained by some of those who have had an extensive experience in the eruptive fevers of the young; but while myself suspecting the fact for several years I failed to attain conviction until the advent of an epidemic in April, 1900. These two diseases are not classified in the third edition (being the second revision), 1896, of the "Nomenclature of Diseases" by a joint committee of the Royal College of Physicians of London, but are included under the single terms of "rubella," "rötheln," "German measles," or "epidemic rose-rash." The purport of the present communication is the establishment of the proposition, on definite and analysed grounds, that two clearly distinguishable diseases exist.

It will be admitted that there is a distinct disease called "measles" (morbilli). It will further be accepted that there exists another definite disease termed "scarlet fever" (scarlatina). Another disease usually, though most unfortunately, described as "German measles" (rubella) is also recognised. I hope to prove to the satisfaction of the profession that this disease does not consist of two varieties of one kind, as I have hitherto contended with the profession in general, but that two definite and separate diseases have been confounded under one name. For the law observed in zymotic diseases prevails here, *that an attack of one of these diseases does not protect from an attack of the other.*

By many members of the profession the diseases hitherto classed under the term "rubella" are considered to be of a very trivial nature. But when one frequently hears thas certain children have had three attacks of measles—that it to say, English measles, German measles, and the disease I am about to describe—none of which affords protection against the remainder, and where one at least is, or is likely to be, confounded with scarlet fever, the question assumes an aspect of grave importance both to the young and to the schools where an important portion of their lives is spent. Precise accuracy in distinctions will thus aid in diminishing the prevalence of zymotic disease and tend to enhance professional credit. It was not until the close of the seventeenth century that, mainly through the researches of Sydenham, scarlet fever ceased to be confounded with measles, and now, at the close of the nineteenth century, rose-rash is still confused with measles and with scarlet fever. Finally, on the verge of the twentieth century, we are only just discovering, and not merely surmising, that a "fourth disease," perfectly distinct from measles, rose-rash, and scarlet fever, is to be distinguished. I will not venture to suggest the appropriate name for this disease. I content myself with referring the question of nomenclature to the Royal College of Physicians of London. But whatever term should be ultimately adopted it should obviously preclude any possible confusion with scarlet fever or rose-rash. Pending this authoritative decision I shall tentatively employ the general expression of the "fourth disease."

The fundamental law in medicine—the science of our practice, ably taught by Cullen more than a century ago but now too frequently ignored—affirms that one attack of an eruptive fever entails immunity from a second attack in the same individual during childhood. The "germs" of infectious disease apparently require a virgin soil for development; a prior attack seems so to exhaust the soil or so to transform it chemically by the products of growth that it becomes incapable of furnishing a suitable nidus for the reproduction of the germs. This law is so permanent (for the insignificant exceptions may be regarded as scientific curiosities only) that for the practical guidance of our work it may be considered an absolute and invariable rule. Each disease, moreover, possesses its own characteristic seed which is entirely *sui generis*. But a curious fact in the life-history of these zymotic diseases, at present inexplicable, is that the growth of some germs in the body appears to produce so vital an alteration in the soil as to facilitate the immediate fertilisation and development of the germs of other diseases.

For example, the concurrence, or sequence, of measles and whooping-cough, of scarlet fever and diphtheria, and of measles and diphtheria is well known, and I have observed the marked influence which influenza has exercised upon the concurrent or subsequent development of influenza and epidemic rose-rash and of influenza and mumps.

The question has also occurred to me whether the "fourth disease" which so closely resembles scarlet fever would tend in a series of cases gradually to develop into true scarlet fever. But I have never observed the slightest indication in this direction. I have always found, as soon as I knew my subject, that each disease bred true. There was a well-expressed line of demarcation between the two diseases, and notwithstanding their close superficial resemblance every case was either the true "fourth disease" or true scarlet fever, and I shall presently show the concurrence of these two diseases in the same epidemic. I no more believe in its indefinite distinction than I do in what is called diphtheritic sore-throat; either a disease is diphtheria or it is not. The difficulty lies in the accuracy of our diagnosis and not in the definiteness of the disease. Nothing, however, can be achieved without the capacity of accurate diagnosis and there are no cases in medicine which at times are more puzzling and require the expenditure of more thought and judgment than the zymotic diseases we are discussing—rose-rash, the "fourth disease," and scarlet fever. Their elucidation has bewildered and misled many of the ablest physicians, to our professional discredit and the detriment of the welfare of schools. Yet they are as separable as typhus fever is distinct from typhoid fever. To mistake rose-rash for measles causes infinite trouble, but constant confusion of this "fourth disease" with scarlet fever involves, even admitting the perplexities of diagnosis, a very serious error, for if the patient be suffering from the "fourth disease" a period of isolation, usually of 14 days, and at most 21 days, is sufficient, notwithstanding the desquamation, which is apparently innocuous, while if the malady be scarlet fever a period of close confinement varying from 42 to 56 days is stated to be required in accordance with our present knowledge. Conceive the significance of this difference in an extensive epidemic—an isolation (two-thirds longer time for each case of scarlet fever) of wholly unnecessary seclusion with all its attendant discomforts, loss of time, and pecuniary cost entailed for medical attendance and nursing. The difficulties may be gauged when errors are committed even by those who have seen a multitude of cases. It requires some courage, I admit, to suspend judgment and plead ignorance when a definite diagnosis is important and urgent; but the admission, when the illness has been erroneously assumed to be scarlet fever, that it is merely this "fourth disease" reaches almost the limit of intellectual and moral candour.

The question has occurred to me repeatedly whether on account of its area, season, and non-fatality the very extensive but non-fatal epidemic of scarlet fever which raged throughout the country in the autumn of 1892 and the spring of 1893 was not really to a large extent an epidemic of the "fourth disease," for it not only occurred to a great extent out of its season but in both cases in which I was consulted by the head-masters of two schools at a distance from Rugby the epidemic proved to be the "fourth disease" (which I then deemed a variety of rose-rash) and not scarlet fever. In one epidemic of rose-rash, however, the whole of the cases will resemble measles. In another epidemic of the (supposed) same illness every case will resemble scarlet fever, as occurred in an entire series of instances in the two schools to which I have referred, comprising 16 at one school and 12 at another. It was epidemics such as these which made me seriously reflect and induced me to institute more searching inquiry into the interpretation of their phenomena. We have also this remarkable fact about rose-rash (rubella) that although (and here there can be no shadow of doubt, since the one affords no protection against the other) it is a perfectly distinct disease from measles, from the "fourth disease," and from scarlet fever, and although rose-rash and the "fourth disease" may be concurrently epidemic, yet rose-rash, like measles, usually affects large numbers, while the "fourth disease," like scarlet fever, always occurs to a much more limited extent, probably on account of its being, again like scarlet fever, less infectious at the onset. In 1894 I wrote that it had been suggested that the disease named "rose-rash" comprised in reality two diseases. In my own mind I had frequently raised the question and had searched for cases in evidence, but I had signally failed to establish a single relevant fact to sustain the hypothesis. Increased observation and extended experience have now, however, convinced me to the contrary.

The great difficulties in the elucidation of the facts which distinguish this "fourth disease" from rose-rash have been these: (1) that similar symptoms to a great extent are present in both diseases, with the exception of the dual appearance of the rash; (2) that in the same patient the eruption of rose-rash sometimes resembles measles at the commencement and terminates by the coalescence of the spots in assuming the scarlet fever eruption (this, however, is quite distinct from the *course* of the rash in the "fourth disease"); (3) that these two diseases—rose-rash and the "fourth disease"—frequently occur in the same locality at the same time; and (4) that the period of incubation is almost identical in both diseases. I shall, however, prove by conclusive evidence—what I have only recently established by the occurrence of an epidemic—that an attack of rose-rash does not afford protection against the "fourth disease" and *vice versâ*. So minutely, again, does this "fourth disease" mimic scarlet fever that I am convinced that innumerable cases are ascribed to the latter which belong to the former, and *vice versâ*. I may add that it sometimes demands a series of cases before a conclusive diagnosis can be arrived at, when the result becomes incontrovertible, although when close and accurate observations are made the difficulties usually resolve themselves.

I shall now specify some of the practical difficulties which arise in the elucidation of this "fourth disease."

I.—I cite an epidemic which was stated to be scarlet fever but which proved to be this "fourth disease."

In the year 1892 the head-master of a public school called me in consultation in connexion with 16 cases of an illness which was supposed to be scarlet fever. After a careful investigation of the cases, some of which were in the first stage and others in the last, I was able to prove to my own satisfaction at all events that the disease was that which I then termed the "scarlet fever variety" of rose-rash (rubella) but which I should now designate the "fourth disease." As a difference of opinion existed the head-master, after explaining the position to the parents, wisely afforded them the opportunity of regarding the ailment as scarlet fever or as this "fourth disease," as they might decide. The only trouble occurred with parents who were medical men, all of whom considered it to be scarlet fever. But I never heard of a solitary instance of scarlet fever appearing in any of the lads who went home for the holidays. I did, however, hear of one of the nurses who, after she had left, suffered from what was diagnosed as a genuine case of rose-rash. Now let us estimate the meaning of this verdict to the affected lads themselves. We will consider the period of isolation alone, without introducing the elements of the anxiety and expense. If these cases indicated the "fourth disease" 14 days' isolation was usually amply sufficient if followed by

TABLE I.—*A Concurrent Epidemic of Scarlet Fever and the Fourth Disease.*

| No. of case. | Date of appearance of a rash.* | No. of case. | Date of appearance of a rash.* |
|---|---|---|---|
| 1 | 1896, Feb. 4th. | 17 | 1896, March 3rd. |
| 2 | ,, ,, 18th. | 18 | ,, ,, |
| 3 | ,, ,, 19th. | 19 | ,, ,, ,, |
| 4 | ,, ,, ,, | 20 | ,, ,, 4th. |
| 5 | ,, ,, ,, | 21 | ,, ,, ,, |
| 6 | ,, ,, ,, | 22 | ,, ,, ,, |
| 7 | ,, ,, ,, | 23 | ,, ,, 5th. |
| 8 | ,, ,, ,, | 24 | ,, ,, ,, |
| 9 | ,, ,, 24th. | 25 | ,, ,, 6th. |
| 10 | ,, ,, 26th. | 26 | ,, ,, ,, |
| 11 | ,, ,, 27th. | 27 | ,, ,, ,, |
| 12 | ,, ,, ,, | 28 | ,, ,, 7th. |
| 13 | ,, ,, ,, | 29 | ,, ,, 8th. |
| 14 | ,, March 2nd. | 30 | ,, ,, 9th. |
| 15 | ,, ,, 3rd. | 31 | ,, ,, 20th. |
| 16 | ,, ,, ,, | | |

* The dates of commencement of illness furnished to me in their sequence.

complete disinfection. 16 cases × 14 days = 224 days' isolation; 16 cases × 42 days = 672 days' isolation; or a difference of 448 days.

II.—I next refer to an epidemic of 31 cases of an illness (assumed to be the scarlet fever variety of rose-rash, but really this "fourth disease") which proved to be scarlet fever and the "fourth disease" simultaneously occurring. This epidemic conclusively shows the entity of this "fourth disease" as a distinct and definite malady, separable from scarlet fever and even from a modified scarlet fever.

In the year 1896 the head-master of a private school summoned me to a consultation on account of an epidemic amongst his boys which was regarded as the scarlatina variety of rose-rash (rubella). The head-master was a careful, painstaking man who supplied the date of illness of every boy; and the instances finally amounted to some 31 in number. (Table I.) The medical man in attendance also furnished most valuable assistance at my visit. It was a remarkable series of cases, especially as some of the patients (32·25 per cent.) apparently passed through the same illness twice over. I saw every boy affected at the date of my visit on March 9th, 1896, in every stage of the disease. Two of them were seriously ill and eventually died. Though the most careful investigation was made I had the chagrin of confessing that the problem remained unsolved—the most perplexing and anxious problem I had encountered in a long experience.

It was impossible to acquiesce in this preliminary failure and I undertook to return the next day. Meantime I pondered over my clinical notes and light dawned at last. In following out endless hypotheses I was enabled at length to show that there was a malady which commenced on Feb. 4th, 1896, which was followed by seven cases occurring on Feb. 18th and 19th, involving, therefore, a period of 14 and 15 days. On Feb. 24th another case of illness arose, followed by three others on Feb. 26th and 27th, and having therefore a period of incubation of from two to three days. Following this clue the problem was eventually solved the next day, as shown in Tables II. and III.

TABLE II.

| No. of case. | Date of appearance of the rash of the "fourth disease." | Date of appearance of the rash of scarlet fever. |
|---|---|---|
| 1 | 1896, Feb. 4th. | — |
| 2 | ,, ,, 18th. | — |
| 3 | ,, ,, 19th. | 1896, March 13th. |
| 4 | ,, ,, ,, | — |
| 5 | ,, ,, ,, | — |
| 6 | ,, ,, ,, | 1896, March 7th. |
| 7 | ,, ,, ,, | ,, ,, 9th. |
| 8 | ,, ,, ,, | — |
| 9 | — | 1896, Feb. 24th. |
| 10 | — | ,, ,, 26th. |
| 11 | — | ,, ,, 27th. |
| 12 | — | ,, ,, ,, |
| 13 | 1896, March 9th. | ,, ,, ,, |
| 14 | ,, ,, 2nd. | — |
| 15 | ,, ,, 3rd. | 1896, March 12th. |
| 16 | ,, ,, ,, | — |
| 17 | ,, ,, ,, | — |
| 18 | ,, ,, ,, | 1896, March 9th. |
| 19 | — | ,, ,, 3rd. |
| 20 | 1896, March 4th. | ,, ,, 8th. |
| 21 | ,, ,, ,, | ,, ,, 11th. |
| 22 | ,, ,, ,, | ,, ,, 13th. |
| 23 | ,, ,, 5th. | (?). |
| 24 | ,, ,, ,, | — |
| 25 | ,, ,, 6th. | — |
| 26 | ,, ,, ,, | — |
| 27 | ,, ,, ,, | — |
| 28 | — | 1896, March 7th. |
| 29 | — | ,, ,, 9th. |
| 30 | 1896, March 8th. | — |
| 31 | ,, ,, 20th. | — |

TABLE III.

| No. of case. | Date of appearance of rash in cases of the "fourth disease." | Date of appearance of rash in cases of scarlet fever only. | Date of appearance of rash of the "fourth disease" followed by scarlet fever. | | Date of appearance of rash of scarlet fever followed by the "fourth disease." | |
|---|---|---|---|---|---|---|
| | | | "Fourth disease." | Scarlet fever. | Scarlet fever. | "Fourth disease." |
| | 1896. | | | | | |
| 1 | Feb. 4th. | — | — | — | — | — |
| 2 | ,, 18th. | — | — | — | — | — |
| 3 | — | — | Feb. 19th. | March 13th. | — | — |
| 4 | Feb. 19th. | — | — | — | — | — |
| 5 | ,, ,, | — | — | — | — | — |
| 6 | — | — | Feb. 19th. | March 7th. | — | — |
| 7 | — | — | ,, ,, | ,, 9th. | — | — |
| 8 | Feb. 19th. | — | — | — | — | — |
| 9 | — | Feb. 24th. | — | — | — | — |
| 10 | — | ,, 26th. | — | — | — | — |
| 11 | — | ,, 27th. | — | — | — | — |
| 12 | — | ,, ,, | — | — | — | — |
| 13 | — | — | — | — | Feb. 27th. | March 9th |
| 14 | March 2nd. | — | — | — | — | — |
| 15 | — | — | March 3rd. | March 12th. | — | — |
| 16 | March 3rd. | — | — | — | — | — |
| 17 | ,, ,, | — | — | — | — | — |
| 18 | — | — | March 3rd. | March 9th. | — | — |
| 19 | — | March 3rd. | — | — | — | — |
| 20 | — | — | March 4th. | March 8th. | — | — |
| 21 | — | — | ,, ,, | ,, 11th. | — | — |
| 22 | — | — | ,, ,, | ,, 13th. | — | — |
| 23 | — | — | March 5th. | (?) | — | — |
| 24 | March 5th. | — | — | — | — | — |
| 25 | ,, 6th. | — | — | — | — | — |
| 26 | ,, ,, | — | — | — | — | — |
| 27 | ,, ,, | — | — | — | — | — |
| 28 | — | March 7th. | — | — | — | — |
| 29 | — | ,, 9th. | — | — | — | — |
| 30 | March 8th. | — | — | — | — | — |
| 31 | ,, 20th. | — | — | — | — | — |

NOTE.—No. 9 was said to have had scarlet fever previously, but that illness was evidently the "fourth disease," for although the patient was freely exposed to the infection of the "fourth disease" he escaped it and had true scarlet fever. It was this mistaken diagnosis of his former illness which occasioned so much difficulty at the commencement. No. 22 and No. 28 died.

TABLE IV.

| No. of case. | Date of rubella (rose-rash). | Date of the "fourth disease." |
|---|---|---|
| 33 | 1896 | 1900, March 14th. |
| 34 | 1858 | ,, ,, 15th. |
| 35 | 0 | ,, ,, ,, |
| 36 | 0 | ,, ,, 17th. |
| 37 | 1899 | ,, ,, ,, |
| 38 | 0 | ,, ,, ,, |
| 39 | (? Date of attack.) | ,, ,, 19th. |
| 40 | 0 | ,, ,, ,, |
| 41 | 0 | ,, ,, ,, |
| 42 | 1893 | ,, ,, 20th. |
| 43 | 1899 | ,, ,, 21st. |
| 44 | 0 | ,, ,, 22nd. |
| 45 | 0 | ,, ,, 26th. |
| 46 | 0 | ,, ,, 27th. |
| 47 | 1893 | ,, ,, 28th. |
| 48 | 0 | ,, ,, 29th. |
| 49 | 0 | ,, ,, ,, |
| 50 | 0 | ,, April 1st. |
| 51 | 1896 | ,, ,, ,, |
| 52 | January, 1900. | ,, June 1st. |

THE DISTINGUISHING CHARACTERISTICS BETWEEN RUBELLA (ROSE-RASH), THE "FOURTH DISEASE," AND SCARLET FEVER.

| Rubella (rose-rash). | The "fourth disease." | Scarlet fever. |
|---|---|---|
| 1. *Premonitory symptoms.*—In many instances none; no headache; no vomiting; no catarrh; no cough; but frequent sore throat. If the attack be severe some malaise, anorexia, and drowsiness will exist. | 1. *Premonitory symptoms.*—In many cases none, even with a copious eruption; neither headache, nor vomiting, nor catarrh, nor cough, but frequently slight sore throat. If the attack, however, be severe there may be pronounced malaise for some hours, with headache, anorexia, drowsiness, chilliness, and even considerable backache. | 1. *Premonitory symptoms.*—If the attack be slight the patient merely feels tired and usually complains of some amount of sore throat, headache, and chilliness. There may, however, be considerable malaise, with a genuine sense of illness, accompanied by some vomiting. |
| 2. Its *season* is spring and summer. | 2. Its *season* is spring and summer. | 2. Its *season* is autumn and winter. |
| 3. The *incubation period* is usually 18 days, but with a range of from nine to 21 days. | 3. The *incubation period* has a probable range of from nine to 21 days. | 3. The *incubation period* is usually from two to three days, but with a range from a few hours to seven days; it very rarely extends beyond the fifth day. |
| 4. The *eruption* is usually the first noticeable symptom. Its appearance is that of minute rosy red dots, not patches. It shows itself first behind the ears and on the scalp and face, especially on the oral circle; from these situations it extends to the neck and the chest and ultimately covers the entire body. The minute dots become larger and gradually coalesce, forming patches of the bat's wing pattern, which so extend and alter in colour as to be indistinguishable from measles. | 4. The *eruption* is usually the first noticeable symptom and will cover the whole body with a considerable diffuse rash in a very few hours. The hue is a bright rosy red and the eruption is raised somewhat from the surface of the skin. The sensation of heat of the skin to the touch, even where the rash is very full, is much slighter than in scarlet fever. | 4. The *eruption* is diffuse, dusky red, papular in character, and originates behind the ears. It presents a goose-flesh appearance. It does not occur in isolated dots at any stage; nor in patches which are raised and have well-defined margins. It appears early about the clavicles and on the chest and the covered parts of the body. The rash is rarely so full at an early period as in the fourth disease and the skin is markedly burning to the touch. |
| 5. *The throat.*—The fauces look dry, with a dark, motley, red hue. | 5. *The throat.*—The fauces are usually swollen and reddish, assuming a velvet appearance, but this condition bears little relation to the extent of the rash. | 5. *The throat.*—The appearance of the fauces may vary from the most insignificant affection to an intense dusky redness, with marked swelling, showing sometimes white spots of inspissated secretion; and the severity of the throat affection bears usually a distinct relation to the skin eruption. |
| 6. *The eyes.*—The conjunctivæ are pink red and suffused. | 6. *The eyes.*—The conjunctivæ are pink and suffused. | 6. *The eyes.*—Normal. |
| 7. *The glands.*—The lymphatic glands throughout the body are enlarged, tender, and hard, like peas, notably the posterior cervical, the axillary, and the inguinal. | 7. *The glands.*—The lymphatic glands universally are enlarged, hard, and tender, and feel like peas, though less manifest than in rose-rash. Those mainly affected are the posterior cervical, the axillary, and the inguinal. | 7. *The glands.*—The lymphatic glands of the throat and neck can scarcely be detected during the first few days; but subsequently they may be enlarged in proportion to the severity of the faucial affection. This, however, creates no difficulty, as the axillary and inguinal glands are not so involved as in rose-rash. |
| 8. *Desquamation.*—There may, perhaps, be a little branny desquamation, but frequently there is none. | 8. *Desquamation.*—The desquamation may be slight, or as complete as possible, even extending to a general peeling of the hands and feet. But the desquamation bears no relation to the intensity of the eruption, for it often happens that a very full eruption may be followed by little or no desquamation, and what does occur disappears in a week or two. On the other hand, a full eruption may be attended by a general peeling as free as in the worst cases of scarlet fever, but mostly in small scales rather than in flakes or sheets. A slight rash is usually accompanied by little or no desquamation. But I have never seen a case of scarlet fever with a full eruption where the desquamation did not occur eventually in sheets, the process lasting many weeks. If a series of cases be observed these abnormalities will be very apparent. | 8. *Desquamation.*—The desquamation always bears a ratio to the extent of the eruption. A copious eruption signifies a free desquamation, while a scanty eruption is followed by a sparse peeling, which, however, does not cease for many weeks. It commences invariably by a peeling of the tongue on the fourth day, which extends to the lips and is followed by peeling of the face and behind the ears; one of the easiest places in which to detect the desquamation early is the ear. The desquamation occurs in pieces or shreds rather than scales, and is very free about the hands and feet, lasting for many weeks. At the commencement of the peeling circles of desquamation are formed around the raised papillæ, though I have once seen this state in the fourth disease where the peeling was excessive. |
| 9. *The kidneys.*—They are rarely affected and then only with a trace of of albumin. | 9. *The kidneys.*—Rarely affected. Where they are involved the condition is probably that only of the albuminuria of adolescents. | 9. *The kidneys.*—Albuminuria is very frequent. The liability to acute nephritis is very decided unless the treatment be appropriate. |
| 10. *Sensations of illness.*—Even with a full eruption as intense as in measles the patient usually states that he does not feel ill, although there may be other indications to the contrary. | 10. *Sensations of illness.*—Where the eruption is slight there is no illness of any kind, and where the eruption is copious the feeling of illness is sometimes scarcely apparent, although I have seen boys really ill from this disease. | 10. *Sensations of illness.*—In slight cases there is no apparent illness, but I have never seen a case with a severe eruption where the patient was not really, and also sensibly, very ill. |
| 11. *The tongue.*—It is clean or slightly furred and never coated with a thick, white fur, which peels on the fourth day. | 11. *The tongue.*—The tongue is clean or slightly furred and never coated with a thick white fur, which peels on the fourth day, leaving the tongue raw. | 11. *The tongue.*—If the case be slight there may be no early signs, but in a well-marked case the tongue is coated with a thick white fur which, peeling off from the tip and edges on the fourth day, gradually leaves a raw red tongue, commonly termed the "strawberry" tongue. |
| 12. *The pulse.*—It is normal or slightly increased in frequency, but always bearing a ratio to the temperature. | 12. *The pulse.*—In slight cases it is normal and where the case is a well-marked one the pulse is quickened, but bears a ratio to the temperature; that is to say, where the pulse is accelerated the temperature is raised in a proportionate degree. | 12. *The pulse.*—Even in slight cases the pulse is accelerated and in severe cases very greatly quickened and always out of all proportion to the height of the fever; that is to say, even with a temperature only just above normal (99° F.) the pulse will be very rapid (120). |
| 13. *The temperature.*—This varies from normal to 103° or 104° F. | 13. *The temperature.*—This varies from 98·4° to 103° or 104° F.; but even with a very extensive rash the temperature is not necessarily high. | 13. *The temperature.*—This varies from 99° to 106° F., but is never increased in the usual ratio to the pulse. A full rash always means a high temperature. |
| 14. *The course of illness.*—The symptoms, however severe, disappear in a few days, leaving comparatively little feeling of illness; where the eruption is slight there may be no illness whatever. | 14. *The course of illness.*—The symptoms, however severe, pass off in a few days, leaving comparatively little feeling of illness. | 14. *The course of illness.*—The illness gradually subsides in from four to seven days. Desquamation commences as eruption fades and continues for from six to eight weeks or more, and lasts longest on the hands and feet. |

THE DISTINGUISHING CHARACTERISTICS BETWEEN RUBELLA (ROSE-RASH), THE "FOURTH DISEASE," AND SCARLET FEVER—(*Continued*).

| Rubella (rose-rash). | The "fourth disease." | Scarlet fever. |
|---|---|---|
| 15. *The period of infection.*—I do not know any illness which is so infectious in its earliest stage, even before any symptoms are manifest. It results from this cause that schools suffer to so great an extent from the disease when once it has found an entrance. It is less infectious in its later stage. | 15. *The period of infection.*—It is not so very infectious in its earliest stage. In its later stage, even while desquamation is taking place, it is not infectious beyond two or three weeks after thorough disinfection. | 15. *The period of infection.*—This disease is the least infectious of any illness during its early stage. It therefore allows time for quarantine and isolation and thus can be controlled, so that an epidemic may be prevented more readily than in any other infectious illness. After the first 48 hours the infection is very powerful, but I am not prepared to pronounce upon its duration. Until this can be ascertained the only safe rule is the assumption that it may last as long as desquamation itself, although I am quite clear that this is inaccurate. |
| 16. *Protection.*—The attack affords no protection against measles, the "fourth disease," or scarlet fever. | 16. *Protection.*—The attack affords no protection against scarlet fever or rose-rash. | 16. *Protection.*—An attack affords no protection against the "fourth disease" or rose-rash. |
| 17. *The duration of infectiveness.*—From 10 to 14 days where efficient disinfection is in force. | 17. *The duration of infectiveness.*—From 10 to 14 or even 21 days where efficient disinfection is in force. | 17. *The duration of infectiveness.*—From six to eight weeks or more—i.e., when the desquamation has ceased. But I am far from believing that the infection lasts so long after efficient disinfection, though at present I can adduce little proof. |
| 18. *Sequelæ.*—Practically none. | 18. *Sequelæ.*—Practically none, but I have seen the submaxillary glands enlarged. | 18. *Sequelæ.*—Nephritis; suppuration of the submaxillary lymphatic glands and others; otitis; rheumatism; endocarditis. |
| 19. *Termination.*—Usually complete recovery in a fortnight. | 19. *Termination.*—Usually complete recovery in a fortnight. | 19. *Termination.*—Usually complete recovery ensues, but sometimes a prolonged convalescence on account of the sequelæ; but the disease shows a high mortality in the very young. |
| 20. *Treatment.*—The patient requires about five days in bed, followed by three days indoors; then about six days in the fresh air; and after complete disinfection he may safely mix with others.<br>*Abortive* cases of rose-rash are frequent and are responsible to a large extent for the spread of this disease. The difficulty is to grasp them, as no actual illness occurs. 1. *Pink eyes.*—There is a group of cases of epidemic roseola which have no symptoms that I have yet ascertained except pink conjunctivæ. And these cases, while capable of passing the illness on to others, are immune against a subsequent attack themselves. 2. There is another group of cases of epidemic roseola which I believe—but I cannot at present advance beyond belief, for I have not yet satisfied myself by actual proof—may occur without showing any symptoms beyond slight feverishness and enlargement of the lymphatic glands throughout the body. | 20. *Treatment.*—The patient may be permitted to get up on the fifth or sixth day or as soon as his strength permits, irrespectively of the desquamation and without danger from sequelæ. He then requires three or four days indoors followed by five or six in the fresh air, and may safely join his schoolfellows at the end of from 14 to 21 days, notwithstanding desquamation, provided the disinfection has been thorough. | 20. *Treatment.*—Every case of scarlet fever, however slight, requires 21 days of absolute confinement to bed. The patient should be clothed in a flannel night-shirt and the skin daily greased with carbolic or eucalyptus oil. No food should be given for the first week except milk and farinaceous food, however mild the illness, in order to guard against nephritis. The patient should not be permitted to join his friends for six or eight weeks, but I do not think it essential to isolate cases until all desquamation has ceased from the hands and feet, for this process sometimes occupies several additional weeks. I have acted on this assumption for many years without harm, even transferring boys to their own homes. Of course, complete disinfection is imperative. |

The above analysis (Tables II. and III.) of this remarkable epidemic conclusively shows: (1) that two distinct infectious diseases were existent in the school at the same time; (2) that these diseases were scarlet fever and what I then termed the scarlet fever variety of rose-rash, but in reality this "fourth disease"; and (3) that the "fourth disease" commenced on Feb. 4th and the scarlet fever on the 24th.

I was further able to discriminate, mainly guided by the periods of incubation, as well as by the existing and the pre-existing symptoms: (1) that some boys had scarlet fever only; (2) that others had the "fourth disease" only; (3) that one had scarlet fever and subsequently the "fourth disease"; and (4) that others had the "fourth disease" followed by scarlet fever.

The satisfaction of unravelling so very intricate a problem was marred by the deaths of the two boys (No. 22 and No. 28) I have mentioned above from scarlet fever.

Since this epidemic I have had another instance of this "fourth disease" in a boy who had previously suffered from scarlet fever in 1894.

CASE 32.—A boy, aged 14 years, was isolated on June 2nd, 1900. Sore-throat and rash appeared on June 3rd. The throat was swollen and velvety. The tongue was furred but not coated. A copious rash ensued which became brick-red as it faded. No desquamation of the tongue or skin occurred, though the latter was rough. The posterior cervical glands were very tender and enlarged. The maximum temperature was 100·4° F., and the maximum pulse was 84. There were, therefore, two cases of the "fourth disease" out of 32 (6·25 per cent.) who had previously had scarlet fever. This epidemic proves incontestably that, besides scarlet fever, there is another malady, which I have provisionally named the "fourth disease," and that the one affords no protection against the other.

III.—The following facts connected with an epidemic of this "fourth disease," where 42·1 per cent. of the patients had already suffered from rose-rash (rubella), demonstrates its distinctive character and consequent classification.

This epidemic occurred at Rugby—commencing on March 13th, 1900, and terminating on April 1st, 1900—and it affected 19 boys. The illness resembled scarlet fever more closely than any other series of cases I had yet seen, due not only to the marvellous resemblance between the rash and that of scarlet fever, but also to the copious desquamation of the skin which in some instances succeeded. It was clearly, however, an epidemic of the "fourth disease" alone. In this series 42·1 per cent. had already suffered from rose-rash (some within the preceding 12 months), so that it was evident that these diseases were different and destitute of mutual protectiveness. On April 3rd the school dispersed for the vacation and each parent was advised that, notwithstanding the resemblance, the malady was not scarlet fever. I only heard of one case occurring during the vacation which was diagnosed as scarlet fever; but one parent—a medical man—whose two sons were at the school suffering from this "fourth disease" was so convinced when he saw them that this malady was scarlet fever that he desired me to keep them in bed, to avoid feeding them, and to examine their urine daily, which I had done, I need scarcely add, in every instance. On May 12th this gentleman addressed to me this exceedingly kind and handsome letter: "I feel I ought to write and thank you,

as a parent, for the firm and correct stand you took about the cases of our boys last term. It required not less courage than knowledge to stand out against the temptation to call those cases scarlet fever and to involve many parents and friends in a prolonged period of anxiety and considerable expense. This was especially so with our boys, both of whom had had German measles (rubella). Our younger son at Rugby desquamated, as you know, as freely as any scarlet fever case and continued desquamating for six or seven weeks. The elder had just a little on the soles of his feet after five or six weeks. They mixed freely with others, including our little boy of three and a half years of age, soon after their return from Rugby."

I append some few notes of the cases and I confess that I never observed such extensive peeling except in scarlet fever, but it is a curious fact, and one that may prove of value, that the two boys who desquamated most had in past years suffered from general eczema and had naturally a rough dry skin.

I now furnish a brief *résumé* of the 19 cases of this series.

1. *Premonitory symptoms.*—There were practically none and no boy admitted illness until the rash appeared, but on inquiry admission of general malaise was elicited.

2. *Vomiting.*—In Case 49 free vomiting occurred in the night and a very full rash was discovered in the morning. This vomiting arose, however, from his having eaten freely of sweets in the evening, which probably disagreed with him as the disease disclosed itself. But as the vomiting was severe and the rash very marked indeed I made a full investigation and watched throughout for evidence of scarlet fever. The maximum temperature throughout his illness was only 99·6° F.

3. *Eruption.*—Really the first symptom to attract the attention of the sufferer was the rash which in nearly every case was very full and quite characteristic of scarlet fever. In fact, if ten experts had inspected the skin and made no other investigation all would have diagnosed the eruption as that of scarlet fever.

4. *Throat.*—The fauces were red and swollen, but occasioned so little discomfort that complaint was rarely made, and the condition was only discovered on inquiry or inspection. However severe appeared the eruption—and in many cases it resembled the worst eruption in scarlet fever—the throat did not assume anything like the same condition as is so usual in scarlet fever.

5. *Desquamation.*—In some cases the skin became merely rough; in most instances there was free desquamation of small scales; while in others the peeling was equal to the worst I have ever noticed in scarlet fever. In Case 34 the skin was detached in large pieces in certain regions; for instance, in the groin and front of the abdomen it peeled off in sheets. Desquamation lasted six or seven weeks. This boy had naturally a rough dry skin and had previously suffered from general eczema. In Case 35 an extent of desquamation occurred which rarely takes place even in scarlet fever. It was detached in sheets from the whole of the body and the toes shed their skin like the finger of a glove in one piece; the heel also peeled almost in one piece and certainly an area of more than an inch square was detached at once. The pieces had to be cut off, as they caught in the bed-clothes and caused pain where the skin was adherent. In Case 39 the skin peeled from the toes in pieces of the size of a shilling and elsewhere in scales. In this "fourth disease" the desquamation bears no relation to the intensity of the eruption; several of these cases with the fullest and intensest eruption were followed by very scanty desquamation. The peeling may continue as long as in scarlet fever although it is apparently innocuous.

6. *The tongue.*—The tongue was furred throughout, which cleaned as all furred tongues do. In no case did the tongue peel on the fourth day, as is so pathognomonic of scarlet fever in both mild and severe attacks.

7. *The glands.*—The lymphatic glands universally were enlarged, hard, and tender, sometimes excessively tender, as in Case 32, but I do not think that they are so markedly affected as in rose-rash. My experience is that the lymphatic glands are always enlarged and tender whenever a copious eruption occurs on the skin from any disease.

8. *Temperature.*—The average temperature was 101° F.; but it ranged from 99·4° to 104·2°. This last temperature occurred in Case 45 where the eruption was scanty, with merely a red, swollen, velvety throat, though the posterior cervical glands were very large and tender. The temperature almost invariably became normal on the third or fourth day.

9. *The pulse.*—In no case, except in Case 45, did it reach 100—a signal contrast to the accelerated pulse of scarlet fever.

10. *The kidneys.*—In no instance did albuminuria arise, although all the sufferers, except the two sons of the medical man I have mentioned, were fed freely as soon as the slight fever (which occurred from the third to the fifth day) had disappeared, and the boys were removed from bed as soon as the rash had subsided, notwithstanding the desquamation.

11. *Incubation period.*—This I was unable to ascertain in the present series of cases, since several of them occurred simultaneously, and I could not discover any connecting links between the sets. My impression is that the illness originated in a boy who was attacked very slightly and who, without my seeing him, continued in his work with it the whole time. I shall hope to ascertain this fact more accurately in some subsequent series. The incubation varies, I believe, from nine days to 21 days.

12. *The duration of infectiveness.*—This lasts from 10 days to 14 days or even 21 days, where efficient disinfection is in operation. The continuation of desquamation is apparently of no moment as a cause of infection or sequelæ.

13. *Previous scarlet fever.*—Previous scarlet fever had not occurred in any instance.

14. *Previous rose-rash.*—Eight boys had already suffered from rose-rash out of this series of 19 cases, or 42·1 per cent.

Since this last series of 19 cases (33 to 51) I have seen one patient (aged eight years) in a private residence (Case 52). This lad developed the malady on June 1st, 1900, when he had suffered from rose-rash, which was prevailing at his school, in January, 1900, so that in 20 consecutive cases of the "fourth disease" nine (or 45 per cent.) had previously had rose-rash (rubella) which is reasonably conclusive evidence that they are two different diseases (Table IV.). Further, it is this malady which, mistaken for scarlet fever, accounts for the prolonged period of incubation which is assigned to the latter disease by some authors; while, on the contrary, it cannot be too emphatically affirmed that the period of incubation of scarlet fever is usually two days, rarely exceeds five days, and never extends beyond seven days.

I conceive that I have now adequately proved that a definite disease exists which I have temporarily designated the "fourth disease." For I have shown:—

1. That although its resemblance is so close to scarlet fever in many features it cannot possess any affinity with that disease inasmuch as both diseases occurred concurrently in the same epidemic.

2. That some of the sufferers had both diseases in the same epidemic.

3. That one patient had scarlet fever followed by the "fourth disease."

4. That several had the "fourth disease" followed by scarlet fever.

5. That although the "fourth disease" has been confused with rose-rash and regarded as a mere variety of rubella, this conclusion is fallacious, since nearly one-half the cases in an epidemic had already had rose-rash within a year or two, which, according to Cullen's established law, is incredible.

6. I have purposely refrained from attaching a name to the disease in order to avoid the anomalous description of the same disease under an indefinite number of terms, as in the case of its ally, which has been variously designated as "rubeola notha," "rötheln," "rubella," "German measles," "epidemic roseola," and "rose-rash." The distinguishing features of rubella, of the "fourth disease," and of scarlet fever will be found in the appended tables.

Rugby.

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NEW WORKHOUSE INFIRMARY FOR MERTHYR TYDVIL.—The new workhouse infirmary for Merthyr Tydvil is now completed and is occupied by the patients. The female wards contain 42 beds and there is also a lying-in ward of 10 beds. The men's wards provide accommodation for 70 beds. The expenditure has been over £13,000, exclusive of the furnishing, which amounted to £1300. Mr. Preston Thomas, one of the inspectors under the Local Government Board, at a recent meeting of the Merthyr Board of Guardians congratulated them upon the fact that their infirmary was one of the finest in Wales.

# A NOTE ON THE RESULTS OBTAINED BY THE ANTI-TYPHOID INOCULATIONS IN THE BELEAGUERED GARRISON IN LADYSMITH.

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BY the kind permission of Surgeon-General Jameson, M.D., C.B., I am enabled to publish the following officially collected statistics with regard to the results obtained by the anti-typhoid inoculations in the military garrison during the siege of Ladysmith.

TABLE I.—*Results obtained by the Anti-Typhoid Inoculations in the Case of the Officers and Men of the Military Garrison during the Siege of Ladysmith.*

| — | Number under observation. | Number of cases of enteric fever. | Proportion in which attacks stand to total number of men in group. | Number of deaths from enteric fever. | Proportion in which deaths stand to total number of men in group. | Proportion in which deaths stand to total number of attacks in group. |
|---|---|---|---|---|---|---|
| Not inoculated | 10,529 | 1489 | 1 in 7·07 | 329 | 1 in 32 | 1 in 4·52 |
| Inoculated ... | 1,705 | 35 | 1 in 48·7 | 8 | 1 in 213 | 1 in 4·4 |

In addition to the above summary of results, obtained on officers and men combined, the figures relating to officers separately are also given in the official statistics. With regard to these last it may be pointed out that quite apart from the fact that these figures relate to a very small group of persons (44 in number) the figures considered as statistics are probably fallacious owing to the fact that the group of inoculated officers (consisting as it must have done almost exclusively of young men at the most susceptible age) is compared with a group of officers which includes all the older and less susceptible men and the men who have already had typhoid fever. The figures referred to are none the less subjoined with a view to conforming to the arrangement adopted in the official statistics.

TABLE II.—*Results obtained by the Anti-Typhoid Inoculations in the Case of the Officers of the Military Garrison during the Siege of Ladysmith.*

| — | Number under observation. | Number of cases of enteric fever. | Proportion in which attacks stand to total number of men in group. | Number of deaths from enteric fever. | Proportion in which deaths stand to total number of men in group. |
|---|---|---|---|---|---|
| Not inoculated ... | 171 | 43 | 1 in 4 | 5 | 1 in 34·2 |
| Inoculated ... ... | 44 | 9 | 1 in 5 | 2 | 1 in 22 |

In drawing inferences from the figures in this table it is to be borne in mind that the erroneous inclusion or exclusion of a single case, or a difference in the event in the case of any patient included in the category of the inoculated, would sensibly alter the present aspect of the table.

The same circumstance must be borne in mind in connexion with any attempt to base a comparison of the case mortality in inoculated and uninoculated upon the figures in Table I. For it will be manifest that in no circumstances can an estimate of case mortality be safely based on a series of only 35 cases, and least of all would it be permissible to do this under conditions such as those of Ladysmith during the siege, where many other factors in addition to the severity of the attack must have determined the favourable or unfavourable event of the cases. It would, however, appear probable, in view of the figures given in the table, that the case mortality was not influenced by the inoculation. On this subject further light must be awaited, especially as it would appear from certain statements which have emanated from the seat of war that the disease generally runs a milder course in the inoculated.

The question of case mortality is, however, quite subordinate in interest to the question as to how far the figures presented in Table I. enable us to estimate in quantitative terms the reduction in incidence and mortality which can be achieved by the process of anti-typhoid inoculation.

To answer this question it will be necessary to inquire, on the one hand, whether there were any circumstances other than inoculation which may have tended, either to diminish the incidence of typhoid fever among the inoculated in Ladysmith, or unduly to swell the roll of typhoid fever among the inoculated.

In connexion with the former question the only point which comes up for consideration is the question as to whether the inoculated were more favourably circumstanced in the matter of the sanitation of their camps than the uninoculated. No detailed data for the determination of this question are at present available. But this will be seen to be unimportant, in view, first, of the fact that there was in each regiment and corps an uninoculated majority who must equally with the inoculated have benefited or suffered from the sanitary or insanitary condition of the various camps; and, secondly, of the fact that the inoculated who were attacked were drawn from 12 different corps and regiments. It may therefore be assumed that the inoculated and uninoculated were equally exposed to the risk of infection.

The question as to whether there were any circumstances which tended unduly to swell the roll of typhoid fever among the inoculated is one which requires to be treated at somewhat greater length. The following points must be kept in view:—1. So far as is known the men who are set down as inoculated were with hardly an exception only once inoculated. It seems probable from the fact that only two cases among twice inoculated persons have as yet come to my knowledge that second inoculation confers a considerable additional protection. 2. It is possible that certain of the officers who are set down as inoculated may have been inoculated with anti-typhoid serum and not with a vaccine consisting of a sterilised typhoid culture. Two or three instances have been reported to me where this error was committed in the case of officers proceeding to South Africa. In the statistics now in question the date and place of inoculation are in the case of five out of the nine officers attacked set down as unknown. 3. It is possible in the case of the men as distinguished from the officers that re-vaccination against small-pox, which, like anti-enteric inoculation, was in many cases carried out on board the transports may in certain instances have been confused with the latter inoculation. Instances of this confusion have already several times come to my knowledge. 4. Lastly, it is possible that owing to the exigencies of military service or owing to other reasons the full prescribed dose of typhoid vaccine may not in all cases have been injected. Instances of the employment of the vaccine in fourfold reduced doses have come to my knowledge. It is conceivable, but there is nothing either to support or rebut the suggestion, that some reduction of the dose may have been found necessary in the case of the Liverpool Regiment, which was inoculated (presumably, as in the case of other regiments, only very partially inoculated) at Ladysmith on the eve of the outbreak of hostilities. At any rate, it is noticeable that this regiment furnished 13 cases of enteric fever among the inoculated men, whereas the whole rest of the garrison of Ladysmith furnished only an equal number of such cases.

In view of the above points, regarding which there is not at present any information available, it is at present impossible to determine precisely to what extent the inoculated were protected by inoculation. But the results set forth in Table I. would appear to be distinctly encouraging, inasmuch as they show that the proportion, on the one hand, of attacks, and on the other hand of deaths, from typhoid fever was seven times smaller in the inoculated than in the uninoculated. And it may be borne in mind that if the number (no doubt a considerable one) of men who had previously suffered from typhoid fever had been subtracted from the number of the uninoculated, as might quite legitimately have been done, the statistics would have borne an even more favourable aspect.

Netley

# ILLUSTRATIONS OF VASECTOMY OR OBLITERATION OF THE SEMINAL DUCTS RELATIVE TO HYPERTROPHY OF THE PROSTATE AND BLADDER ATONY.

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WHEN sufficient grounds were furnished for asserting that the nutrition and growth of the prostate whether normal or hypertrophied might be importantly influenced by obliteration of the seminal ducts or by removal of the testes[1] the first stage may be said to have been reached in a series of observations which will probably prove of increasing value in practical surgery. Though experience is not yet sufficiently ripe upon this point there are good reasons for believing that a vasectomised or castrated male is not liable to undergo hypertrophy of the prostate in the ordinary acceptation of the term. As this point, as now seems probable, becomes more fully determined not only will a fact of great pathological importance be established, but it will be possible to indicate how by means of a simple and safe operation one of the most serious troubles of advanced life may be averted or controlled. I have reserved for this paper some illustrations of vasectomy or, more strictly speaking, of obliteration of the seminal ducts by torsion, as described in my last articles,[2] in its application to the treatment of prostatic hypertrophy. Statistical information gathered from the mere collection of a number of cases having but little in common is not of much assistance in a matter of this kind where the conditions and circumstances are so varied. In taking my results of vasectomy I find they permit of being grouped as follows: First, where the effects are known to have been good, sufficient, and enduring; secondly, where they have been good but restricted to certain conditions; and, thirdly, where they are alleged to have been inadequate or negative. The question of mortality arising from the operation is not one requiring consideration, as in the series of over 100 cases referred to previously[3] I stated that I have never seen harm follow.

The first group may be said to include cases of prostatic obstruction pure and simple without any other structural complication. Here the bladder is in no sense secondarily implicated structurally and is capable on the removal of the obstacle in front of it of both holding and expelling its contents. It is in this class of cases that shrinkage of the enlarged prostate, however induced, speedily leads to the restoration of the function of micturition in the fullest sense of the term. This group is best illustrated by cases where for some special or pressing reason the obliteration of the vasa was brought about at an earlier period in the history of prostatic obstruction than is usual. Hence this group is less numerous than the succeeding one where catheter life or the systematic use of this instrument had been resorted to previously. The following cases are selected.

A man, aged 68 years, who was seen in 1896, was suffering from the ordinary symptoms of enlarged prostate—namely, frequent micturition, more especially at night, some degree of residual urine, and occasionally incontinence, the diagnosis being confirmed by rectal examination. He had been advised to use a catheter but could not do so conveniently as he had lost an arm. Double vasectomy was performed, with an interval of 10 days between each section. I saw him nearly three years afterwards; the prostate was reduced in size. He was quite well and had no occasion for the catheter.

About the same time I divided the vasa of a man, aged 65 years, whose work was greatly interfered with by frequency of micturition due to enlarged prostate. He also had been advised to use a catheter. He was treated in the same way as the patient in the preceding case with a similar result and was examined 18 months afterwards.

In 1897 I saw a man, aged 65 years, who in the course of his occupation travelled much by railway and otherwise. He had an enlarged prostate and much frequency of micturition for which he was advised to use a catheter. As this meant giving up his livelihood vasectomy was practised with good results and 18 months afterwards he reported himself as being quite well without requiring the catheter.

Early in 1898 I saw a patient in consultation in whose case it had been necessary to tie in a catheter for retention of urine caused by a large prostate. This was so intolerable to him that I suggested vasectomy, which was performed. I have heard on several occasions that he still remains in good health and is able to urinate normally. Six months after the operation I found the prostate much reduced in size.

In 1893 I operated upon a man, aged 67 years, for stone by litholapaxy. There was also some enlargement of the prostate. He remained well till 1897 when symptoms of considerable enlargement developed, and though he had no recurrence of stone he gradually became entirely dependent upon the catheter and was liable on slight provocation to attacks of cystitis and epididymitis. The frequent use of the catheter greatly interfered with his capacity and desire for an active outdoor life and he was compelled to give up hunting and other exercises. In 1898 I divided both his vasa in the usual way with the result that his prostate symptoms gradually disappeared and he resumed his hunting during the whole of last winter as he had previously done. He was able to give up his catheter, using it once in the 24 hours for washing out. He had accustomed himself to the latter as a precautionary method against stone, and though the process, he admitted, was hardly necessary he did not like to give it up.

This appears to be the first published series of cases of prostatic hypertrophy treated by operation in which the object of preserving the normal function of micturition as opposed to an artificial one as illustrated by what is known as catheter life, has been successfully demonstrated. Before leaving this group I would observe that in every case it was explained that the section or division of the vasa might interfere with sexual possibilities. It may, I think, be claimed that in all these instances, and in others that might be mentioned, whatever influence, if any, was exercised on the sexual act the natural function of micturition was preserved to the person operated on and the necessity for the permanent use of a catheter averted. When any question has arisen under these circumstances, so far as my experience goes, relative to whether the urinary or the sexual function should receive first and paramount consideration it has invariably been decided by the patient in favour of the former.

I pass to the second group of cases where I have described the effects following as being good but restricted to certain conditions. These include instances where structural changes in the bladder have supervened upon prostatic obstruction and where catheter life, or the necessity for it, has been more or less developed. This group provides by far the greater proportion of cases to which this class of operations has been recently applied. In a previous paper[4] I showed that there were certain structural effects which followed in the wake of prostatic and other forms of obstruction to the escape of urine by the natural passage which were irrecoverable from. These have reference to the bladder as a reservoir capable of self-expulsion. Hence in the consideration of the class of operations of which vasectomy is a type cause and effect must not be confused. The prostate may be rendered in these ways incapable of obstruction any longer, but this by no means implies that the bladder can be made to expel. And yet the realisation of the former by these means has in this way proved in many instances, which I will proceed to illustate, an inestimable boon.

In November, 1895, I operated on a man, aged 70 years, with a very large prostate and increasing difficulty in catheterism which sometimes required hot baths and opiates before it could be effected. He had shaky hands which increased the difficulty. I advised a double vasectomy. 12 months after this he wrote to me: "I certainly am very much better than I was before the operation, and so long as I am quiet and able to carry out my regular treatment I get on very comfortably."

Another case was that of a man, aged 75 years, with a very large prostate and increasing difficulty in passing his instrument. Double vasectomy was performed in 1898. He soon found that he could pass his catheter quite easily and he again wintered abroad last year with much comfort. He had been previously obliged to forego this change by reason of catheter difficulties.

A man, over 60 years of age, whom I saw in consultation

[1] Surgery of the Hypertrophied Prostate, by Dr. J. W. White, Transactions of the American Surgical Association, 1893.
[2] THE LANCET, August 5th, 1899, p. 331, and May 5th, 1900, p. 1275.
[3] THE LANCET, May 5th, 1900, p. 1275.
[4] THE LANCET, May 5th, 1900, p. 1275.

and in whose case I advised vasectomy for enlarged prostate with frequent attacks of epididymitis which confined him to bed, has entirely got rid of the latter painful complication by the obliteration of his ducts and is now again in the active practice of his profession.

The next case to which I shall refer is an instance of the application of vasectomy as an adjunct to other surgical purposes. It was that of a man, aged 70 years, whom I operated upon for stone in the bladder in 1893. The prostate was so large that I had unusual difficulty in performing the ordinary operation of litholapaxy, and after removing a considerable portion of the stone in this way I had to abandon it without effecting a complete removal of the calculus. The patient, however, did well and was much relieved. In the meantime I divided both vasa and after six weeks' interval I repeated the crushing operation. The considerable shrinkage that was thus effected in the size of the prostate rendered this proceeding easy and complete.

For the relief of hæmorrhage arising out of difficult catheterism in connexion with prostatic obstruction vasectomy has been adopted with good effect in rendering the process easy and avoiding bleeding. This is only to be expected as the result of a process which is generally admitted as reducing the blood-supply to the parts involved. Painful catheterism arising from spasm and tension as the instrument enters the prostatic urethra may be usually relieved in this way by the general shrinkage and relaxation of the gland that follows section of the vasa. I have had several illustrations of this. For reasons such as are here illustrated and for others that might be added to the group the obliteration of the vasa has proved of much service, though the voluntary and natural powers of the bladder may have either not been restored, or have been but partially restored. Easy and safe catheterism has in this way been substituted for that which previously was painful if not also dangerous.

I will conclude with a notice of the third group of results of vasectomy, which seems to me to include the most interesting and suggestive of the series that I have here brought under notice. I refer to those instances where the results are alleged to have been, or seem to have been, inadequate or negative.

For the purposes of this paper I have made numerous inquiries by letter, in addition to other sources of information, from patients who have undergone vasectomy since 1893, when I commenced to practise it with some frequency. Amongst these is a man, now aged 81 years, upon whom I performed double vasectomy for prostatic enlargement of some years' standing early in 1897. On writing to me he informed me that he did not think that he had derived much benefit from this operation. The history of his case, however, will hardly bear out this statement. The patient had been under my observation for four years previously to this. He had considerable irritation and spasm, for which the catheter was being constantly employed. There was also so much cystitis that I then drained his bladder by the perineal route with temporary benefit. In 1896, however, his condition in these respects became worse and the bladder became very foul in spite of catheterism and washing out. In addition to this the specific gravity of the urine began to drop so as to vary from 1004 to 1007. As this condition so often precedes renal disease and uræmia in these cases of prostatic obstruction I divided the vasa early in 1897. From that time forward the urine, amongst other changes, gradually returned to a normal density and the general condition of the patient improved, though he continued to be, and still is, largely dependent on the catheter. He uses it much more easily and, as I am told by his friends, is in good general health. He doubtless failed to appreciate the renal improvement, which I have similarly observed in other instances as being probably connected with mechanical reasons. The patient doubtless measured the success of the vasectomy, as others do, relatively as to whether he could or could not dispense with his instrument, without sufficient regard to the less striking contingencies of catheter life. This patient should properly occupy a place in the second group, but I thought it better to take him at his word as one whom vasectomy had not benefited. The substitution of a good contractile bladder for one that obstruction had worn out would probably suffice to complete the cure. I will take one more instance which may properly be considered in this group from the patient's point of view, though, as with the preceding case, I decline to agree with the patient. It has its lesson to teach which may be the more conveniently learnt in this place.

A man, aged 74 years, was operated upon for stone by litholapaxy by me in 1894. The condition was complicated with a large prostate for which he had to use a catheter. The operation was not an easy one by reason of the former. He had two recurrences in the course of the two following years which I mainly attributed to the obstructing prostate, so I divided both vasa in 1896, with an interval of some weeks between each. He has had no recurrence of stone, can pass his catheter quite easily, keeps free from cystitis, goes to Scotland to fish (a sport which he previously had to abandon), and is now not entirely dependent on the catheter. For a man at the age of 80 years I should say that he was in excellent health, and yet because he is not able to dispense with the instrument entirely he is not disposed to admit that vasectomy did him much good. I am not inclined to agree with him and consequently I should put him also in the second group.

My experience in litholapaxy as illustrated in a recent series of 100 cases[5] leads me to believe that vasectomy has proved an important aid in preventing the recurrence of stone after operation when complicated with enlarged prostate. It probably effects this by providing a free and more dependent exit from the bladder as well as by diminishing the large amount of tenacious mucus which the enlarging prostate both provokes and helps to supply and which lessens materially as the gland shrinks.

I can hardly recall an instance of vasectomy or torsion of the vas for hypertrophy of the prostate where good has not followed though it may not at once be appreciated by the patient. It is not always relative as to whether or not the patient can or cannot dispense with the catheter. Nor is credit always given in this group of cases to the fact that though chronic prostatic obstruction had already caused permanent structural damage to the bladder as the organ for expelling urine and not merely containing it, the further progress of an obstructive disease was arrested by obliteration of the vasa and life was thus indefinitely preserved and rendered tolerable. Though in the case of the eye a cataract operation is successful this does not necessarily imply that spectacles can be invariably dispensed with.

In one instance benefit was slow in coming where the obstruction had previously been of a very chronic character and the bladder had become much weakened and fasciculated. It was found six months after a portion of one of the vasa had been excised and the ends ligatured in a loop that the divided ends had reunited and the continuity and use of the duct had been re-established. I have the specimen, which I subsequently excised and then torsed the freshly divided ends separately. Benefit followed upon this. The specimen was carefully examined for me by Mr. J. G. Pardoe. I could hardly think, unless I had seen it, that this was possible; at all events I have not met with another instance.

In conclusion, surgery may be said to be entering upon a new phase of research for therapeutical purposes. Thyroidectomy and oöphorectomy have produced results so remarkable and changes in the organism so profound that complete removal, except for the express purpose of saving life, is in the first instance condemned as totally inadmissible, and in the second instance is deprecated by a large and constantly growing number of surgeons.

The effect of castration on youthful males for the purposes of the harem has been known for centuries. The effect upon adult and aged men has only recently been investigated. In children the results are not dangerous to life; in the aged, apart from the shock of such a severe surgical mutilation, they are, in some cases at all events, dangerous to reason if not to life.

The explanation offered by physiology is the well-known theory of "internal secretion." This theory, proved so strikingly correct in the case of the thyroid, may, although the testis is not a ductless gland, be equally applicable to the latter organ. In any case it is incontestible that most serious results follow total removal of both testes, whereas I can confidently assert from my seven years' experience of the operation that double vasectomy, performed in the manner which I have described in a previous paper,[6] causes no untoward results whatever.

Lower Berkeley-street, W.

[5] THE LANCET, Nov. 12th, 1898, p. 1250.
[6] THE LANCET, May 5th, 1900, p. 1275.

# ON IMMUNITY AGAINST PROTEIDS.

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## PRELIMINARY ACCOUNT.

IT is assumed in each of the two theories of immunity which are dominant at the present time—viz., Ehrlich's "seitenkette" or side-chain theory and Metchnikoff's phagocytic theory—that immunity is merely a special case of assimilation. According to these views, for every substance assimilated by a living organism there is present somewhere in that organism a specific anti-substance, and in fact the chief difference between them is whether the anti-substances are produced by leucocytes or by other cells of the body. From the standpoint of immunity the toxic action of a toxin is a matter of accident, indeed of indifference, since a toxin does not produce its antitoxin by virtue of its toxic power, but because on introduction into the animal body in such a way that its immediate destruction is avoided it is assimilated. With the object of obtaining evidence as to the validity of this assumption the following experiments were undertaken with a view to ascertaining what changes, if any, are to be observed in the blood serum when proteids of various classes are introduced into the animal body in steadily increasing amounts. In order to avoid destruction by the digestive ferments of the alimentary tract these substances were not given by the mouth, but were injected intra-peritoneally. As experimental animals rabbits were used and the proteids employed were the following: (1) crystallised egg albumen from the white of fowl's egg; (2) serum globulin from the sheep; (3) serum globulin from the bullock; and (4) Witte's "peptone."

1. *Crystallised egg albumen.*—This was prepared from the white of fowl's eggs by the method recommended by Hopkins and Pinkus.[1] According to Hopkins this purified proteid is to be regarded as a single chemical substance. After repeated intra-peritoneal injections of this albumen continued for two months, the serum of rabbits acquired the power of forming a dense precipitate when added to solutions of crystallised egg albumen. The formation of this precipitate occurred at the ordinary temperature of the laboratory, but was accelerated at 37° C.[2] In very many control experiments neither the serum of normal rabbits nor any of the immunised rabbits mentioned below ever had this action. This precipitate is soluble in 2 per cent. sodium chloride solution and the solution gives the ordinary proteid reactions. The serum of a rabbit treated with egg albumen from the fowl forms a slight precipitate with the albumen from the white of duck's eggs, but not nearly so much as is thrown down from solutions of the same strength of fowl's albumen. I was unable to obtain duck's egg-albumen in a crystalline form, and the precipitation which occurred with it is doubtless due to the presence in small quantity in it of the albumen present in fowl's egg or of a closely allied albumen. The serum thus obtained has no precipitating action on the globulin prepared from sheep's serum, nor on that from bullock's serum, nor on serum albumen from the sheep or bullock. It was likewise without precipitating action on Witte's "peptone." By these injections, therefore, a specific anti-body had been produced—an *anti-proteid* or *precipitin* which had the power of throwing down the egg albumen into a solid insoluble state. The chemical nature of this reaction remains to be investigated and we may conveniently call the precipitate formed by the action of the precipitin the *precipitum*.

2. *Serum globulin from the sheep.*—Sheep's serum was half saturated with ammonium sulphate at laboratory temperature; the precipitate after filtering was washed with saturated ammonium sulphate, dissolved by the addition of water, and again precipitated by semi-saturation with ammonium sulphate. After several precipitations the globulin was dried on glass plates at 37° C. In this case also continued intra-peritoneal injection led to the appearance in the serum of a precipitin. This antiglobulin serum had no action on egg albumen or upon Witte's "peptone," although with the similarly prepared globulins from bullock's serum a small precipitum was obtained after 15 hours at 37° C.

The precipitum from sheep's globulin is soluble in 2 per cent. saline solution and gives the ordinary proteid reactions. The serum of the rabbit immunised against sheep's globulin had also acquired another property—namely, that of agglutinating the red corpuscles of the sheep. In order to be sure of removing all traces of serum the defibrinated blood was diluted ten times with saline solution (0·8 per cent.). After centrifugalisation the clear fluid was removed and the process repeated several times. Finally, a suspension was made of one part of blood in 40 of saline solution.[3] The agglutination was unmistakeable after the mixtures had been for an hour in the incubator at 37° C. The agglutinating action was only present in the anti-sheep's globulin serum, it was absent in the sera obtained by immunisation against bullock's globulin, egg albumen (fowl's), Witte's "peptone," and also in sera from normal rabbits. This action is doubtless due to the presence of the same, or of a closely allied, substance in the sheep's red corpuscles and in the "globulin" from sheep's serum as above prepared.

This anti-globulin serum also clumps the washed red corpuscles of the fowl. I have not found this agglutinating power in any other sera obtained from normal or other rabbits. It follows from these facts that the product here called "sheep's globulin" is a mixture of substances. The main portion of the precipitum given by its precipitin is formed from a substance which is not present in the "serum globulin" of the bullock. One substance present in small quantity in the sheep's globulin is, however, also present in bullock's globulin, since the precipitin of sheep's globulin gives a small precipitum with bullock's globulin. This substance common to the two globulins is not present in red corpuscles of the sheep or fowl, since the precipitin for bullock's globulin does not agglutinate these corpuscles. Further, we must suppose that there are two other substances in the serum globulin of the sheep, one present in fowl's red corpuscles and the other present in those of the sheep, since, as the following experiment shows, immunisation against sheep's globulin leads to the appearance in the serum of two distinct agglutinins, for sheep's and for fowl's corpuscles respectively. If the serum of a rabbit immunised against sheep's globulin be allowed to agglutinate washed corpuscles of the sheep the clear fluid left above the corpuscles will not now agglutinate fresh corpuscles of the sheep if sufficient corpuscles have been used on the first instance. But this fluid still has the power of agglutinating fowl's corpuscles.. And conversely after anti-globulin has agglutinated fowl's corpuscles, it has lost the power of agglutinating fresh fowl's corpuscles, but will still agglutinate those of the sheep.

3. *Serum globulin from the bullock.*—This product was prepared in the same way as the serum globulin from the sheep. And here, too, a specific precipitin made its appearance in the serum of the immunised animal. And just as the precipitin for sheep's globulin gives rise to a slight precipitum with bullock's globulin, so the precipitin for bullock's globulin causes a slight precipitum with sheep's globulin; in each case the precipitum is very much smaller than that given with the globulin by which the precipitin was produced. As has been mentioned, the precipitin for bullock's globulin did not agglutinate sheep's corpuscles or bullock's corpuscles.

4. *Witte's "peptone."*—Commercial Witte's "peptone" was dissolved in physiological saline solution, boiled, cooled, and filtered. Immunisation led to the appearance of substances in the serum which produced a precipitum in Witte's "peptone" at 37° C. Control experiments gave absolutely negative results. Most remarkable was the fact that the precipitum after careful washing with 0·8 per cent. saline solution and after solution in 2 per cent. saline did not give the biuret reaction, though it gave the other general reactions of proteids. The fluid removed after centrifugalisation gave a distinct biuret reaction. Here, then, the precipitum belonged to an entirely different class of proteids from the original body.

The effect of heat on the precipitins of egg albumen, of

[1] After several washings and re-precipitations the precipitate was dried on plates. A mixture of ammonium sulphate and proteid crystals was thus obtained. Journal of Physiology, vol. xxiii.

[2] It is necessary to remove any excess of ammonium sulphate by dialysis or the precipitation will not take place.

[3] The serum of rabbits lakes the corpuscles of the sheep. This hæmolytic action may be abolished by heating the serum to 50° C. for half an hour. In all the agglutinating experiments mentioned in this paper the sera were thus heated.

the serum globulins of the bullock and sheep was similar in so far that heating to 56° C. for half an hour led to no appreciable weakening of their action. On the precipitins for Witte's "peptone" heating to 56° C. for half an hour had a marked weakening action, although the precipitins were not entirely destroyed. Adding normal rabbit's serum markedly increases the precipitating action of this heated serum, although normal serum itself remained quite clear with the "peptone." In this respect the "peptone" precipitin is similar to the hæmolysins and the bacteriolysins, but the number of substances involved in this reaction is so large that much further investigation is necessary before definitely contrasting this with the other precipitins.

A number of experiments were made to ascertain whether the precipitin is used up in the formation of the precipitum. A mixture of the precipitins of bullock's globulin and egg albumen was added to a solution of egg albumen. After standing at 37° C. for 15 hours the mixture was centrifugalised and the clear fluid was tested for the presence of the precipitins. It was found to give a precipitum with bullock's globulin but to give none with egg albumen. At the same time a control experiment was made with a mixture of the precipitins of egg albumen and bullock's globulin with bullock's globulin. In this case the clear fluid precipitated with egg albumen but not with bullock's globulin. Experiments of a similar kind with the precipitins of egg albumen and sheep's globulin were made, and in this case also one or other of the precipitins disappeared. From these experiments it is concluded that the precipitins are used up in the course of their action, and bearing in mind their specificity this is strong evidence that the action of these bodies is chemical.

In this preliminary account of the precipitins no attempt has been made to arrange the proteids on which they act in a systematic manner. But it is clear that the precipitins gave us a means of distinguishing between various proteids and mixtures of proteids. And at present, at least, this animal test is more delicate than any chemical method of discrimination available.

These experiments give, I think, strong support to the view that the production of immunity is due to processes of assimilation, and they also explain a physiological point which has long been a subject of discussion. When injected into the circulation peptone disappears very quickly from the blood-stream. Practically nothing is known as to the fate of the peptone which thus vanishes. But clearly this disappearance of peptone is exactly paralleled by the disappearance of the tetanus toxin from the blood-stream. In both cases we produce by immunisation a specific anti-substance. And just as in Wassermann's experiment tetanus toxin is neutralised by an emulsion of fresh spinal cord, so experiments are on record in which peptone has been neutralised *in vitro* by pieces of small intestine.[4] The instability of the anti-body for Witte's peptone and its reactivation by normal serum, showing in other words that it can form *precipitoids* analogous to the toxoids, has already been mentioned.

Finally, these experiments give the explanation of certain facts about which a good deal has been written though but little has been determined by experiment. Kraus's precipitates, for instance, and the precipitates formed by adding anti-eel's serum to eel's serum, or white of egg, are examples of the precipitins.[5]

The connexion of these experiments with the mechanism of agglutination remains to be mentioned. Without discussing the question in detail it may be said that three explanations of agglutination have so far been put forward. In the first place Grüber explains it by assuming that the surface of the micro-organisms becomes sticky. In favour of this view are certain microscopical appearances in the case of motile micro-organisms and the swelling up of the membranes of the micro-organisms. Against it, however, is the circumstance that non-motile bacteria and red corpuscles can also be agglutinated, and though stickiness would account for the cells remaining together when once in contact it gives no account of the way in which they are brought together. This view is untenable because agglutination is sometimes very rapid; it may occur, for instance, in a few minutes—that is, too quickly to be explained by diffusion currents or Brownian movements; secondly, because in agglutination work is done for which the viscous theory provides no source of energy; and thirdly, because the cells not only agglutinate but they settle much more rapidly than the control suspensions.

A second explanation is that the cells are brought together by the contraction of a clot. This view must be described as fanciful since even its adherents admit that the clot is invisible both to the naked eye and to high microscopical powers.

The third view is that of Bordet who regards the phenomenon as analogous to the clearing of inorganic suspensions. Bordet ascribes it to "diminished molecular adhesion" between the cells and the fluid bathing them.

It has already been mentioned that the precipitin of sheep's globulin agglutinates washed red corpuscles of the sheep. Now, if sheep's corpuscles be laked by the addition of distilled water this precipitin causes a precipitate to form in these laked corpuscles. Bullock's globulin precipitin, on the other hand, does not agglutinate these corpuscles and it does not give rise to this precipitate with the laked corpuscles. Similarly, other non-agglutinating sera—e.g., anti-egg-albumen, anti-Witte-"peptone," and normal rabbit's sera—give negative results with laked corpuscles of the sheep. Normal horse serum agglutinates rabbit's corpuscles and also gives a precipitate with the laked corpuscles. On the other hand, a solution of a horse serum that had been kept dried for several years did not agglutinate rabbit's corpuscles and did not produce any precipitate in the laked corpuscles.

We see, then, that these sera which *agglutinate the corpuscles also produce a precipitate in the laked corpuscles*, whether these sera contain artificially produced or naturally occurring agglutinins. If this precipitation occurs in laked corpuscles it should also occur in the uninjured corpuscles. And arguing from the production of precipitins against proteids as above described we should, indeed, expect that on immunising against red corpuscles we should obtain a serum which produces a precipitum in the red corpuscle itself—that is, which makes the substance of the red corpuscle less soluble in plasma or serum or salt solution.[6] We are now in a position to explain the agglutination of the red corpuscles. Bordet[7] has shown that this process depends on some change in the corpuscles and also on the nature of the fluid by which they are surrounded. We may have corpuscles that have undergone the change requisite for agglutination but which do not agglutinate, just as for the agglutination of silica and other organic precipitates the fluid bathing them must have certain definite properties. We see the two factors in this process of agglutination in some experiments of Danyse,[8] which, after repetition, I can fully confirm, though I differ from him entirely in his deductions from them. Ammonia in sufficient concentration lakes the red corpuscles of the goose. If a concentration sufficiently low be taken no hæmolysis occurs. Taking a suspension of these corpuscles in physiological saline solution, containing ammonia in amount just insufficient to produce hæmolysis, on adding to the suspension any of the phosphates of sodium, agglutination very rapidly occurs. Ammonia or the sodium phosphate alone do not produce agglutination. The ammonia clearly produces some change in the corpuscles which renders them agglutinable in a suitable medium. Now ammonia forms, as has been known for many years, a product called "histon" from the red corpuscle of the goose (this is not mentioned by Danyse). Histon is soluble in a certain amount of ammonia, forming a viscid solution; with an insufficient quantity it remains undissolved (Kossel).[9] The following table is quoted as an example illustrating these statements. In each tube 20 cubic centimetres of a 1 per cent. suspension of defibrinated goose's blood in saline solution (0·8 per cent.) was placed, and to each tube 2 cubic centimetres of sodium phosphate ($Na_2HPO_4$, 1 per cent. in 0·8 per cent. saline) was added. Decreasing

[4] *Neumeister*: Lehrbuch der physiologischen Chemie. Jena, 1893. *Zeitschrift für Biologie*, München, vol. xxvii.

[5] **Bordet**: Annales de l'Institut Pasteur, 1899.

[6] Evidence of the similarity at least of the agglutinins and the precipitins is given by the fact that they are uninjured by exposure to 56° C. for half an hour; and secondly, that both kinds of substances disappear in the course of their action. That the anti-bodies to Witte's "peptone" are destroyed at 56° C. does not affect the similarity, for, as above mentioned, the changes resulting in "Witte's peptone" are further reaching than in the case of coagulable proteids.

[7] Loc. cit.

[8] Annales de l'Institut Pasteur, 1899.

[9] Zeitschrift für Physiologischen Chemie, vol. viii., p. 511.

quantities of ammonia were then put in the tubes. Temperature 20° C.

| Amount of $NH_3$ added. | Immediate result. | Result after 15 hours. |
|---|---|---|
| 1. 2 c.c. N/100 | Rapid agglutination in 10 to 15 minutes after mixing. | Complete hæmolysis. Uniformly gelatinous fluid. |
| 2. 1·5 | | |
| 3. 1·0 | | |
| 4. 0·8 | | |
| 5. 0·6 | | Hæmolysis gelatinous precipitate at bottom of tubes. |
| 6. 0·4 | | |
| 7. 0·3 | | |
| 8. 2 c.c. N/1000 | | |
| 9. 1·5 | | |
| 10. 1·0 | | |
| 11. 0·8 | | Fine precipitate on sides of tubes. |
| 12. 0·6 | | |
| 13. 0·4 | | No hæmolysis. |
| 14. 0·3 | | |
| 15. 0·2 | | |

Ammonia, then, acts as a precipitin on the red corpuscles in a certain strength, forming insoluble histon within the corpuscle. When the medium is rendered suitable by the addition of sodium phosphate the corpuscles agglutinate. Agglutination consists, therefore, of two processes. In the first place a chemical change in the corpuscle by which some proteid becomes insoluble or relatively less soluble in the serum. This corresponds to the action of the precipitins on their corresponding proteids, and, indeed, is an instance of the action of a precipitin under special circumstances. The corpuscle is now ready for the second stage, in which it is carried down as mica can be carried down by alcohol or other inorganic precipitates by the addition of various salts, especially those of acids or bases of a high valency. The latter phenomena are generally regarded as effects of surface tension, and in this connexion one or two known, but so far unconnected, facts in reference to agglutination may be mentioned which are all in favour of surface tension playing a part in the second stage of this process. The striking feature of agglutination is the smaller surface relatively to their mass which the clumped cells possess in comparison with the unclumped cells. This is exactly what would be produced when particles float in a fluid which does not wet them. The surface of the fluid in contact with the particles here tends to be as small as possible. This result is attained by the particles agglutinating. It need hardly be pointed out that the energy of surface tension is ample to account for the work done in agglutination. Now the change brought about by a precipitin is that tending to make the surface of the fluid in contact with the solid as small as possible. If a solid immersed in a fluid be soluble in the fluid the surface between the two tends to increase to a maximum, or, in other words, the solid dissolves. If the solid become less and less soluble the sign of the surface tension changes—that is, the surface between the two tends to become as small as possible.[10] It may further be mentioned that in all cases of agglutination rise of temperature hastens the process.[11]

In conclusion, the precipitin or chemical stage and the surface tension or physical stage are efficient causes of agglutination, though it is possible that in the case of motile micro-organisms an increase in the viscosity of their surfaces also plays a part in the process.

Cambridge.

[10] Hence the assumption of a fatty membrane for the red corpuscles explains rouleaux formation. Shattock (Journal of Pathology and Bacteriology, 1900, No. 111) regards agglutination as an exaggerated rouleaux formation, though he does not discuss the explanation of these processes.

[11] It may be objected that the temperature only influences the first or chemical stage and not the second, surface tension action. In the case of ricin, however, I have found that the second stage is also hastened by rise of temperature. If ricin act on guinea-pig's corpuscles at 37° C. and after 12 hours the fluid be removed the corpuscles can be shaken apart and washed with saline. The corpuscles suspended in saline will agglutinate, although the ricin has been removed, and this agglutination is quicker at 37° C. than at room temperature. Hence rise of temperature influences the second stage of agglutination in this case.

# CHRONIC EMPYEMA OF THE FRONTAL SINUS WITH NOTES ON THE TREATMENT OF FOURTEEN CASES.

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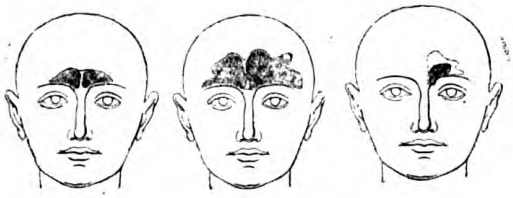
IN that general advance in treatment which has been made in the more special branches of medicine and surgery during the past decade, it may be said without fear of contradiction that a prominent place must be accorded to the improved methods of dealing with diseases of the nose and more especially those met with in connexion with the nasal accessory cavities—e.g., the maxillary antrum, and the ethmoidal, sphenoidal, and frontal sinuses.

The present article deals only with the most frequent chronic affection of the frontal sinus—viz., chronic suppuration or empyema.

To those whose thoughts are not often centred upon the regions under discussion and whose recollections of the anatomy of the nose and its accessory cavities are possibly somewhat vague, it may be well to state a few facts relative to the disposition of these parts and to lay more particular stress upon such of them as are of importance to the surgeon. "The frontal sinuses are contained in the lower part of the frontal bone above the root of the nose and inner ends of the eyebrows" (Quain). They begin to develop about the seventh year but remain small until puberty when they undergo rapid development. 1. They vary much in size even in the same individual and may be absent on one or both sides (Fig. 1, A, represents sinuses of average size). 2. A complete

FIG. 1.



A B C

In diagram A the sinuses are of normal size; in B they are unusually large. C indicates the amount of anterior wall (dark shading) which it is necessary to remove to thoroughly curette a sinus of normal size (indicated by dotted line).

and imperforate bony septum nearly always separates the sinuses in health, but in disease it is not uncommon for the cavities to communicate with one another through a pathological opening in the septum (Fig. 1, B). 3. In exceptional cases the frontal bone may be almost hollowed out by the sinuses so that they extend outwards to the temporal fossæ, upwards to the frontal eminence, and posteriorly almost to the junction of the frontal bone with the small wings of the sphenoid (Fig. 1, B). 4. The external configuration of the forehead or eyebrow gives no clue whatever to the size of the sinuses underneath. 5. The fronto-nasal canal passes through the anterior ethmoidal cells and opens into the middle meatus of the nose at the anterior and upper part of the hiatus semilunaris into which curvilinear depression are also found the ostia or openings of the maxillary antrum and the anterior ethmoidal cells. 6. In many cases the frontal sinus is in almost direct communication with the antrum, as seen in Fig. 2.[1] It will be noted that the fronto-nasal passage terminates very near the antral ostium, from which a fold of mucous membrane extends upwards and inwards, forming a sort of pocket at the bottom of which is the antral opening. Consequently a discharge of pus from the higher sinus would tend to fill the antrum before it appeared in the nasal cavity, so that the antrum may act not only as a generator but also as a recepticle of purulent discharge. 7. The direction and patency of the fronto-nasal canal varies greatly. From above downwards its direction is slightly backwards, and it

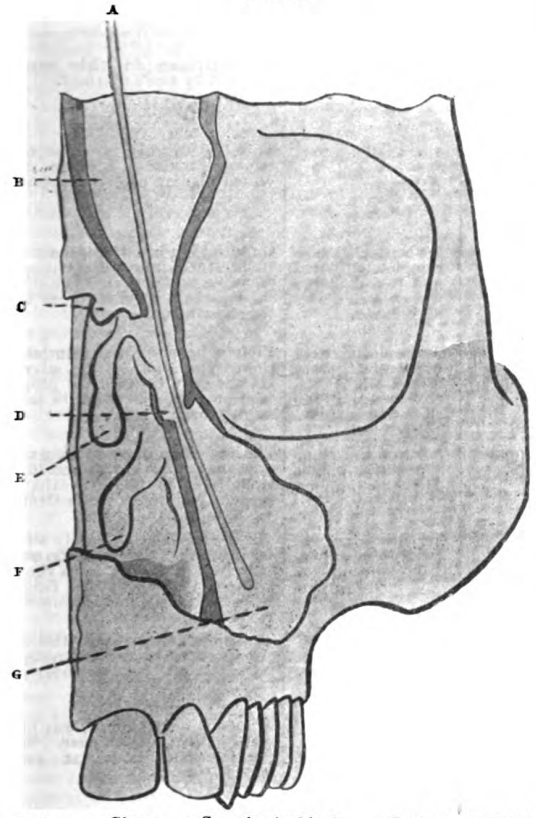
[1] I am indebted to Dr. Filliebrown, Boston, Mass., for permission to use the diagram.

may be so curved or tortuous that it would be impossible to enter the sinus from below without making a false passage. In long-standing cases of chronic suppuration of the sinus or ethmoidal cells it is often quite easy to pass a suitably curved cannula into the frontal sinus from the nose.

The examination of 120 skulls, kindly placed at my disposal by my former teacher, Professor G. D. Thane, showed that if a small quarter-inch trephine is applied to the lower part of the frontal bone included between the middle line and a line drawn vertically upwards from the internal angular process it will in all cases open the sinus on that side if one exists.[2]

*Etiology of chronic suppuration.*—The history of these cases would seem to indicate that the condition may arise as a sequence of an attack of acute suppuration which does not completely recover, possibly because of inefficient drainage from the sinus. Such acute attacks are not uncommonly of influenzal origin or follow in the wake of an acute rhinitis. In many cases the highest sinus is affected by septic infection from one of the other accessory cavities, such as the antrum or ethmoidal cells. I believe this source of infection is the commonest one, and Fig. 2 shows how easy it is for the upper sinus to be affected from the lower one. Similarly, chronic suppuration occurring in the thin-walled

FIG. 2.




A Probe. B, Sinus. C, Superior turbinate. D, Pocket. E, Middle turbinate. F, Inferior turbinate. G, Antrum.

ethmoidal cells through which the fronto-nasal canal runs would almost certainly infect the frontal sinus, especially if, as is generally the case, coincident inflammatory changes in the middle meatus hamper the free discharge of pus into the nasal cavity.

*Symptoms.*—The symptoms of chronic frontal sinus empyema are three in number—(1) a purulent, non-fœtid nasal discharge; (2) frontal or supra-orbital headache or feelings of discomfort such as a heavy weight or tension in the forehead; and (3) more or less well-marked nasal obstruction caused by the growth of polypi or other chronic inflammatory products within the nasal cavity.

The first symptom is a constant one. The pus is seen in the middle meatus and it is rarely fœtid. The discharge may be profuse, necessitating the use of from 10 to 12 handkerchiefs a day. The flow is not so much influenced by the patient's position as is the case in antral suppuration.

Headache may be taken to indicate that pus is retained in the sinus under tension. I have never met with this symptom when the drainage into the nose has been free, but have often cured it by removal of polypi or other obstruction from the middle meatal region. External pressure upwards and inwards on the floor of the sinus may be productive of pain when compared with similar pressure on the normal side, but here again much depends upon whether or not the pus is retained under tension.

In cases of long standing the middle meatus is always more or less blocked with chronic inflammatory products such as polypi, granulations, or sodden congested mucous membrane. If these are removed the anterior ethmoidal region is represented by a mass of granulation tissue bathed in pus, amongst which a blunt probe easily detects tiny spicules of bone or abuts against those remnants of the bony skeleton of the ethmoid which have only partially succumbed to the ravages of a rarefying osteitis. From this lateral mass hangs loosely the middle turbinal in which chronic inflammatory changes identical with those just described have also taken place.

In addition to the symptoms already described the patient's troubles may be aggravated by a dry throat, catarrhal deafness, and a sense of depression, apathy, and inability to work mainly caused by the nasal obstruction already referred to and partly to the chronic absorption of septic matter from the nasal mucous membranes.

Chronic frontal sinus empyema is not uncommonly bilateral; in five out of 12 cases here recorded this was the case. Under such circumstances the sinuses may discharge into their corresponding nasal cavity, being separated from one another by an imperforate septum (see Cases 6 and 13), or through a perforation in the septum the cavities may communicate and only empty into one side of the nose (see Case 13).

*Diagnosis.*—A purulent discharge in the middle meatal region almost invariably indicates suppuration of one or more of the nasal accessory sinuses—antral, ethmoidal, or frontal. Headache and nasal obstruction are also symptoms common to empyema of each of these cavities. Hence in arriving at a differential diagnosis each sinus must be carefully examined in detail and the surgeon will find that not rarely they are simultaneously diseased. Since the maxillary sinus is more frequently diseased than the ethmoidal or frontal, it is a good rule to regard every case presenting the characteristic symptoms as one of antral suppuration until examination proves this presumption to be wrong.

Transillumination of the antrum by means of a small electric lamp held in the mouth will as a general rule afford strong presumptive evidence of the presence or absence of pus in the cavity. If any doubt exists the sinus should be explored by a fine trocar and cannula (Lichtwitz's) passed into it from the nose. This little operation implies a preliminary cocainisation of the anterior half of the inferior meatus and then passing the trocar and cannula between the anterior end of the inferior turbinal and the outer wall of the nose in a direction outwards and backwards until the inner antral wall is pierced. The trocar is removed leaving the cannula in position, and on irrigation with warm saline or boric lotion absolute positive or negative evidence of suppuration is at once obtained. With cocaine, care, and a little dexterity the latter operation can be performed with ease and almost painlessly, while it is the only positive test which we possess in the diagnosis of antral suppuration. If such procedures give negative evidence the source of the purulent discharge must be sought for in the ethmoidal or frontal sinuses. In chronic cases the latter cavities are almost always associated in disease. The clinical signs of ethmoidal suppuration have already been referred to—viz., a purulent discharge in the middle meatus associated with a swollen polypoid or granular degeneration of the mucous membrane of the anterior ethmoidal region, amongst which a blunt probe easily detects areas of exposed bone or even loose spicules of the same in various stages of rarefying osteitis. To examine the frontal sinus the middle meatus should be cleansed with wool mops and an attempt made to pass a suitably curved cannula into the higher sinus, and if successful its cavity may then be irrigated and the nature of the contents ascertained. The presence of the cannula in the sinus may be further assured by placing one end of an aural auscultation-tube on the floor of the sinus and the other in the surgeon's ear; on injecting the lotion

[2] Vide THE LANCET, Sept. 26th, 1896, p. 866.

14 CASES OF CHRONIC EMPYEMA OF THE FRONTAL SINUS.

| No. | Sex and age. | Date when seen. | Duration of symptoms. | Sinuses involved. | Treatment. | Result. | Remarks. |
|---|---|---|---|---|---|---|---|
| 1 | M., 38 years. | October, 1896. | 18 years.* | Double frontal sinuses; double maxillary sinus (empyema). | Alveolar drainage of antra; external radical operation on the frontal sinuses. | Sinuses cured. There was a slight discharge in irrigation of the antra (February, 1900). | The patient nearly died under operation owing to the post-nasal space not having been plugged prior to operation; blood, therefore, flowed freely into the lungs during operation. |
| 2 | F., 22 years. | June, 1897. | 7 years. | Both frontal sinuses and ethmoids. | External radical operation. | Fatal, after seven months suffering, from chronic septic osteomyelitis.† | This, my only fatal case, was certainly due to imperfect drainage into the nose and tightly stitching up the wound at the close of operation. Suppuration recurred in the sinuses and pus entered the freshly opened diploë of the frontal bone. Seven similar cases have been recorded. |
| 3 | F., 37 years. | March, 1898. | 5 years. | The left frontal sinus and both maxillary antra. | Radical operation on the left sinus and antrum; intra-nasal opening and irrigation of the right antrum. | Cure. | The drainage in this case was secured by Luc's ‡ method (*vide* infra). |
| 4 | F., 19 years. | April, 1899. | 5 years. | Both frontal sinuses. | Radical operation on both sinuses at intervals of three months. | Cure. | The drainage in this case was secured by Luc's method. |
| 5 | F., 36 years. | May, 1899. | 25 years. | The right frontal sinus and the right maxillary antrum. | Removal of mid-turbinal and irrigation of the sinus; alveolar drainage of the antrum. | Cure. | This is the only chronic frontal sinus empyema I have known cured without external operation. |
| 6 | M., 35 years. | June, 1899. | 10 years. | Both frontal sinuses. | Irrigation of sinuses and intra-nasal treatment. | The headaches were completely cured and the discharge was greatly diminished. | On syringing into the left sinus the fluid returns from the right nostril, showing perforation of the septum. The patient only requires to use one handkerchief a day. |
| 7 | M., 52 years. | July, 1899. | 9 years. | The right frontal sinus and the right maxillary antrum. | Intra-nasal treatment and sinus irrigation; alveolar drainage of the right antrum. | The headaches were cured but there was a slight discharge from the sinus and antrum. | Profuse hæmorrhage (arterial) followed puncture of the alveolus. It was only checked by plugging the antrum and middle meatus with gauze. |
| 8 | F., 27 years. | October, 1899. | 3 years. | The left frontal sinus and the left antrum. | External radical operation; alveolar drainage. | Cure of the sinus suppuration; slight discharge from antrum. | The headaches have entirely ceased and the patient has gained 16 lb. in weight since the operation, the general health being excellent. |
| 9 | F., 42 years. | October, 1899. | 5 years. | The right frontal sinus and antrum. | Radical operation on the sinus; alveolar drainage of the antrum. | The discharge was greatly diminished. | The wound was completely stitched at the close of the operation and the gauze was removed from the nose, followed by irrigation from the nose: an unsatisfactory method. |
| 10 | F., 16 years. | December, 1899. | 3 years. | The right frontal sinus and antrum. | Radical external operation on the sinus and antrum. | Cure. | The sinus being small, the cavity was practically obliterated by free removal of the anterior bony wall. |
| 11 | M., 20 years. | December, 1899. | 4 years. | Both frontal sinuses and both maxillary antra. | Radical external operation on the left sinus. Both antra were drained through the alveolus. | Cure. | The sinus being small, was obliterated as in the last case. The resulting depression is scarcely noticeable. |
| 12 | F., 30 years. | February, 1900. | 3 years. | Both frontal sinuses. | External radical operation. | Relieved, but slight discharge from the sinus continues. | — |
| 13 | F., 19 years. | April, 1900. | 2 years. | Both frontal sinuses. | External radical operation. | Cure. | The sinuses communicated through the septum. They were very large (Fig. 1B). Although the right sinus was diseased there was never any trace of pus or disease in the right nasal cavity. |
| 14 | F., 50 years. | May, 1900. | 5 years. | Left frontal sinus and the left maxillary antrum. | External radical operation on the sinus; alveolar drainage of the antrum. | Cure. There was great diminution of the discharge. | The sinus was packed for three days and then syringed out twice daily for a fortnight through a small indiarubber tube passing through the sinus and out of the corresponding nostril. |

* *Vide* Brit. Med. Jour., 1897. † *Vide* Brit. Med. Jour., 1899.

‡ Luc's modification of the radical operation involves two special features—(1) draining the sinus by means of a convolvulus tube, the expanded end of which rested in the infundibulum, the lower end projecting from the corresponding nostril; and (2) complete suture of the external wound. The operation is now rarely performed.

mixed with a little air the "bubbling" of the fluid can be distinctly heard within the sinus by the surgeon. Transillumination of the frontal sinus has been shown by Logan Turner to be of little practical value in diagnosis. In old-standing cases the passage of a cannula into the sinus may often be easily carried out, but when it is difficult or impossible it is well to remember that no force should be used in these localities.

In some cases it will perhaps be necessary to remove the diseased ethmoidal cells and anterior portion of the middle turbinal before the continuance of suppuration demonstrates that the source of discharge is in the higher sinus.

When the antrum and the frontal sinus both contain pus it is a nice point to determine whether the first-named cavity acts as a receptacle or generator of pus. In the latter instance, if transillumination gives a very dark shadow under the eye of the affected side we may suspect a thickened and diseased mucous membrane of the antral cavity, indicative of disease originating in that cavity, whereas a lighter shadow would suggest that the sinus was rather a reservoir than a generator of the purulent discharge. Of other diseases, supra-orbital neuralgia with slight swelling of the eyelid is most commonly confounded with frontal sinus empyema, but the absence of nasal symptoms would militate against the latter disease.

*Treatment.*—Whatever treatment is finally adopted in these cases it is of paramount importance to ensure free drainage from the sinus by removal of all chronic inflammatory growths from the lower end of the fronto-nasal canal. For this purpose the anterior half or more of the middle turbinal, all polypi, granulations, and diseased ethmoidal cells should be removed by means of curette, snare, or forceps. I have no hesitation in saying that many of the failures in the radical operation have been due to the fact that the external operation has been undertaken before free drainage and immunity from re-infection of the sinus have been secured by this important preliminary intra-nasal treatment.

When, however, this has been satisfactorily carried out the further treatment resolves itself into one of two measures: (1) intra-nasal irrigation of the sinus and (2) external radical operation.

1. *Intra-nasal irrigation.*—Little can be said in favour of this as a means of cure. In the first place it rarely succeeds, and what improvement has been noted in some case is probably due to the improved drainage provided by preliminary intra-nasal treatment. Bearing in mind that this irregular sinus is lined by a mucous membrane which has undergone polypoid degeneration and is freely secreting pus we can scarcely expect that irrigation twice or three times a week with a mild antiseptic lotion through a fine cannula will restore it to a normal condition. Furthermore, it is a treatment which can only be carried out by the surgeon himself except in very exceptional cases. I have given the method a fair and prolonged trial in four cases but without any permanent result except in one case (Case 5). The solutions used were boric lotion, hydrogen peroxide, iodoform emulsion, carbolic lotion (1 in 60), and antiseptic alkaline lotions.

*A warning.*—More than one surgeon has advocated boring into the sinus from the nose. It cannot be too emphatically stated that this method is unjustifiable, bristles with dangers, and has already been responsible for more than one death from meningitis following shortly after the performance of the operation. A glance at the varying anatomy of the region should be sufficient to warn any surgeon of the unwarrantable risks which such a procedure entails. Recently Spiess (Frankfurt) has revived the operation, the manipulation of instruments being carried out under the kindly guidance of the Roentgen rays. To the writer, however, the method seems to add needless difficulties and encumbrances to an unsurgical and unscientific operation which ought not under any circumstances to be contemplated.

2. *External radical operation.*—This involves removal of more or less of the anterior bony wall of the sinus, of its diseased contents, and the provision of free drainage into the nose.

The patient having been anæsthetised, the eyebrow shaved, the skin cleansed, and the posterior choana plugged with a sponge (*vide* Case 1) an incision is made commencing just above the internal palpebral ligament curving upwards and outwards just below the line of the eyebrow to about the junction of the middle and outer thirds of the supra-orbital ridge. The soft parts and periosteum are retracted in the length of the wound and a small disc of bone is removed from the anterior wall of the sinus by means of a chisel and mallet or a quarter-inch trephine. Pus generally exudes at once through the opening as also does the polypoid degenerated mucous membrane. A bent probe is now passed through the opening in the bone to gauge the extent and limits of the sinus. If the cavity is small, and more so if the patient is a male, the surgeon may proceed to remove all the anterior wall so that at the end of the operation the soft parts fall in against the posterior wall and obliterate the sinus. If the sinus is a large one only a portion of the anterior wall should be removed. In this part of the operation care should be taken not to injure the pulley of the superior oblique muscle, which often comes into view. The diseased mucous membrane is next carefully curetted away down to the periosteum and all crevices or extensions of the sinus are searched out with a small curette or sharp spoon. Somewhat free venous hæmorrhage occurs during this part of the operation, but pressure applied by means of small wool sponges soon checks it. The next step is to make a free opening into the nose which can be safely done by means of curved burrs of progressive sizes[3] or with a suitable curette. In this way suppurating anterior ethmoidal cells are destroyed. The communication between the sinus and the nose should at least be capable of admitting an ordinary lead-pencil, because the success of the operation almost entirely depends upon securing free drainage into the nose. It need scarcely be said that great care should be taken in using instruments in these upper ethmoidal regions. The surgeon will find that access to the upper end of the fronto-nasal canal within the sinus is more easily attained if he removes a small portion of the anterior sinus wall situated just above the junction of the frontal and nasal bones (Fig. 1c). This same diagram represents the relative amount of anterior wall which should be removed in order to deal efficiently with a sinus of ordinary dimensions as indicated by the dotted lines. Having thoroughly curetted and dried the sinus it may be swabbed out with zinc chloride 40 grains to one ounce or pure carbolic acid and then packed with a strip of antiseptic gauze. The soft parts are stitched up at once except at the lower angle of the wound through which the end of the gauze projects. In the course of three or four days (if in the meantime the temperature is normal and the wound looks well) about three inches of gauze may be withdrawn and cut off, the process being repeated every third or fourth day until all the gauze is removed and the cavity is lined by healthy granulation tissue when the external wound may be allowed to close.

In three cases I have inserted a small drainage-tube which projects from the inner angle of the external wound (which is stitched up as in the first method) and passes through the nose and out of the external naris. A hole is made in the side of the tube which lies in the sinus so that the latter may be daily irrigated and free drainage provided. The tube can be substituted after the lapse of about ten days for a U-shaped piece of silver wire bent somewhat like a tracheotomy tube so that it keeps open the fronto-nasal canal and can be daily removed for irrigation. Excellent results followed this method, the patients being free from discharge within one month of the operation.

It is unfortunately true that some seven or eight fatal cases of septic osteomyelitis have been recorded after the operation and apparently due to its performance, but it is only fair to say that these have occurred during the evolution of the operation as above described and in all cases they have been due to the fact that free drainage into the nose has not been ensured at the time of the operation, the external wound has been tightly sewn up, and with recurring suppuration the septic matter has been forced into the recently opened diploë of the frontal bone with ultimately fatal results.

In those instances where the antrum also contains pus an alveolar drain should be inserted and the antrum irrigated thoroughly for a few days before the radical operation on the higher sinus is undertaken. If, after the cure of suppuration from the frontal sinus the discharge from the antrum continues in spite of irrigation it may be necessary to explore that cavity in a somewhat similar manner to that described for the upper sinus, and it will often be found to contain a diseased mucous membrane which must be curetted away and the cavity packed or irrigated daily until its lining membrane is healthy.

[3] Made by Meyer and Meltzer, 71, Great Portland-street.

*Complications.*—Apart from septic inflammation of the frontal bone which ought not to occur, other complications are few and of small importance. It is well, however, to warn the patient beforehand of the possibility of loss of sensation in the skin over the forehead owing to division of the supra-orbital nerve. Temporary diplopia is not uncommon owing to disturbance of or inflammatory exudation around the pulley of the superior oblique muscle. It does not, as a rule, last for more than a week or ten days.

A study of the results attained in the appended list of cases will show that efficient intra-nasal treatment alone will completely relieve headache and nasal obstruction, while in most instances the purulent discharged is diminished. The question therefore arises: "What should determine the surgeon in advising the external radical operation?" The answer will, I think, mainly depend upon the temperament and idiosyncrasies of the patient. Intra-nasal treatment, as in Case 6, may so benefit the patient that he or she may find no inconvenience from a small amount of pus which necessitates the use of only one handkerchief a day, a condition of improvement which the individual referred to speaks of as "cure," although there is a slight discharge of pus from each sinus. Neither can the surgeon regard the improved condition as one calling for immediate radical intervention, much as his surgical instinct may prompt him to regard inimically any pus-producing focus within the body. On the other hand, some patients are particularly sensitive to the presence of any abnormal nasal secretion, and however slight it may be they desire to be entirely rid of the same. Under such circumstances and again where the patient contemplates going abroad or to regions where an occasional skilled examination of the nasal cavities is not obtainable we may advise the external radical operation.

Concerning this procedure it may be said that if due regard is paid to the anatomy of the regions involved and care is taken in carrying out the details already indicated, it is an operation almost free from danger, leaving remarkably little scarring or disfigurement even after extensive removal of bone, and yielding results gratifying alike to both patient and surgeon.

*Note.*—Since the above article was written I have operated upon three more cases of frontal sinus empyema, the last of which I successfully skin-grafted by Thiersch's method, and the progress of this case leads me to think that this method will give ideal results and greatly minimise the time during which the patient is under treatment.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### CASE OF PANCREATIC DIABETES DUE TO CALCULI.

BY E. WILLMER PHILLIPS, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient was a naval pensioner, fifty years of age, and was first seen by me on the evening of Oct. 29th. He was then complaining (1) of passing a little blood per rectum when defecating; (2) a discharge in the interval which stained his shirt; and (3) of great weakness and wasting; he had lost in weight one stone in twelve months. He was a dark, tall, thin man and, except for absence of anæmia, looked as though suffering from malignant disease. There were no abnormal physical signs in his chest and nothing unusual was felt in the abdomen or per rectum. Sometimes he felt restless but lately he had been very drowsy. He had no thirst or polyuria. His tongue was clean and there was no perceptible odour in his breath. His bowels were open twice daily, the motions being very offensive. His pulse was 54 per minute. His urine was of specific gravity 1024; sugar was present, but there was no albumin. On Nov. 1st he passed five pints in 36 hours. On Nov. 3rd analysis showed 8·7 parts of sugar per 1000; no acetone, diacetic, or $\beta$-butyric acid was present. I noticed that the stain on his shirt looked greasy (or, as his wife expressed it, "as though vaseline had been smeared over it," and she had great difficulty in washing it out). Upon inquiry she said that the motions were greasy and those I examined were mottled-grey, greasy-looking, and peculiarly offensive; once or twice there was solid fatty material upon cooling.

There were occasional slight pain in the pancreatic region and tenderness upon deep pressure, but nothing could be felt. The optic discs were very white and the man had had temporary amaurosis some time previously. At first he improved slightly upon careful diet, aperients, and pancreatic tabloids, and the extreme drowsiness passed off, but at the end of a month he would eat just what he liked with consequent drowsiness and weakness; one night he became excited and light-headed after a diet of milk, ginger-beer, brandy, sardines, and liver. After these bouts he would starve for a few days and improve, but on the whole the course was one of progressive weakness, aggravated for three weeks by severe hæmorrhage from prolapsed piles. The specific gravity of the urine varied from 1010 to 1032; that passed in the day contained sugar (12·500 per 1000 in May), but that passed at night did not. There was slight peripheral neuritis in the hands and legs. The lung broke down in May and he gradually died from exhaustion on June 14th. There was never any jaundice. I afterwards heard that he had suffered from frequent severe attacks of colic and vomiting for which he was invalided from the navy 20 years ago. Only a partial necropsy was allowed. The liver and kidneys were apparently healthy. The pancreas was hard and its duct was filled with calculi and calcareous matter. The largest mass was situated in the head of the pancreas and was tubular in shape; the next largest was at the splenic end; a third could be felt in the posterior part of the head; the entrance of every branch duct was plugged with concretions. No communication could be found between the pancreatic and common duct or with the duodenum. The substance of the gland was hard but it was not enlarged. It was examined by the Clinical Research Association and the report was as follows: "The pancreas shows great increase of fibrous tissue in parts with atrophy of acini and glandular tubules. A section of moderately large duct shows much shed epithelium from catarrh." The colours of the calculi and débris were chiefly yellowish white and dark grey mixed.

*Remarks.*—It was evident upon examining the urine and motions that there was obstructive disease of the pancreas, but cases of pancreatic calculi are sufficiently uncommon to merit record. The chief points of interest in this case are first the misleading symptoms for which he sought advice (hæmorrhage and discharge per rectum), and secondly the history of previous severe colic. In a case recorded by Minnich the symptoms of colic, intermittent glycosuria, and fatty motions led to the discovery of pancreatic calculi in the fæces. The peculiar odour of the motions seems to be almost pathognomonic of pancreatic disease; the great prostration and wasting also are more pronounced than in ordinary diabetes.

Southsea.

### IMPACTION OF A BEAN WITHIN THE AIR PASSAGES; TRACHEOTOMY; EXPULSION THROUGH THE WOUND; RECOVERY.

BY BRUCE HAMILTON, M.R.C.S. ENG., L.R.C.P. LOND.

THE following case presents features of special interest. A boy, aged 12 years, was playing with dried haricot beans when his elbow was accidentally jerked upwards with the result that a bean which he had been holding in his hand was shot into his mouth; fits of coughing and retching at once commenced.

I saw him within 10 minutes of the occurrence of the accident—viz., at 8.30 P.M. He was complaining of great difficulty in breathing and indicated the supra-sternal notch as the spot where obstruction was most felt. There was no evident laryngeal stridor and the character of the voice may be described best as "ventriloquial." He made many ineffectual attempts to relieve his embarrassment by cramming his fingers down his throat, an act that induced noisy vomiting but failed to give him relief. On examination of the chest no air was found to enter the right lung; the left lung was working naturally. No foreign body was seen in the larynx or trachea. Now and again he coughed up blood-stained mucus. It being

then practically certain that the right bronchus was blocked efforts were made to dislodge the foreign substance. Thumping the back, inversion, violent emesis induced by ipecacuanha wine, alike proved ineffectual, and the boy becoming sleepy he went to bed and slept placidly and uninterruptedly till morning.

Early the following day (12 hours after the accident) a fit of coughing occurred and similar attacks followed at diminishing intervals until at last a continuous struggle for breath terminated with unconsciousness and convulsions. The trachea was opened with one cut of the knife as the patient lay upon the floor where he had fallen, and at once restoration was partially re-established and consciousness returned, but it was not until the incision had been enlarged in a downward direction that a bean, greatly swollen, softened, and ruptured, was expelled through the wound with considerable force. The period of time that elapsed between the first cough in the morning and the onset of convulsions was about 20 minutes. The subsequent history of the case was uneventful.

The right and proper treatment in a case such as that which has been related is immediate tracheotomy, thus obviating the possibility of sudden death from laryngeal spasm should the foreign body become dislodged and be driven upwards; but it is by no means an easy matter to convince the friends of the imperativeness for surgical interference when they see the patient sleeping calmly. In the case in point, though probably there was present some degree of laryngo spasm at the time of operating, as evidenced by the partial restoration of respiration that at once took place after the trachea had been incised, I believe that the spasm was chiefly due to a participation of the adductores vocales in the general convulsive fit consequent upon hypervenosity of the blood rather than to reflex spasm brought about by peripheral irritation of the tracheal nerve-endings. Profuse hæmorrhage followed incision of the skin and may have been a factor in relieving spasm. The reason that asphyxia came on so precipitately towards the last may be partly explained by the nature of the foreign body. The testa would take time to soften and until that had been accomplished no great general increase in size could take place; but once the substance of the cotyledons began to absorb moisture a vast and relatively sudden expansion would occur, and any check upon expansion, such as the walls of the bronchus would have been likely to have exercised, would terminate with the dislocation of the foreign body into the wider lumen of the trachea.

Hampstead, N.W.

## A CASE OF ADDISON'S DISEASE; TREATMENT WITH SUPRARENAL EXTRACT; DEATH.

BY EDGAR G. TREVITHICK, M.D. CANTAB.,
PHYSICIAN TO THE CHELTENHAM HOSPITAL.

IN this instance the symptoms of Addison's disease supervened in a man who exhibited in several organs signs of old, but thoroughly and long since arrested, tuberculosis. The bronzing of the skin was observed by the patient's friends two months before his death and became rapidly intensified along with increasing asthenia, chilliness, and gastro-intestinal irritability. Treatment with suprarenal extract was apparently without any avail, but it is only fair to say that this treatment was not instituted until very late in the course of the illness. The following notes give an outline of the case.

The patient was a man, aged 40 years, with a strong family history of tuberculosis. His present illness had begun two months before with darkening of the complexion accompanied or followed by feebleness and nausea. On admission to the Cheltenham General Hospital there was extreme pigmentation of the skin. The scrotum and penis were absolutely black. The face and hands were of a dark brown colour. The skin over the trunk was much pigmented. The legs and the feet were only slightly discoloured. There was some pigmentation on the dorsum of the tongue. The pulse was 66. The temperature was entirely subnormal. The knee-jerks were present. The urine was normal. There was considerable distortion of the spinal column, dating from an attack of spinal caries when 23 years of age. The symptoms most complained of were vomiting, great weakness, and chilliness. Suprarenal extract was administered twice a day without any good effect. Small doses of liquor morphiæ alone appeared of service in checking the vomiting. On the tenth day after admission the temperature, which for several days had never been higher than 97·4° F., suddenly rose to 101°; and with it the pulse-rate, which had averaged 55, increased from 50 to 100. No actual rigor was noticed. But two mornings afterwards the temperature had again fallen to subnormal and the patient was once more complaining much of chilliness. The nurse in charge administered a little stimulant and leaving the bedside was surprised and shocked to find on returning 10 minutes later that death had occurred.

*Necropsy.*—Signs of old arrested tuberculous disease in the spinal column were found. There were small obsolete strongly encapsuled tuberculous deposits here and there in both lungs and in the bronchial glands. There were no signs of active or even recent tuberculosis in any organ. There was very great displacement of organs due to spinal curvature. The right suprarenal capsule firmly adherent to the under surface of the liver was represented by an olive-shaped mass of dense fibrous tissue. The left capsule was adherent to the tail of the pancreas; it was normal in shape but with its proper substance entirely replaced by fibrous tissue containing several small caseous centres. Owing to spinal curvature the kidneys had fallen away considerably from their normal position and were no longer any guide to the situation of the suprarenals. There was much chronic thickening of the peritoneal and subperitoneal tissue in the neighbourhood of the distorted spinal column and the suprarenals lay in the midst of this sclerosed area. The spleen was diffluent. The liver was very soft and fatty. The heart walls were very thin and soft and rotten.

Cheltenham.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriae collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.**

## WESTMINSTER HOSPITAL.

### THREE CASES OF PHTHISIS TREATED WITH "TUBERCULIN R."

(Under the care of Dr. W. MURRELL.)

IT is even more important to publish unsuccessful cases than to record those in which improvement has resulted, and especially is this so in connexion with new methods of treatment. Ten years have elapsed since the introduction of Koch's tuberculin, and yet it has not attained to a recognised position in the therapeutics of pulmonary phthisis. It appears to be of very little use in mixed infections or in advanced cases, and the striking beneficial results detailed by Professor Mc Call Anderson in his lecture[1] are certainly exceptional. Professor Anderson gives his patients large doses of cod-liver oil (three ounces a day), and this may account in part for the difference. The reaction produced by Koch's original tuberculin was certainly of some diagnostic value, but with the new tuberculin there is very slight reaction and therefore its use in diagnosis is less.

CASE 1.—An old soldier, aged 41 years, was admitted to Westminster Hospital on August 31st, 1898, suffering from phthisis. He had been ill for three years and during the greater part of that time had been under treatment. His symptoms were cough with muco-purulent expectoration containing tubercle bacilli in abundance, progressive loss of flesh, and night-sweats. His physical signs were deficient movement and dulness over the whole of the right side, with high-pitched breath-sounds accompanied by crepitant rales. Posteriorly there was dulness at the right base up to the angle

[1] THE LANCET of June 16th, page 1703.

of the scapula with feeble breath-sounds and a few soft râles. In the supra-spinous fossa there was cavernous breathing with whispering pectoriloquy. There was no indication of mischief on the left side. The patient had tuberculous disease of the spine in a progressive condition, for which he was wearing a poroplastic jacket. His urine contained a trace of albumin, but no casts were found. His temperature during the first five days was 100° F. at night, but on the following three days was only once above 99°. The "Tuberculin R" treatment was commenced on Sept. 9th. The patient was kept in bed, strict antiseptic precautions were observed, and the temperature was taken every four hours night and day. The following is a list of the injections given:—

| No. | Date. | Dose. | Reaction. |
|---|---|---|---|
| 1 | Sept. 9 | $\frac{1}{500}$ mg. in 5 c.c. | 99·0° to 100·8° F. |
| 2 | ,, 12 | $\frac{1}{250}$ mg. in 5 c.c. | None. |
| 3 | ,, 15 | $\frac{1}{500}$ mg. in 2 c.c. | 98·0° to 100·0° in 7½ hours. |
| 4 | ,, 16 | $\frac{1}{125}$ mg. in 4 c.c. | None. |
| 5 | ,, 19 | $\frac{1}{250}$ mg. in 5 c.c. | None. |
| 6 | ,, 22 | $\frac{1}{5}$ mg. in 2 c.c. | 98·0° to 99·8° in 8 hours. |
| 7 | ,, 27 | 1 mg. in 1 c.c. | 98·6° to 100·2°. |
| 8 | ,, 30 | 2 mg. in 2 c.c. | 99·0° to 101·2° in 20 hours. |
| 9 | Oct. 4 | 3 mg. in 3 c.c. | 99·2° to 101·8° in 12 hours. |
| 10 | ,, 6 | 3 mg. in 3 c.c. | 99·0° to 101·6° in 24 hours. |
| 11 | ,, 7 | 3 mg. in 3 c.c. | 99·4° to 101 4° in 16 hours. |
| 12 | ,, 13 | 3½ mg. in 3½ c.c. | 99 2° to 100·4° in 20 hours. |
| 13 | ,, 18 | 4 mg. in 4 c.c. | 99·2° to 101 0° in 12 hours. |
| 14 | ,, 19 | 4 mg. in 4 c.c. | 100·4° to 101 6° in 8 hours. |
| 15 | ,, 22 | 4 mg. in 4 c.c. | 98·0° to 101·8° in 24 hours. |
| 16 | ,, 28 | 3 mg. in 3 c.c. | 98·0° to 100·0°. |
| 17 | Nov. 10 | 4 mg. in 4 c.c. | 99·0° to 100·8°. |
| 18 | ,, 18 | 4 mg. in 4 c.c. | 98·0° to 99·6°. |
| 19 | ,, 27 | 5 mg. in 5 c.c. | 98·0° to 102·4°. |
| 20 | Dec. 1 | 2 mg. in 2 c.c. | None. |

From this table it will be seen that in 12 weeks the patient had 20 injections in doses ranging from $\frac{1}{500}$th of a milligramme to five milligrammes. A detailed examination of the condition of the chest was made every week and there was no improvement in the physical signs, but, on the contrary, there was some extension of the mischief at the right apex. The tubercle bacilli were still found in abundance in the expectoration. The general symptoms showed no amelioration and for a considerable period the patient suffered from profuse night-sweats. The only hopeful sign was that the appetite was maintained and that the patient did not lose flesh. He was discharged on Dec. 10th.

CASE 2.—A man, aged 35 years, was admitted to Westminster Hospital on August 5th, 1898. He was in the hospital for pleurisy with effusion on the right side in 1896. He remained well until Christmas, 1897, when he caught a bad cold and since then his cough had never left him. He had night-sweating and there was considerable loss of flesh. On admission the physical signs were impairment of movement at the right apex, dulness on percussion, bronchial breathing in the first and second intercostal spaces, accompanied by moist râles. Moist râles were also heard at the right back up to the angle of the scapula. On the left side there was dulness at the base with moist sounds. Tubercle bacilli were found in abundance in the expectoration. The temperature for four weeks after admission, during which he had only symptomatic treatment, usually reached 103° F. in the evening. On Sept 12th he was given a hypodermic injection of $\frac{1}{500}$th of a milligramme of "tuberculin R" which produced no reaction. On the 14th the dose was repeated without effect and on the 16th it was increased to $\frac{1}{250}$th of a milligramme. On the 22nd at 8 A.M., when the temperature happened to be only 97·0°, he was given $\frac{1}{200}$th of a milligramme and the temperature rose to 99·8°, but whether as the result of the injection it was impossible to determine. On the 27th he was given one milligramme and on the 31st two milligrammes, and again without any positive influence on the temperature. There was no improvement in the physical signs and on Oct. 2nd he took his discharge, his condition being no better than on admission. He died three weeks after leaving the hospital and no post-mortem examination was obtained.

CASE 3.—A man, aged 45 years, was admitted to Westminster Hospital on August 21st, 1897. He stated that he had had a cough since February, 1896, the cough being constant and accompanied by much expectoration. He had a bad attack of hæmoptysis five months before and since then had frequently spat blood, the last time being about a month before admission. He had been steadily losing flesh for over a year, but had not suffered from night-sweats. There was flattening with diminished movement at the right apex in front and the percussion note over the whole of the right side was impaired. At the right apex the breath-sounds were weak and were accompanied by numerous fine râles. In the outer half of the first two intercostal spaces whispering pectoriloquy was obtained. The temperature during the first week usually reached 102° F. in the evening. On August 29th at 11.55 A.M., the temperature being 98°, he was given a hypodermic injection of $\frac{1}{100}$th of a milligramme of tuberculin R. At noon the temperature was 98·8°, and at 1 P.M. 99·6°. It then fell again and at 3 P.M. was 98°. On Sept. 1st at 1.45 P.M. he was given an injection of $\frac{1}{200}$th of a milligramme and at 6 P.M. his temperature was 101·6°. On the 3rd at 9.30 A.M., the temperature being 100°, he was given an injection of $\frac{1}{125}$th of a milligramme and at 10 A.M. the temperature was 101·8°, after which it gradually fell. On the 9th at 6.15 P.M., the temperature being 100°, the patient was given a hypodermic injection of $\frac{1}{33}$rd of a milligramme. At 6.30 the temperature was 101° and at 7 it was 101·8°, after which it gradually fell. The patient was given in all six injections, the maximum being $\frac{1}{30}$th of a milligramme, but there was no improvement either in the symptoms or in the physical signs. His appetite failed to improve, and as he was rapidly losing flesh he was sent home.

*Remarks by* Dr. MURRELL.—My experience of the treatment of phthisis with tuberculin R has been so limited compared with that of Professor McCall Anderson that it is with some hesitation that I venture to call attention to these cases. My experience would probably have been larger had the results been more favourable. It may be that if cases were carefully selected and only patients in a very early stage treated by this method better results would be secured. Possibly, too, the number of injections was too small, for I believe that in a successful case published by Professor McCall Anderson 47 injections were given in four months. The maximum dose of the new tuberculin is said to be 20 milligrammes, but that is a very large quantity and I have not ventured beyond five milligrammes. The irritation produced at the seat of infection is often a source of trouble and inconvenience to the patient. The expense is a serious consideration and in hospital practice a physician hesitates to recommend his house committee to sanction the employment of a remedy which runs up to 17*s.* a dose. I endeavoured to get it made in England on more reasonable terms, but was told that although the formula was published the exact details were not known. I have no wish to speak unfavourably of tuberculin R and my limited experience would not justify me in doing so, but I am positive that in these particular cases I could have obtained far better results with the formic aldehyde treatment, the details of which I have already published.

## MORPETH COTTAGE HOSPITAL.

### A CASE OF FRACTURE OF THE LEFT SIDE OF THE SKULL WITH COMPLETE RIGHT HEMIPLEGIA; OPERATION; RECOVERY.

(Under the care of Dr. E. F. L. DE JERSEY.)

IN all cases of depressed fracture of the skull, except in those in young children, it is now the accepted treatment to trephine at once, even in the absence of symptoms and even if the fracture be unaccompanied by a lesion of the scalp. In the following case the coma and the right sided hemiplegia pointed clearly to the lesion on the left motor area, and the fact that pressure over the fracture produced spasm of the right side of the body confirmed the diagnosis. The harmlessness and the value of modern treatment of even extensive fractures of the skull could not be better illustrated than in the case recorded below.

A man, aged 45 years, was admitted into the Morpeth Cottage Hospital on Feb. 22nd, 1900, having been struck on the left side of the head on the 17th with a pole six feet in length and from six to nine inches in diameter. There was complete unconsciousness with right-sided hemiplegia and retention of urine and fæces. The temperature was 102° F. On the day before the patient's admission into the hospital (Feb. 21st) slight crepitation was detected over the left parietal bone at about its centre. There was no external wound or discolouration over the site of the injury, only slight

pitting on pressure. There was slight effusion of blood a little above and in front of the left ear. There were also two black eyes produced by fist-blows. On firm pressure over the site of the fracture spasm of the whole right side of the face and body was produced.

An operation was performed at 3.30 P.M. on Feb. 22nd. An incision was made from a point one inch above the left frontal eminence of the frontal bone and three and three-quarter inches above the left external canthus down to a point half an inch above the lower border of the left parietal bone and two and a half inches above the left external auditory meatus up to a point a little above and behind the left parietal eminence four and a half inches above the left mastoid process and five and a half inches from the starting-point. On raising the flap thus formed an extensive stellate, depressed, fissured, and comminuted fracture was found, the stellate and comminuted portion being situated immediately in front of the left parietal eminence. On raising the depressed and comminuted fragments both the internal and external tables of bone were found to be involved, fragments of bone projecting in all directions into the brain substance, tearing to shreds the dura mater, the arachnoid, and the pia mater lying over the convolutions of the brain. After the removal of the fragments of bone an area of brain two and a half inches by three-quarters of an inch was exposed. From the anterior border of this area in the bone was a fissure extending downwards and forwards into the frontal bone towards the outer border of the left orbit; another fissure extended from the posterior part through the remaining portion of the parietal bone into the occipital bone. This latter fissure was much wider than the anterior one, it being about a quarter of an inch in breadth. Beneath the stellate and comminuted fracture was a large hæmatoma, which was left undisturbed. At a point four inches at right-angles to Reid's line and two inches behind the exterior auditory meatus, being at a point a little posterior to the left parietal eminence, was a cavity extending right into the substance of the brain large enough to admit the little finger quite easily. This cavity corresponded to the upper end of the left Rolandic fissure, thereby involving the upper ends of the left ascending frontal and parietal convolutions, the latter chiefly. This cavity, no doubt, was produced by the injury, but degenerative changes had already set in, as the brain matter round the orifice was quite pulpy and friable. The fracture covered most of the motor area, there being complete right-sided hemiplegia and motor aphasia, showing that the left inferior frontal convolution must have been damaged as well as the parietal convolutions. Some of the difficulty in speech was due to paralysis of the tongue, but after the latter had passed away there was considerable aphasia left. The patient stated when he got the use of his tongue that he could hear everything which was said to him and wished to answer but he could not get his words out. Part of the whole thickness of the parietal bone was replaced, a gauze plug was inserted into the cavity in the brain and brought out under the flap, which was sutured, and a dry dressing was put on. The plug was removed on March 3rd and the wound healed without suppuration.

Before operation the pulse was 40, the breathing was very quiet, almost inaudible, and deep coma was setting in. At 9 P.M. on the evening of the operation the patient was still unconscious but he raised his right leg every now and again. The pulse was quicker and the breathing was stronger. The temperature was 97·5°. He had taken nourishment, and this he had not done before since the injury. He was very restless and kept on raising himself from the pillow. Shoulder bands were put on which kept him still, they being tied to the head of the bed. On Feb. 23rd (the day following the operation) the patient had had a pretty good night though he had been very restless at times. He had said the word "No" and had made signs for a drink. The urine and fæces were passed involuntarily. The temperature was 98·2°.

From the operation the patient steadily improved and never once did the temperature rise above the normal. On Feb. 24th the right arm could be raised slightly. On the 25th the right arm could be moved freely and consciousness was returning. On the 28th the patient tried hard to speak but could not get the words out. He opened his mouth when asked to do so and said small words like "Yes" and "No," but usually he used the latter to questions which were put to him. Consciousness had almost completely returned. On March 7th the patient put out his tongue for the first time. It deviated much to the right. He carried on a little disconnected conversation, there being much motor aphasia. He started taking light solids on this day. On the 12th he gave a statement to the police as to the cause of his injury quite rationally, but with difficulty at times owing to the aphasia. He said that he had a bad memory and could not remember names so well as he could before the injury. On the 16th the patient got up. On April 2nd he walked about the ward quite well and was able to carry on a conversation with very little difficulty. The paralysis had completely disappeared, but there was slight weakness of the right side, specially noticeable by the clench of the two hands. On the 10th the patient was dismissed from the hospital.

*Remarks by* Dr. DE JERSEY.—The order in which the paralysis disappeared was very prominent. Almost directly after the pressure over the motor area had been relieved movement of the paralysed side returned, starting with the leg, then followed by the upper extremity, the face, and lastly by the tongue. The shoulder movements returned before those of the elbow, and those of the elbow before those of the hand—viz., the finer movements. The upper face being only slightly affected returned to its normal state long before the lower face. The return of the paralysed side to normal brought out very well the fact that the parts which rarely act independently of their fellows on the opposite side are the parts that are usually the least paralysed and consequently are the parts that recover the most quickly.

Before the operation there was retention of urine; after operation there was retention with at times incontinence, the bladder being frequently found above the pubes. The urine was drawn off for five days and the bladder was washed out with a weak solution of boric acid, as there was slight cystitis. Fæces were passed involuntarily for two or three days after the operation; after that there was constipation.

The interesting points in the case are the rapid recovery after the pressure on the brain had been relieved, the signs of relieved pressure appearing before those of shock began to pass off, and consciousness returning comparatively late.

The cavity found at the top of the motor area seemingly has left no bad effects, as also the gaping fissures in the bone extending into the frontal and occipital areas respectively. The fissures were left as approximation of the two sides could not be obtained, although seemingly all wedges of bone likely to cause the gaping were removed. It was thought unwise to make further flaps to discover actually how far these fissures extended, as in all probability no harm would be done by leaving them. This was the case. Another interesting point is the fact that a piece of bone, including both the external and internal table, completely deprived of its periosteum, was replaced and has become firmly adherent to the adjacent bone. Its size was nearly half an inch square.

# Medical Societies.

## OBSTETRICAL SOCIETY OF LONDON.

*Porro-Cæsarean Hysterectomy with Retro-peritoneal Treatment of the Stump in a Case of Fibroids Obstructing Labour, with Remarks upon the Relative Advantages of the "Modern Porro" Operation over the Sänger-Cæsarean in most other Cases requiring Abdominal Section.*

A MEETING of this society was held on July 5th at 20, Hanover-square, W., Mr. ALBAN DORAN, the President, being in the chair.

Dr. AMAND ROUTH read a paper on Porro-Cæsarean Hysterectomy with Retro-peritoneal Treatment of the Stump in a Case of Fibroids Obstructing Labour, with Remarks upon the Relative Advantages of the "Modern Porro" Operation over the Sänger-Cæsarean in most other Cases requiring Abdominal Section. When the patient was first seen the pelvis was occupied by a large fibroid and the cervix uteri was out of reach above the symphysis. During the thirty-fourth week the pelvic fibroid was rather suddenly drawn up out of the true pelvis and it was hoped that parturition would be naturally performed. As it was found that the head was arrested just above the lower segment of the uterus by two opposing fibroids a Porro-Cæsarean operation was

performed in preference to a panhysterectomy or to Cæsarean section with removal of the appendages. *The operation.*—When the abdomen was opened in the middle line the left broad ligament came into view with the largest fibroid on its right. The incision into the uterus had therefore to be made posteriorly to the left broad ligament and was directly over the placental site. The placenta was stripped off, the membranes were incised, the child was extracted, the placenta and membranes were removed, and the uterus was brought out through the abdominal incision. The operation was then completed by Baer's method. Both mother and child had an uneventful recovery. It was a point worthy of discussion whether supra-vaginal amputation of the uterus (Porro's operation), with retro-peritoneal treatment of the stump, was not safer for the patient in skilled hands than a Sänger-Cæsarean section with sterilisation in all cases of *permanent* obstruction to labour requiring abdominal section, except, perhaps, those due to cancer of the supra-vaginal cervix. When it had been decided that a viable child had to be delivered from a living mother by abdominal section all cases would resolve themselves into three groups: (1) those where hysterectomy (Porro or panhysterectomy) with retention of one or both ovaries was absolutely indicated; (2) those where a Sänger-Cæsarean operation (with or without sterilisation) was absolutely indicated; and (3) those capable of being treated by either operation. It was agreed that a Porro (or panhysterectomy) was absolutely indicated in the following cases: obstructing fibroids, cicatricial stenosis of the vagina where the lochia could not escape, septic endometritis, decomposed fœtus (osteomalacia owing to the fact that removal of the appendages was often curative), uterine hæmorrhage from uterine inertia during Cæsarean section, and after much previous manipulation of the uterus in attempts to extract per vaginam. Sänger-Cæsarean section without sterilisation was, on the other hand, absolutely indicated, instead of a "Porro," where it was considered desirable for the woman to have a chance of another child, and Sänger-Cæsarean section with sterilisation was required (?) in cases of cervical cancer when the supra-vaginal cervix was involved. There only remained, therefore, a third group of cases where a Cæsarean section with sterilisation was usually done, but where it would, in Dr. Routh's opinion, be quite as reasonable to do a modern "Porro." This third group included all cases of sufficient pelvic contraction, and it was in such cases that the relative value of a modern "Porro" operation as compared with a sterilising Sänger-Cæsarean operation demanded serious consideration.

Dr. A. L. GALABIN preferred to call the operation performed by Dr. Routh a Baer-Cæsarean or simply a Cæsarean hysterectomy, as the original operation of Porro was hysterectomy with the uterine stump fixed in the abdominal wound instead of being covered by peritoneum and dropped into the abdomen, as Dr. Routh had done. He thought the best operation had been done and he had performed a Porro's operation in a similar case five years previously. He did not think that pregnancy added to the difficulties of such a hysterectomy, and was led by this experience to recommend it as the best operation when fibroids obstructed labour and also as an alternative to the ordinary Cæsarean section apart from fibroid tumours. In several other cases of pelvic fibroids complicating pregnancy he had found that the fibroids became elevated during the first stage of labour, and had enabled forceps to be used to complete delivery. He asked Dr. Routh whether there was much hæmorrhage before the ovarian and uterine arteries were tied and whether the elastic ligature was used.

Dr. WILLIAM DUNCAN approved of the details of the operation performed by Dr. Routh. He believed that abdominal hysterectomy with intra-peritoneal treatment of the stump was much less dangerous than any Cæsarean section except in cases of cancer of the cervix where he would prefer to treat the stump extra-peritoneally. He preferred to leave both ovaries instead of only one, as he had several times noticed that when one ovary was removed various unpleasant "menopause" symptoms supervened, although never so severely as when both ovaries had been removed.

Dr. PETER HORROCKS said he preferred to speak of Cæsarean section rather than of Sänger-Cæsarean because the evolution of asepsis had led many operators to abandon Sänger's main improvement, which was to sew the peritoneum completely over the deep sutures. Although he believed that Dr. Amand Routh had done quite the best thing in his case he did not think it was possible to formulate rigid rules for all cases, for it often happened that it was found best to do something quite different from what was intended before the operation was begun. Speaking generally, he preferred Cæsarean section to Porro's operation, sterilising the patient by snipping half an inch out of the middle of each Fallopian tube. This operation was, he considered, easier and safer for the patient. If possible, he always left both ovaries when performing hysterectomy, although he had never found that climacteric atrophic changes ensued if only one were left behind.

Dr. W. R. DAKIN believed that if one ovary were left behind after hysterectomy the effect was the same as if both were left. He agreed with Dr. Routh that the woman escaped certain risks if the uterus were removed instead of being merely sutured and the patient sterilised, and alluded especially to the risks of infection of the peritoneum through an imperfectly sutured wound and of adhesions between the uterine and abdominal wounds which might cause strangulation of the bowels. If the woman wished to have a family, all members of which were to be delivered through the abdominal wall, it was another matter. He had observed no greater shock after supra-vaginal hysterectomy in these cases than after an ordinary Cæsarean section, but agreed that it was wise not to decide how the operation was to be finished till the child was actually extracted from the incised uterus. He had recently operated with successful results to both mother and child where the true conjugate was only two and three-quarter inches. In a previous pregnancy labour had to be induced at the sixth month. The patient agreed to an abdominal operation but wished at the same time to be sterilised. At the operation, after extracting the child, he found the uterine vessels were standing out so clearly and were so easy to ligature that he decided it would be a much shorter procedure to remove the body of the uterus, treating the stump by the retro-peritoneal method, than to suture the uterine wound and to ligature and excise a part of each tube. He thought this would be the decision most often arrived at under similar circumstances.

Dr. HERBERT SPENCER agreed that the best operation had been done in this case and he had himself performed Porro's operation under similar circumstances eight years ago. While the intra-abdominal treatment of the stump shortened the convalescence and lessened the risk of hernia it did not always prevent septic peritonitis, by infection of the ligatures through the vagina (Klotz), nor the risk of adhesion of bowel to the seam causing intestinal obstruction, which had occurred in one of his own cases. He did not consider that Porro's operation should be done in all cases of permanent obstruction, such as contracted pelvis. He much preferred the conservative Cæsarean section. He would, however, have nothing to do with sterilisation by tying or cutting the tubes, which, besides exposing the patient to additional risks, was very unreliable in its effects and was at least debateable from the moral standpoint. The conservative Cæsarean section was a very successful one and left no stump for intestines to adhere to, the wound in the puerperal uterus lying up against, and becoming adherent to, the abdominal wall, so that in a subsequent operation the peritoneal cavity was sometimes not opened at all. He had recently performed Cæsarean section under local anæsthesia upon a patient whom he had delivered by Cæsarean section twice previously. As both the children thus delivered had subsequently died the advantage to the mother of having a third, and this time a very healthy, child was obvious. He had also successfully repeated Cæsarean section in another case.

Dr. COLLINGWOOD ANDREWS had had opportunities of comparing the progress of cases of hysterectomy during pregnancy where both the extra- and intra-peritoneal methods of treating the stump had been tried and greatly preferred the latter method.

Mr. A. C. BUTLER-SMYTHE thought that the operation performed by Dr. Routh was only possible in a hospital or where skilled assistance was obtainable. Wherever a Porro's operation was required, as in cases of fibroids, he considered the retro-peritoneal treatment of the stump far preferable to the old method, but he would leave the precise details of the operation to be decided when the abdomen was opened and the child extracted. That was also the time to consider whether the woman should be allowed to run the risk of another pregnancy.

Mr. J. H. TARGETT said he considered that a non-sterilising Cæsarean section was very rarely justifiable, while between a supra-vaginal hysterectomy and a Cæsarean section with sterilisation the balance would usually be in favour of hysterectomy, because it could be more rapidly performed and prevented the risk of hæmorrhage and subsequent sepsis. When the pregnancy was complicated with fibroids the advantages of supra-vaginal hysterectomy were obvious. As evidence of an additional risk in the after-history of cases where Cæsarean section without sterilisation had been done, he showed a specimen of a uterus which he had removed from a woman who had had Cæsarean section performed by him two years and a half previously for impacted shoulder presentation. When re-admitted she was in a state of collapse and when the abdomen was opened the child and placenta were found free in the peritoneal cavity, and there was a large rupture in the anterior uterine wall along the scar of the previous operation. The patient fortunately recovered.

The PRESIDENT believed that the retro-peritoneal operation was best provided that, as in the present case, the obstetrician had already performed it more than once on non-pregnant subjects and in hospital practice with plenty of assistants. Country practitioners with large midwifery practices but without experience of abdominal section have, as in a case within his own knowledge, had excellent results after the old Porro-Cæsarean operation, which was easy and could be done quickly. On that account Lepage performed the old operation in a hospital on a case of labour at term complicated by fibroids where there was free hæmorrhage, saving mother and child. Weiss and Schuhl reported the removal of the uterus in two cases of spontaneous rupture during labour occurring in a hospital. In one case the elastic ligature and pins were used and the patient recovered; in the second, which was lost, the retro-peritoneal operation was undertaken, but this case was septic. Panhysterectomy had the disadvantage of being yet lengthier than retro-peritoneal hysterectomy.

Dr. AMAND ROUTH, in his reply, agreed that the nomenclature was not altogether satisfactory, but thought that all cases of hysterectomy during late pregnancy (except panhysterectomy) were of the nature of a "Porro," the treatment of the stump being a detail capable of many renderings. He did not consider that the old "Porro" operation was suitable for cases of advanced cancer of the cervix owing to the great strain on the friable supra-vaginal cervix, which would almost certainly give way. He did not think it made any difference to the patient's after-history whether one or both ovaries were left. Most of the speakers had, with certain reservations, approved of his view that hysterectomy was in most cases preferable to Cæsarean section with sterilisation, and, as the President stated, if haste was essential the old "Porro" was indicated, otherwise the modern retro-peritoneal hysterectomy. Dr. Herbert Spencer's contention that wherever possible Cæsarean section without sterilisation should be performed, so as to allow another pregnancy to occur, was not in his opinion justifiable. The patient might at full term be far away from skilled assistance and would, moreover, run all the risks mentioned in his paper both during the puerperium and subsequently. The adhesions which Dr. Spencer stated occurred between the uterine and abdominal incisions constituted one of the dangers and involved the risk of intestinal obstruction. He preferred catgut to silk for suturing the muscle of the stump, owing to its quicker absorption, which therefore caused a smaller chance of subsequent infection. He had not found the elastic ligature necessary but had quickly tied or clamped the uterine vessels.

*The following specimens were shown:—*

*Dr. G. F. BLACKER*: Frozen Sections of an Early (ten weeks) Pregnant Uterus.

*Dr. PETER HORROCKS*: A Pregnant Uterus with Fibroids removed at the fifth month by Abdominal Hysterectomy.

*Mr. J. H. TARGETT*: A Pregnant Uterus Ruptured at Full Term through the Scar of a Previous Cæsarean Section removed by Abdominal Hysterectomy.

*Dr. AMAND ROUTH*: A Pregnant Uterus with Fibroids removed at Full Term by Abdominal Hysterectomy.

*Dr. WILLIAM DUNCAN*: Multiple Myxomatous Polypi from the Cervix Uteri.

## OPHTHALMOLOGICAL SOCIETY.

*"Holes" at the Macula.—Optic Nerve Tumour.—Pseudo-Glioma.—Alveolar Carcinoma of the Eyelid.—Exhibition of Cases and Specimens.*

AN ordinary meeting of this society was held on July 6th, Mr. G. ANDERSON CRITCHETT, the President, being in the chair.

Dr. F. M. OGILVIE read a paper on one of the results of Concussion Injuries of the Eye—"Holes" at the Macula. He had collected all the published cases presenting this lesion and he divided them into two large classes: (*a*) those in which there was no detachment of the retina, and (*b*) those in which detachment was present. He showed lantern slides of the appearance of the fundus in all these cases which invariably followed concussion injuries, such as blows from blunt objects, from stones thrown from catapults, and one most interesting case he had previously shown to the society in which the injury was due to a bullet which apparently hit the back of the eye in passing through the back of the orbit. He advanced several theories to account for the holes which, as a rule, were about one and a half dioptres in depth. He summarised the conditions brought about as follows: (1) the lesions were definite and central; (2) they were the direct result of violence; (3) the injury was permanent; (4) the general disturbance of vision was not great; and (5) it was the result of concussion injury only.—Mr. ADAMS FROST endorsed all that Dr. Ogilvie had said regarding the appearance of the lesion, and in view of the fact that no case had as yet been examined pathologically he suggested that possibly a similar condition might be brought about by a like injury in the eyes of animals or in eyes recently excised.

Mr. C. DEVEREUX MARSHALL read further notes of a case of Optic Nerve Tumour previously reported to the society in November, 1899. The patient was a woman, aged 46 years, upon whom he operated at the request of Dr. Poulett Wells on Nov. 30th, 1897, when the contents of the orbit were thoroughly removed. She remained in very fair health until shortly before her death, which took place on May 4th, 1900 (two and a half years later). Owing to the kindness of Mr. Austin Reynolds who attended her up to the time of her death, which occurred very suddenly, Mr. Devereux Marshall was enabled to obtain a post-mortem examination. The necropsy was made on May 6th and the following was the condition found. On removing the calvaria the middle meningeal vessels were found to be distended and the Pacchionian bodies were very large. The cerebral convolutions were very much flattened. The optic chiasma had entirely disappeared and its place was occupied by a large diffuse and very soft tumour of about the size of a bantam's egg. So soft was it that its actual limits could not be defined, and the greater part of it could easily have been washed away with a moderately strong stream of water. The centre of the growth was the right optic tract and it spread along the chiasma, involving the optic tract and optic nerve on the left side, both of which were considerably enlarged. The tumour reached the pons on both sides, invaded the lateral and third ventricles, and on the left side the optic thalamus and corpus striatum. The growth was so very diffuse that it appeared that the third, fourth, fifth, and sixth nerves on both sides were more or less included in it. On both sides the under surfaces of the temporo-sphenoidal lobes were invaded. The tumour was still further broken down by recent hæmorrhage in the vicinity of the left optic tract. No separate deposits were found in the brain and the growth had evidently spread by continuity only. Briefly, the neoplasm seemed to be due to an immense overgrowth of the connective tissue framework of the nerve, mainly the neuroglia, but also of the more fibrous prolongations from the pial sheath. The optic nerve on the opposite side was much enlarged and on examining it microscopically the sections were seen to present precisely similar appearances to those on the right nerve which was described in the first paper. Mr. Devereux Marshall added that in the last volume of the Transactions would be found a paper by Bullar and himself, the basis of which was a case of optic nerve tumour somewhat similar to that described that evening, and at the present time (three years after removal) the patient was alive and well. In that paper the question of prognosis was fully discussed and the conclusion arrived at from published cases was that the disease, although of not

a very malignant type, could by no means be considered innocent and it was advisable to remove it as thoroughly as possible. This remark was justified by the present case where, although removed as completely as possible, the nerve was affected further back than the orbit and this was, of course, the way by which the growth reached the brain.

Mr. PERCY FLEMMING read a paper on three cases of Ophthalmitis (Pseudo-glioma) in Children. Case 1 recovered after a four months' illness, the main symptoms being irregular pyrexia, vomiting, head retraction, and diarrhœa. There was a history of convulsions and ear discharge, but no history of syphilis or acute specific fever. Case 2 died with typical posterior basic meningitis and pus in the right middle-ear. (This patient had an attack of chicken-pox four weeks after the eye became affected.) Case 3 died after an illness very similar to that of Case 1 and post mortem was found to have basic meningitis; the middle-ear was healthy. These cases, considered in relation with others published, might be taken to indicate that meningitis was the common cause of this particular form of ophthalmitis, and, further, that middle-ear disease was a likely cause of the meningitis. The following objections were urged against this view: (1) the fact that these cases in children rarely ended fatally; (2) pseudo-glioma was a rare complication of posterior basic meningitis, as was also optic neuritis; and (3) the usual unilateral character of the affection. Mr. Flemming considered that the eye condition was part of a septicæmic or pyæmic process which in most cases was limited to the eye, such cases recovering, whilst in others the meninges might be affected by the same process, these cases terminating fatally. The otitis might be the starting-point of the infection, and in any case of ophthalmitis (pseudo-glioma) it was most important to have the ear examined and even to puncture the membranes though apparently healthy.

Mr. KENNETH SCOTT and Mr. JOHN GRIFFITH contributed a paper on a case of Alveolar Carcinoma of the Eyelid which was removed from an Egyptian. The specimen on examination proved to be a carcinoma of the Meibomian glands.

The following cases and card specimens were shown:—

Mr. E. W. BREWESTON: A case of Pseudo-glioma.

Mr. W. T. HOLMES SPICER: Sections of Conjunctiva from a case of Spring Catarrh.

Mr. W. H. JESSOP: Tuberculous Ulceration of the Conjunctiva.

Mr. W. ADAMS FROST: Peculiar Crescentic Opacities in the Cornea.

Mr. TREACHER COLLINS: A case of Congenital Notch in each Lower Lid with Defective Development of the Malar Bones.

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DERMATOLOGICAL SOCIETY OF GREAT BRITAIN AND IRELAND.—A meeting of this society was held on June 28th at 20, Hanover-square, W. In the absence of the President, Dr. Payne, Vice-President, took the chair.—Dr. Eddowes showed a Case for Diagnosis. The patient was a girl, aged about 20 years, with a chronic unilateral linear non-pigmented papillomatous eruption starting from the vertebral line between the third and fourth dorsal spines and extending with some lapses of continuity across the right shoulder and down the extensor surface of the right arm on to the dorsum of the hand. It had the appearance of congenital neuropathic papilloma, but there was a very clear history that the eruption began on the hand only at the age of 10 years and was at first completely healed by treatment for eczema, which was the early diagnosis. The eruption had remained in its present condition for some eight years.—A majority of those joining in the discussion considered the case to be of the nature of ichthyosis hystrix, anomalous in its distribution and commencement.—Dr. Stowers showed: (1) A case of Hydroa Æstivale with Photographs of an analogous case previously shown; (2) Local Tuberculous Infection of the Skin in a child aged two and a half years; and (3) a Papulo-squamous Eruption on the Palms of the Hands with ulcerating nodules at the right angle of the mouth and under the right ala nasi, probably syphilitic in origin.—An interesting discussion took place on Unusual Sources of Primary Infection.—Mr. Hitchins showed a case of Maculo-anæsthetic Leprosy in a boy, aged 16 years, a native of South America. The disease was progressing rapidly.—Mr. Pernet exhibited a Microscopic Preparation from the case of Rodent Ulcer shown at the last meeting.—The next meeting of the society will be in October.

# Reviews and Notices of Books.

*Les Défenses Naturelles de l'Organisme.* (*Natural Defensive Mechanisms of the Organism.*) Par M. le Professeur A. CHARRIN. Paris: Masson et Cie. 1898. 8vo, pp. 319.

THESE 21 lectures by Professor Charrin deal with a subject which is receiving much attention at the present moment. After some introductory remarks the author discusses the relationship of the alkalinity of the body fluids to the defensive mechanisms of the individual. In Lectures III., IV., and V. ductless glands with their internal secretions come under review. Thus a full account is given of the functions of the thyroid body and the effects produced by its removal. The relation of the suprarenal bodies to Addison's disease is also discussed, as well as the rôle played by these organs in the infections and their action upon the circulation. Lastly, the important relations of the spleen to the composition of the blood are described and the experimental work in connexion with the spleen and infection is reviewed. Lecture VI., in which are considered the effects of an increased body temperature and the methods possessed by the individuals to counteract them, is of considerable interest. In Lectures VII. to XVI., inclusive, the parts played by various organs in protection against disease are discussed. The stomach affords a striking example. The rarity with which this organ is the seat of infection proper is well recognised. Much importance has been attached in this respect to the acidity of the gastric juice, but it would appear that the active principles of this secretion can also neutralise some toxins. The relation of disease of the pancreas to diabetes is also a subject of special interest. The important part played by the liver in the protective mechanisms of the body are set out in much detail. Under the generative system the question of the internal secretions of the ovaries and testes is discussed. The methods by which harmful products are got rid of by the various organs of elimination deserve and receive here much attention. The subject of the toxicity of the urine is fully considered under this section. The protective mechanisms provided by the nervous system are largely of a reflex character. The last lecture deals with phenomena outside the individual, such as light, warmth, vaccines, &c., which assist in protecting him against disease. The path of entry of micro-organisms and the means of combating them are specially considered. The author points out that it is only when the various defensive mechanisms are defective or have deteriorated that the agents of disease enter upon the scene. This volume of lectures by Professor Charrin is not only extremely interesting, but it is instructive and very suggestive. It brings together in compact form topics upon which the writings are mostly scattered. The subject itself appeals to a wide circle of readers for it interests not only the physiologist and pathologist but also the clinician.

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*Les Ptoses Viscérales* (*Estomac, Intestin, Rein, Foie, Rate*). *Diagnostic et Nosographie* (*Enteroptose, Hépatisme*). (*Displacements of Viscera* (*Stomach, Intestines, Kidneys, Liver, and Spleen*). *Diagnosis and Nosography—Enteroptosis, Hepatism.*) Par FRANTZ GLÉNARD. Paris: Felix Alcan. 1899. 20 francs.

IN this large octavo volume of close on 1000 pages Dr. Glénard gives us his experiences of 20 years of practice at Vichy based on the personal investigation of more than 10,000 patients. The avowed intention of the work is to establish enteroptosis as a definite morbid species, which is shown to include a vast number of diseases at present classified under the several heads—dyspepsia, neuropathies, neurasthenia, diseases of the stomach and intestine, and uterine affections. The enormous importance attributed by the author to functional and other

disorders of the liver in the causation of many of these conditions is evidenced by the fact that more than half the volume is devoted to the consideration of the disorders and displacements of this organ. In this clever and charmingly written book the reader will find a masterly if somewhat diffuse description of the physical examination of the abdomen in its minutest details. The chapter dealing with palpation of the intestine and the recognition of functional atonic narrowing of the large intestine (*entérosténose*) is particularly interesting and suggestive. The signs and symptomatology of the disorders and displacements of the stomach and of dislocations of the kidneys are fully treated, and among numerous clinical records of illustrative cases will be found a valuable epitome of all the recorded cases of floating liver (*hepatoptose*) as well as a series of 80 cases in which ptosis of the liver was associated with moveable kidney. We must refer the reader to the original for the deductions which Dr. Glénard draws from the rich store of clinical observations which he has so carefully collected and analysed.

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*Anatomie Clinique des Centres Nerveux.* (*The Clinical Anatomy of the Nervous Centres.*) Par M. le Dr. GRASSET. Paris: J. B. Baillière et Fils. 1900. Pp. 96.

A KNOWLEDGE of the anatomy of the nervous system is of the first importance to the proper understanding of nervous disease, hence this small work by Dr. GRASSET, who is himself a well-known neurologist, should prove to be of considerable value. In Part I. the neuron, together with the systems which it forms and its connexions, are fully considered and the whole subsequent treatment of the subject is based on the neuron conception. In the description of the superior and inferior psychical centres this doctrine is even applied to the processes underlying the most strictly psychical phenomena. A short account is also included here of the development of the nervous system, as well as some remarks on the subject of myelinisation, or the development of the medullary sheath. In Part II. the motor and sensory cerebro-medullary paths, both direct and indirect, are described. The remaining sections are allotted to the central nervous apparatus for vision, hearing, taste, and speech, and for the circulation, secretions, respiration, and digestion. This small book will be found to contain much useful information which will facilitate the study of nervous disease.

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## LIBRARY TABLE.

*Laboratory Note-book for Chemical Students.* By VIVIAN B. LEWES and J. S. S. BRAME. London: A. Constable and Co. 1900. Pp. 170. Price 4*s*.—Chemical work of any kind is of very little use to the student unless it is accompanied by intelligent and systematic note-taking. If this is true of the theoretical portion of chemistry it is doubly so in the case of experimental work, and Messrs. Lewes and Brame are to be congratulated in their attempt to supply a suitable book for the purpose. In their preface the authors state that their Note-book has been compiled without reference to any particular syllabus or examination and that it is intended to cover such practical work as a student should be familiar with if he is to have a good groundwork in the subject of practical chemistry. Although not written in any sense for a special examination there is no doubt that it will be found extremely useful to candidates for the Preliminary Science Examination London, and, indeed, for any other examinations where the preparation of certain gases and salts together with a little elementary volumetric analysis are a *sine quâ non*. The pages are interleaved throughout for the students' own notes. A section of a more advanced character at the end of the book deals with the preliminary examination of water, oils, and explosives, written more especially for the benefit of naval, engineering, and mining students.

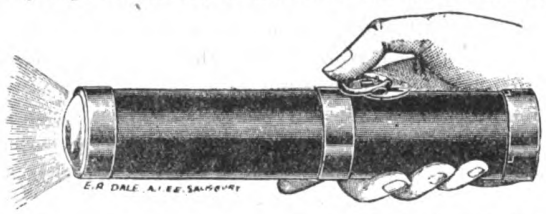
*Gynæcological Nursing.* By G. A. HAWKINS-AMBLER, F.R.C.S. Edin. London: The Scientific Press, Limited. 1900. Small crown 8vo. Pp. 93. Price 1*s*.—This little book contains a very practical and good account of the special details of gynæcological nursing. The duties of the nurse are given clearly and succinctly and cannot fail to be of service to those who are engaged in such special work. We are surprised to see, however, in the midst of so much that is good a description of the method of passing the catheter by touch, a custom which we thought was fast becoming obsolete. The observations of the author upon the personal hygiene and the special qualifications required from nurses engaged in gynæcological nursing are especially apt and to the point.

*The Bubonic Plague.* A Popular Lecture by Professor ANDERSON STUART.—Dr. Anderson Stuart has republished in pamphlet form a lecture recently delivered by him in Sydney. It is a clear and brief account of the plague, going as far into the etiology and pathology as the popular nature of the lecture allows, and explaining with a remarkable absence of technical phraseology the work of Yersin, Haffkine, and others. We hope that the lecture has obtained the wide circulation that it deserves, for undoubtedly it is good that people should know the measure of the risk that they run by the non-observance of medical regulations.

# New Inventions.

## THE "EVER READY" ELECTRIC LIGHT.

THIS is a handy little lamp, made in various sizes from three and a half to five and a half voltage and worked by a dry cell. Contact is made by pressing a ring down upon a spring. The whole is inclosed in a neat case and the cell is stated to have a life sufficient to give from 6000 to 8000 lights before requiring renewal. This of course is a hopelessly vague statement, for the life of the cell will entirely




depend upon the length of time for which the lamp is kept burning. The appliance, however, will be found convenient. It is made by Mr. E. R. Dale, 89, Fisherton-street, Salisbury. Mr. Dale, we see, calls himself a medical electrician as well as an electric light contractor. If this means only that he makes electrical medical apparatus—and we presume that Mr. Dale is not a medical man—he should state the fact in different words.

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## THE CAMBRIDGE SENTINEL PATENT DOMESTIC MILK STERILISER.

THIS is an ingenious invention for ensuring that milk when being sterilised by heat shall not be boiled—in other words, when the temperature reaches 185° F. the process of heating is stopped. The steriliser is made in two forms. In the one the heating is done by means of a gas stove in which upon the temperature reaching 185° the gas is automatically cut off. The other form which is for use with an ordinary fire cannot, of course, cut off the heat-supply, but when the desired point is reached a bell rings and so calls attention to the fact that a temperature of 185° has been reached. The apparatus is extremely simple and there are no complicated parts to get out of order. The apparatus can be obtained from the Sentinel Co., Limited, Cambridge. The saucepan is made of enamelled iron and the prices vary from 17*s*. 6*d*. for a six-pint pan with stove to 6*s*. 6*d*. for a one-pint pan without stove for use on a fire.

# THE LANCET.

*LONDON: SATURDAY, JULY 14, 1900.*


IN order to get a clear notion of the situation which has been brought about by Mr. BURDETT-COUTTS'S letter in the *Times* of June 27th last it is necessary to enter upon a brief description and recapitulation of what has since taken place. The main facts are, in our opinion, sufficiently clear. There was a serious outbreak of enteric fever among the troops in the Orange River Colony during the month of April, and we are content to accept in the meantime, and until it has been disproved, Mr. BURDETT-COUTTS'S statement in regard to what he saw at Bloemfontein on April 28th and subsequently. Bloemfontein, it will be remembered, was occupied by our troops on March 13th. They arrived there in a physically exhausted condition after a series of forced marches and after having altogether distanced their supplies. They became dependent upon a thin and precarious line of transport. An outbreak of enteric fever occurred and the medical service, overwhelmed by the amount and explosive nature of the epidemic, for a time had not the means of coping with it. This gave rise to the overcrowding and the lamentable suffering and occurrences described by Mr. BURDETT-COUTTS. We may set aside all the testimony of correspondents and others descriptive of their experience at other times and places as irrelevant and therefore worthless. The only questions are whether the emergency could, in the first instance, have been prevented, and secondly, whether, having arisen, everything was afterwards done as promptly as practicable to meet it. With regard to the second question Mr. BURDETT-COUTTS plainly implied that in his opinion such was not the case, and he has urged that if one day's trains on the railway had been utilised for getting up hospital stores the whole position of the sick and wounded would have been saved. This is a matter that has to be thoroughly gone into.

In the debate in the House of Commons on June 29th which followed upon the publication of Mr. BURDETT-COUTTS'S letter Mr. WYNDHAM gave a very able and lucid statement in explanation of affairs in South Africa. He spoke in defence of the Government and those concerned as far as the information in his possession enabled him to do so. Mr. BALFOUR, in a speech which was not devoid of asperity, held that the charges raised by Mr. BURDETT-COUTTS involved a question of transport. After Lord ROBERTS had made his remarkable march to Bloemfontein, said Mr. BALFOUR, he had to depend upon a very precarious transport, and the preventability or inevitability of the enteric fever among the troops turned upon how Lord ROBERTS or his subordinates used this transport. Here we may remark that, as far as we can see, there is really no occasion for any persons to shelter themselves behind the well-known popularity of Lord ROBERTS. It is a question of fact about which the commission going to South Africa will have to inquire. If the army medical authorities failed to represent the pressing urgency of the case they must of course take the consequences; whereas if the military authorities assumed the responsibility of overruling them and of using the transport in such a way as to be of no service to the medical service no blame can obviously in that case be attached to the medical service. It is only fair to say that there seems to be no question that the troops were in a miserable plight on their arrival at Bloemfontein—they and their horses were half-starved. Soldiers cannot fight unless they are properly fed and supplied with ammunition, and unless the military machine is in an effective state the safety of the whole force, sick and well, may be jeopardised. It is clear that in an emergency of this kind the medical equipment would have to rank after and not with the food-supply of an army.

Next came the appointment of a commission with the following reference: "To report on the arrangements for the care and treatment of the sick and wounded during the South African campaign." It should be added that Mr. ARNOLD-FORSTER asked, "Does the reference include the power of inquiry into the organisation of the Army Medical Department?" and was told in reply that the question was not referred to the commission but that no doubt the finding would have a bearing on it. The names of three commissioners were originally proposed—viz., Lord Justice ROMER; Dr. W. S. CHURCH, the President of the Royal College of Physicians of London; and Dr. D. J. CUNNINGHAM, Professor of Anatomy and Surgery, Trinity College, Dublin. No objection was raised on the score of their ability. The selection of a lawyer of the great eminence and business qualifications of Lord Justice ROMER, accustomed to and able to instruct those associated with him in the laws of evidence and in the testing and sifting of it, was felt to be very appropriate, while the official positions of the two medical men spoke for their reputations. But the feeling of the House was strongly against having the commission so small, and many Members held it to be a serious mistake on the part of the Government to have allowed a preponderance of medical men on it. Mr. BALFOUR attempted to support his original proposition, but had to yield the point in deference to the opinion of the House and the commission of three was increased to five. There can be no possible objection to the increase of the lay element on the commission, although we cannot see why members of the medical profession should not bring absolutely honest and impartial minds, together with common sense and experience of life, to the task. We have no desire to see any undue preponderance of the medical element on the commission. But we are not satisfied with its constitution and, such being the case, we are bound to state our reasons.

In the first place, there is such a thing as sacrificing efficiency to a fastidious sense of impartiality. There is no representative of the Army Medical Service on the commission who could, by his technical knowledge and

experience of army life, keep the commission informed on all points connected with the organisation, equipment, system, and methods of procedure adopted on field service, the reasons for their existence, and how far they are in conformity or not with those of all other European armies. It may be said that there was no necessity for such an appointment seeing that there were any number of medical officers in South Africa who could be summoned to give their evidence on such matters. This is practically tantamount to saying that the commission would be learning their business during their inquiry, and this is a thing which too many of our commissions are content to do. The special knowledge of a medical officer of ability and independence would be of immense value in facilitating the business of the inquiry and in indicating the nature and bearing of many of the questions that will have to be put. If no such officer is appointed on the commission we think it very desirable that such an officer should be called in as an assessor who need take no part in the deliberations and need not sign the report. If the commission can make any suggestions for improving the organisation of the Royal Army Medical Corps, or for providing a better hospital service than the present one, without gravely prejudicing the mobility of the army on a campaign, we can answer for it that there is no section of the community which will be more grateful to them than the medical profession. Any such suggestions could probably be more thoroughly considered and worked out subsequently. With this very practical end in view it seems to us that the aid of a man with some army experience is an essential matter.

Lord Justice ROMER is, as we have said, an unexceptionable choice. Dr. CHURCH, occupying the highest professional position as President of the Royal College of Physicians of London and as a physician on the staff of a hospital like that of St. Bartholomew's, in addition to enjoying the reputation of being an excellent man of business, unites all the necessary qualifications for the task before him. Concerning the third commissioner as yet selected we have some delicacy in expressing an opinion. No one can recognise more fully than we do the great reputation and scientific attainments and ability of the Professor of Anatomy and Surgery in Trinity College, Dublin, but we feel sure that we shall not be misunderstood in saying that the inquiry in South Africa does not seem to us to be one calling for his special gifts. Rather it demands the exercise of qualities of another kind and occupying a distinctly lower level, and not necessarily a scientific one even. With all possible respect for Professor CUNNINGHAM we must confess that we do not see his especial claim to be a commissioner, and we say this without laying any stress upon his official connexion with the Army Medical Service to which attention has been pointedly drawn. But in addition to the present commissioners we think it highly desirable that the services of a traffic manager of one of our great railways should, if possible, be secured. Such a man is sure to be a man of business capacity and common sense or he would not be where he is—in the position of traffic manager—and his practical experience and intimate acquaintance with systems of railway organisation would be invaluable in an inquiry of this kind. We hope that one at least of the two commissioners to be added will be a man of tried capacity in business affairs, preferably in railway transport.

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SINCE the well-known description in the "Surgeon's Daughter" by Sir WALTER SCOTT of the medical practitioner, "from whom Scotland reaps more benefits and to whom she is perhaps more ungrateful than to any other class of men, excepting her schoolmasters," there have been few more eloquently simple accounts of the lot of the Scottish village practitioner than is contained in a memorial to the Local Government Board of Scotland, signed by 40 medical officers of the more remote parishes of the Highlands and Islands of Scotland which we publish in our columns this week (page 129). "Besides," says Sir WALTER SCOTT, "attending to such cases as the village may afford he is day and night at the service of anyone who may com and his assistance within a circle of 40 miles in diamete[illegible] untraversed by roads in many directions, and including moors, mountains, rivers, and lakes. For such work the village doctor receives at best a very moderate recompense, often one which is totally inadequate, and very frequently none at all." No wonder that MUNGO PARK told Sir WALTER SCOTT that after trying both courses of life he preferred "travelling as a discoverer in Africa to wandering by night and day the wilds of his native land in the capacity of a country medical practitioner."

The memorial of the Scottish medical officers of the more remote Highlands and Islands shows that there is little improvement in the position of the medical man as compared with what it was in MUNGO PARK'S time. The wealth of Scotland has enormously increased. She has spent millions of money in the vindication of religious sentiment or principle. But she has made little advance throughout these remote regions in the treatment of her poor or in the remuneration of the medical men who attend them. This subject is not new to us. We have on several occasions tried to direct the attention of the medical profession of Scotland, as well as that of her statesmen, to the lamentably defective provision in these districts for the care of the poor in respect of nursing and medical attendance. There is, for example, no isolation whatever of infectious cases. The neglect of such provisions by the responsible authorities of Scotland has had a demoralising effect on the people themselves—religious and decent as they are—so that on some occasions and in certain districts those affected with fever have been left to die alone, forsaken by their very relations and with none to give them a drink of water or, in the event of death, to put them into their coffins. Only the medical man. And we cannot altogether acquit the profession itself of blame. A little more assertion of its own claims and a little more publicity thrown upon the discreditable plight of the sick in their wretched and unhygienic homes would have been justified, and might have deprived the authorities of Scotland, imperial or municipal, of any excuse that they may now have for so long leaving enormous districts in ignorance of sanitation and with very imperfect means of battling with tuberculosis and infectious diseases. There i one difference between the Scotland of to-day and

that of Sir WALTER SCOTT and MUNGO PARK. In their time the organised system of relief by poor-laws scarcely existed. Men like the late Dr. CHALMERS believed in the sufficiency of the principle of humanity acting voluntarily and for the most part through churches. But now the legal system of relief of poverty and sickness has been generally introduced, and we must attribute ts defects mainly to the municipal and State authorities. Such authorities will doubtless argue that they only represent the community for which they act. And they will argue rightly. Nobody can doubt that if half the enthusiasm were shown by the people of Scotland in the provision of proper medical care for the poor in remote parts that is shown in providing for their spiritual wants their condition in respect of preventable sickness and mortality would be very different from what it is, and the medical men who wander over these wide districts would be more respected and better remunerated than they are.

The memorial may be taken as a sign that the medical officers themselves who are the agents of this system of relief are beginning to realise its defects. There can be but one opinion as to the hardness of their lot, the responsibility of their duties, and the inadequacy of their pay. Liable to calls in all weathers, in all seasons, over areas of 30 or 40 miles, sometimes unable to return home the same night, and with little chance of earning more than from £20 to £50 a year beyond their official parochial salary, their case is indeed entitled to consideration in many more respects than that which they specify. They ask only for the provision of a locum-tenent for a month, which would enable them to seek rest and refreshment in an annual holiday. We endorse every word of their memorial, only finding it too restricted in its points of complaint. The sick poor of these remote regions will not be properly treated until much more is done to improve the medical officer's position than is implied in supplying him with a locum-tenent. His whole status needs improvement, coupled with the security of tenure of office. Meantime he has made the most modest request possible for an advantage already conceded to dispensary medical officers of Ireland. We cannot doubt that it will be granted. The demand is the more reasonable as the value of locum-tenents has risen much of late, and, indeed, has reached a point beyond the means of the underpaid officers of the Scotch Poor-law. We have only to repeat that they owe it to themselves and to the poor of these districts to ask for many other improvements in their position beyond the solitary one included in their memorial.

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EVER since the differentiation of the disease usually known as rötheln, or German measles, from scarlet fever and measles was first attempted in Germany towards the end of the eighteenth century various and conflicting views have been held by the medical profession as to its essential nature and clinical manifestations. It must appear obvious to any unprejudiced observer, as was suggestively pointed out by the late Dr. HILTON FAGGE, that the severe and frequently fatal affection described by PATTERSON of Leith in 1840, following the earlier German writers, and later by AITKEN and COPLAND, can have but little in common with the mild disorder described by THOMAS in ZIEMSSEN'S *Handbuch* some 30 years afterwards, which is more in accord with the observations of writers of the present day. So contradictory are the two accounts that it is impossible to regard them both as applicable to the same disease. Admitting, however, the general appropriateness of this modern conception of rötheln as we know it to-day we are confronted with the fact—and it is a most unfortunate one—that considerable discrepancies occur in the clinical descriptions of the disease emanating from different though equally competent observers. In other words, there exists even at the present day an undoubted want of agreement as to what constitute the distinctive symptoms of rötheln. In its clinical appearances the affection presents certain features which closely simulate both scarlet fever and measles. For this reason rötheln has been variously held to be a modified form both of measles and of scarlet fever, as well as a hybrid of the two infections. Each of these views is now regarded as untenable and the disease for some years past has been almost universally held to be a specific entity, having just as much claim to separate recognition as either measles or scarlet fever. We publish this week a communication from Dr. CLEMENT DUKES of Rugby in which he brings forward what are undoubtedly cogent reasons for revising our views as to the position of rötheln. The exceptional opportunities for observing the exanthemata which Dr. DUKES has enjoyed for many years as responsible medical officer to one of our largest public schools, and the special interest which he is known to have devoted to the clinical interpretation of this particular disease, entitle him to speak with more than ordinary authority.

Dr. DUKES'S main contention is that under the term "rubella," of which the other synonyms authorised by the Royal College of Physicians of London in the last edition of the "Nomenclature of Diseases" are "rötheln," "German measles," and "epidemic roseola," there are included two separate infections, each of which is etiologically and pathologically distinct; though hitherto, mainly in consequence of the close similarity of their clinical appearances, they have been almost universally confused. Their occasional concurrence in epidemic form would doubtless contribute in some degree to this confusion by tending to delay their separate identification, as has certainly been the case in respect to rubella when it has prevailed simultaneously with scarlet fever or measles. If Dr. DUKES is right in his contention that two perfectly distinct diseases have hitherto been classed under the term "rötheln," both of which are capable of propagation and invariably "breed true," we must recognise the presence amongst us of an additional specific fever which, like other members of the group, while affording protection against a second attack, confers no immunity whatever against the infection of any other disease. Dr. DUKES does not claim any novelty for the idea that two separate diseases are classified under the name "rötheln"; indeed, he himself, writing in 1894, distinctly refers to it. Moreover, the Council of the Medical Officers of Schools Association in a recent circular suggested that certain groups of cases to which they applied the name "infectious roseola," being of a particularly mild character

and unattended with obvious catarrh or definite faucial or glandular involvement, were really distinct from rubella though usually confused with it. Dr. DUKES states that though the question had frequently presented itself to his mind he had signally failed to establish a single fact to sustain the hypothesis, but that increased observation and extended experience have now convinced him to the contrary.

Although by those who enjoy exceptional facilities for observing the course and development of infective diseases amongst the young this pronouncement of Dr. DUKES may not be altogether unexpected, we imagine that to the profession at large the addition of one more exanthem to the recognised list will come with something of a shock. Dr. DUKES provisionally names it the "fourth disease" by reason of its admitted resemblance to scarlet fever, measles, and rötheln, which are already sufficiently confusing. The increased possibilities of mistake which the addition of a "fourth disease" implies are more than counterbalanced by the light which it undoubtedly sheds on what has hitherto proved the greatest stumbling-block to diagnosis in this particular field—viz., the confusing resemblance which rötheln bears alike to measles and to scarlet fever. The fact is so well recognised that it is customary to speak of the "measles type" and the "scarlet fever type" of the disease. Now, according to Dr. DUKES'S proposition the cases of the scarlatinal type are not rötheln at all, but instances of another affection—viz., the "fourth disease." Dr. DUKES is unfortunately obliged to admit that its resemblance to scarlet fever is so close as to make its recognition occasionally impossible and that a series of cases may be necessary conclusively to establish the diagnosis. For this reason he believes that innumerable cases of the "fourth disease" have been ascribed to scarlet fever, a suggestion which, if true, is of considerable importance. Its differentiation from rötheln, too, is frequently very difficult owing to the similarity of their symptoms, and the difficulty is increased not only in consequence of their period of incubation being almost identical, but also by reason of the fact that the two diseases are sometimes locally concurrent.

Let us now briefly review the evidence on which Dr. DUKES bases his belief that these cases are essentially distinct from rubella or German measles. The rash, though closely resembling that of rubella during its later stage by reason of its presenting a diffuse puncto-erythematous appearance, differs from it in that it does not pass through a stage of morbilliform maculation but assumes the scarlatinal characters from the outset. Distinct redness and swelling of the fauces sufficient to give them a velvety appearance are usually present, though attended with but little, if any, faucial discomfort. The cervical lymphatic glands are somewhat enlarged and tender, but though the enlargement is more pronounced than in scarlet fever it is usually less conspicuous than is the case in rubella, in which disease it is not very uncommon for the patient to complain of tenderness of the cervical chain for several days before the rash appears. In most cases the patient desquamates freely, the epidermis being shed in small scales, but in occasional instances the peeling appears to be as copious and complete as it ever is in scarlet fever. The disease occurs in patients who have previously, even recently, suffered from undoubted rötheln. This constitutes the strongest argument of all. Indeed, it was from personal observation of an epidemic at Rugby School last March that Dr. DUKES became convinced of the separate nature of the two disorders. Out of a consecutive series of 20 cases which displayed the symptoms characteristic of this "fourth disease" no fewer than nine of the boys—that is to say, 45 per cent.—had previously suffered from rötheln, some of them within the previous 12 months. An interesting point confirmatory of its being distinct from rötheln is that while rötheln, like measles, tends to affect large numbers in a school, the disease in question, like scarlet fever, always occurs to a much more limited extent—a fact which tends to show that it is less infectious at an early stage than rötheln.

In the differentiation of the "fourth disease" from scarlet fever the main difficulty lies in the extraordinarily close resemblance which exists between their respective eruptions. In each case the rash is followed by free desquamation and, according to Dr. DUKES, in exceptional instances of the "fourth disease" the peeling may be as profuse and protracted as it is in any case of scarlet fever. It is stated that the degree of peeling bears no relation to the intensity of the pre-existent eruption. In this respect, then, the "fourth disease" differs from scarlet fever. We gather that Dr. DUKES would place also some weight on the following points as serving to distinguish the "fourth disease" from scarlet fever. The incubation is considerably more prolonged—viz., from nine to 21 days; whereas in scarlet fever it is usually two days and rarely exceeds five days. It is suggested that the frequent confusion of the two diseases in practice may be accountable for the misleading statements in some of the text-books as to the occasional prolongation of the period of incubation in scarlet fever. There is usually no pre-eruptive illness, the invasion being unattended with either vomiting or faucial discomfort. The pulse-rate rarely reaches 100. This is in marked contrast to the relatively rapid pulse of early scarlet fever. The fauces are simply reddened. They are never really inflamed even should the rash be intense, which is by no means uncommon. The tongue shows no definite peeling but cleans in normal fashion; hence the "strawberry" tongue is wanting. The cervical lymphatic glands are always enlarged and tender, but not to the same extent as they usually are in rötheln. The kidneys are not affected; neither albuminuria nor nephritis are liable to arise. No immunity is conferred against a subsequent attack of scarlet fever and the period of infectivity is said to last but from 14 to 21 days, though desquamation may proceed for several weeks longer. Such are the points which are mainly concerned in the clinical differentiation of the "fourth disease" from rötheln and from scarlet fever.

Dr. DUKES recognised as far back, at any rate, as 1892 that there exists a disease so closely resembling scarlet fever as to be frequently mistaken for it even when prevailing as an epidemic. This affection he at that time regarded as the scarlatinal variety of rötheln. Subsequently, in 1896, in connexion with a most confusing outbreak in a school which he investigated with striking ability and marked success, Dr. DUKES elucidated the

important fact that this disease, which closely simulated scarlet fever, was prevailing concurrently with that affection. Since neither disease afforded protection against the other, as evidenced by the fact that 32 per cent. of the patients developed both of them in turn, the inference was certainly justified that the disease which formed the subject of investigation was specifically distinct from scarlet fever. Again, as recently as March, 1900, as a result of his inquiries into an outbreak at Rugby School of what was apparently the same disease, Dr. DUKES found that no less than 42 per cent. of the boys attacked had previously suffered from rötheln—a fact which made it more than probable that the disease in question was quite distinct from rötheln. Two points, then, may be regarded as proved. First, that the epidemic investigated in 1896 was not scarlet fever; and, secondly, that the outbreak at Rugby School inquired into last March was not rötheln; but whether, as is believed by Dr. DUKES, the disease was in each instance the same is not, we think, so conclusively proved, although its demonstration constitutes an important link in the argument by which he claims to have established the specific independence of the "fourth disease." The question as to whether the Rugby epidemic of last March may not have been after all a mild form of scarlet fever is one which appears to present some claim for consideration, since a remarkable constancy of type is occasionally observed in connexion with a localised prevalence of the disease. Dr. DUKES admits that the illness resembled scarlet fever more closely than any series of cases he had yet seen, that he had never observed such extensive desquamation except in scarlet fever, that none of the patients had previously suffered from that disease, and that the length of incubation in these attacks could not be ascertained. The force of these objections cannot be altogether ignored. Moreover, the negative aspect f some of the symptoms described—viz., the absence of definite faucial inflammation and, under these circumstances, of definite peeling of the tongue, the return of normal temperature by the third or fourth day, the freedom from kidney complication, and the pparent lack of infectivity after the third week—are al consistent with mild scarlet fever. This point is one of considerable interest, since the infectivity of the later peeling after scarlet fever has been much questioned during recent years. Any advance in our knowledge of what is and what is not scarlet fever is a valuable step in the right direction as tending without doubt to enhance professional credit and promote the welfare of schools; in addition to which, as Dr. DUKES very rightly and with much force oints out, if a more accurate diagnosis is competent to effect a curtailment by two-thirds of the period of isolation hitherto deemed necessary for many of the cases which we ave been accustomed to regard as scarlet fever, the proporionate saving of inconvenience and expense to the community must of necessity be considerable.

Dr. DUKES offers the suggestion that the wide extension of scarlet fever which was observed throughout the country during the winter of 1892 and the spring of 1893 may have been really dependent on the epidemic prevalence of the "fourth disease," and in confirmation of this view he instances the low mortality which characterised the outbreak. So far as London is concerned this view is not supported, for though the numbers admitted into the metropolitan fever hospitals during 1892 and 1893 considerably exceeded those of any former years the death-rate showed no corresponding reduction. But having regard to the relatively large proportion of cases certified as scarlet fever which are now received into the public hospitals the question as to whether the period of detention might not in many cases be reduced by some two-thirds is one of municipal importance as directly affecting the pockets of the ratepayers, both in respect to maintenance charges and the necessity for providing further isolation accommodation.

Dr. DUKES has done good service to the profession, and indirectly to the public, by showing most conclusively that there exists a disease which so nearly resembles scarlet fever as to have been frequently mistaken for it even when the opportunity has occurred of observing a multiplicity of cases; but whether this affection is specifically distinct, and not a form of German measles as is currently believed, is a point on which we think it right to suspend judgment for the present. Further critical observation, however, of the points so clearly indicated by Dr. DUKES may ultimately succeed in establishing this proposition.

# Annotations.

"Ne quid nimis."

## THE NEW UNIVERSITY OF LONDON.

THE history of the various stages in the movement for the formation of a Teaching University in London in the place of an Imperial degree-giving establishment has been fully placed before our readers. A complete sketch of its various details from 1864 to the appointment of Lord Davey's Statutory Commission in August, 1898, will be found in our Students' Number of Sept. 3rd, 1898. The new statutes were sealed by the order of the Commissioners on Feb. 13th, 1900, and the regulations were ordered by the House of Commons to be printed on March 1st, 1900. The statutes and regulations have now passed through Parliament, and we congratulate the Commissioners on the thorough and rapid manner in which they have carried out their part of the work. We trust that the machinery recommended by the Commissioners will as rapidly come into being and so speedily complete its various duties. The Senators (16) elected by Convocation will probably be chosen in October.

## PLAGUE IN TURKEY.

THE first case of illness which gave rise to an alarm of plague in Smyrna has already been described in THE LANCET of May 19th (p. 1456) and June 9th (p. 1672). It was on May 5th that Dr. Amado of Smyrna first saw the patient and he immediately notified the case to the local *médecin sanitaire*. On May 27th Dr. Corris, also of Smyrna, met with a second instance of suspected plague. The patient was a man, aged 23 years, who had a temperature of 40·5° C. (105° F.) and a pulse of 120 per minute; he suffered from intense headache, vomiting, mental apathy with inability to answer questions, flushed face, and an inguinal bubo on the right side of the size of a small egg and painful when touched. There was no apparent lesion which might have caused the bubo. On the following day (May 28th) the patient was

somewhat better, but on a more careful examination it was found that instead of one bubo there were four enlarged glands—one in Scarpa's triangle, two above Poupart's ligament, and one above the pubes. The two patients lived about 400 yards apart. On June 7th a third case of suspected plague was discovered, the patient being a lad, 14 years of age, a Mohammedan servant in a Mohammedan house in the Turkish quarter far from the neighbourhood of the previous cases. His symptoms were a temperature of 38° C., a pulse of 90 per minute, an enlarged gland in Scarpa's triangle of the size of a pigeon's egg and painful when touched, and three enlarged glands above Poupart's ligament. Although the symptoms were not pathognomonic of plague the patients were isolated outside the city on a hill at Kiatipoglu. On the first case being reported to the authorities at Constantinople the Inspector-General of the sanitary service and Dr. Nicol, the director of the Pasteur Institute at Constantinople, were ordered to proceed to Smyrna to make investigations. Dr. Nicol and Dr. Nouri Bey were unable to find plague bacilli in the enlarged glands of the patients, but cultures showed the bacilli after three days' growth, and the same cultures produced characteristic lesions in rabbits. On June 6th and June 11th the *médecin sanitaire* at Trebizond reported two suspected cases of plague, one a man, aged 70 years, a pilgrim just returned from Mecca, and the other, a girl, aged five years, the daughter of a boatman. There was no bacteriologist at Trebizond, but one has been sent there from Constantinople. The precautions taken by the authorities are limited to quarantine and nothing is being done to improve the sanitary condition of the towns.

## PYORRHŒA ALVEOLARIS.

AT a recent meeting of the Royal Medical and Chirurgical Society Mr. Rickman Godlee drew attention to that condition of the gums which is termed "pyorrhœa alveolaris." The medical profession has so far given but scant attention to this distressing condition, and the gums as a possible focus of infection have been almost, if not entirely, overlooked. Conditions which lead to the loss of teeth at an early age owing to a gradual but progressive destruction of the periodontal membrane have greatly increased in recent years. This destruction of the periodontal membrane is, as far as present knowledge shows, due to an inflammation commencing around the necks of the teeth and spreading towards the apices. All the teeth may be affected by the disease or the condition may be limited to a few teeth or even to one. In some patients the disease progresses slowly, and although pus may be present in small quantities it is not easily recognised. In other cases the destruction of the periodontal membrane is rapid and accompanied by much congestion of the gums and a copious discharge of pus from the tooth-sockets. The constant swallowing of so much pus may give rise to infective gastritis and other conditions traceable to the presence of pyogenic organisms. The importance of this to medical men is obvious. In the four cases recorded by Mr. Rickman Godlee the absorption of the pus from the mouth seems to have played an important part in the causation of the conditions recorded, since on the flow of pus from the gums being checked the general condition of the patient considerably improved. Dr. William Hunter, too, has recently shown that there are strong reasons for believing that some cases of pernicious anæmia are traceable to absorption of septic and infective material from the oral cavity. Within the last few years an abundance of literature has appeared dealing with the etiology of this disease. In reading this through it is evident that the term "pyorrhœa alveolaris" is differently used by different writers. Some include under this term only that condition where suppuration is present (true pyorrhœa alveolaris), while others include all conditions where the gums are receding. Among the latter many cases are due not so much to a suppurative inflammation as to degeneration and atrophy of the tooth attachments. There is also a divergence of opinion as to whether the disease is local or general in its origin. If the majority of patients suffering from pyorrhœa be examined it will be found that they are the subjects of some diathesis, such as gout or rheumatism, or are suffering from conditions which tend to lower the general vitality of the tissues, more especially fibrous tissues. These conditions may be regarded as predisposing causes, the actual disease being started by some local irritant, such as the deposit of tartar, or an anhygienic condition of the mouth, or a badly fitting denture. When once the inflammatory process is started it is not difficult to understand that suppuration may take place when it is remembered that pyogenic organisms, more especially the streptococcus brevis, are present in nearly all mouths in which there is caries. Dr. Miller of Berlin has made a careful bacteriological examination of the discharges from cases of pyorrhœa alveolaris with the object of determining the presence of a specific micro-organism. He has been unable to find such an organism but has found that the organisms present possessed well-marked pyogenic properties. In the light of our present knowledge pyorrhœa alveolaris should perhaps be regarded as suppurative periodontitis. Pyorrhœa is an insidious and in many ways an intractable disease. If, however, it is recognised at the onset and properly treated it may be held in check and the teeth may be saved for many years. The signs of the disease are a soft, flabby condition of the gums which are also deeply congested and tender. The teeth are unduly moveable in their sockets, and on gently pressing the gums pus will be noticed to flow freely from around their necks. On closer examination it will be found that a fine probe can be passed some distance up the sockets of the teeth showing that the periodontal membrane has been stripped off. A deposit of tartar is nearly always present around the necks of the teeth. The treatment should consist in the removal of all hard deposits from the roots of the teeth. This should be followed by thorough irrigation of each tooth socket with some antiseptic and for this purpose peroxide of hydrogen (20 volumes) is excellent. The inflammatory condition of the gums must be treated with astringents. Local treatment carried out regularly on the lines indicated, with attention to the general condition of the patient, will produce a considerable improvement in most cases.

## COAL SMOKE ABATEMENT: THE CLAIMS OF AN INVENTION.

THE smoke question has assumed such proportions that any mechanical arrangement for the suppression or abatement of the nuisance naturally commands attention. We are informed that Sir William Richmond, the President of the Smoke Abatement Society, accompanied by Mr. Arthur Ventriss, surveyor and engineer to the Strand District Board of Works, Mr. Edward Turner Atkinson, mechanical engineer to the London County Council, Mr. Samuel Goodall, of the Acton District Council, and other gentlemen, including several medical officers of health and a number of officers of the different sanitary authorities, met recently to inspect some machines supplied by Messrs. Ransomes and Rapier which were on view at the premises of Messrs. Taylor Bros., cocoa manufacturers, Brick-lane, E. The inspectors are said to have been satisfied that there was absolutely no visible smoke where the machine was employed, which sounds too good to be true. Mr. Churchill, one of the directors of Messrs. Taylor Bros., claimed that by the use of the machine increased economy and

efficiency to the extent of 25 per cent. resulted and that there was almost a complete immunity from wear and tear, the machines in two and a half years not having cost a penny in repairs, every part, bars included, being in as good condition as when first put in. The coal used was small Derbyshire, that previously used being best Welsh coal. Mr. Atkinson, who is admittedly an expert on this subject, having put a number of searching questions to the engineer in charge and made an exhaustive examination of the machine, expressed himself as perfectly satisfied, and was of opinion that an apparatus was now before the public which would not only enable steam-users to comply with the provisions of the Act for the prevention of smoke, but which it would actually be to their interest, both as regards saving in coal and extra boiler duty, to adopt at their works. We understand that these mechanical stokers are being extensively used both in London and the large manufacturing towns.

## MEDICAL MEN AS CORONERS.

MR. F. W. LOWNDES, chief surgeon to the Liverpool police, has re-issued his pamphlet entitled, "Reasons why the Office of Coroner should be held by a Member of the Medical Profession." He gives his reasons clearly and we find ourselves in accord with his arguments, while we are naturally interested in his illustrations of the advantage of medical training to a coroner, seeing that he cites two inquests held before the late Thomas Wakley—the well-known Hounslow flogging case and the Hillingdon case of 1850—in the course of the latter of which investigations a further examination made at the coroner's suggestion of the throat of a man supposed to have died as the result of a fight disclosed a piece of meat which had lodged so as to choke him. Unless this further examination had been brought about before the body was buried an innocent man might have been committed to take his trial for manslaughter. It is contended by some that the coroner should be a trained lawyer, but it was the opinion of the late Mr. Wakley that enough law for the necessary purposes of the office could be acquired in a day, and we see no reason materially to modify this opinion; although, no doubt, a barrister of some standing, who has enjoyed a practice, may have had useful experience in dealing with witnesses and juries and in the understanding of statutes and decisions—so that the ideal coroner would no doubt be one trained both as a lawyer and a medical man. In support of the medical coroner Mr. Lowndes calls attention to the fact that the coroner's first duty—and a very important one—is to decide when a death is reported to him whether the cause of it is unknown or whether it has otherwise taken place in such circumstances that an inquest need be held. For arriving at a correct decision upon this point the best equipment must of necessity be a medical training; while, again, when the inquiry is being held the medical training of the coroner is essential if the viewing of the body by coroner and jury, obligatory by law, is not to be, as it often is, a meaningless formality. We are aware that the holding of an inquest may involve the committal for trial of a person supposed to be criminally responsible for the death inquired into. Persons are, however, very often committed for murder and manslaughter by magistrates of no legal education and less experience than a coroner should gain after a few months' work, while the cases in which such committals take place at the hands of the coroner form a smaller proportion of the number of inquests held than many suppose. According to the latest blue-book on the subject in 1898 inquests were held in England and Wales on 34,541 persons and only in 3210 cases was death found to be due to wilful or criminal acts, while of these 3210 cases 2881 were suicides. The remainder included 169 cases of murder, 145 cases of manslaughter, five cases of justifiable homicide, and 10 executions. Again, if any still think that the committal of a prisoner to take his trial for murder or manslaughter by a person not a lawyer may involve a danger to the public, we must point out that although a prisoner may in law be put upon his trial upon the coroner's inquisition only without further preliminary, he is always also examined before a magistrate or magistrates. Before the magistrate only such evidence may be given as is legally evidence against the accused, excluding much that may quite properly be relevant at the coroner's inquiry into the cause of death, and the magistrate may not think the evidence sufficient to justify a committal. Should the magistrate commit the prisoner for trial a bill of indictment is then sent before the grand jury at the next assize. Should the magistrate decline to commit, or should the grand jury throw out the bill, the prisoner is never, as far as we know, tried upon the coroner's inquisition alone, but by the judge's permission the Crown tenders no evidence and he is set at liberty. Those who consider the expense and trouble that may be caused and the amount of pain that may be given to bereaved relatives by the holding of an unnecessary inquest will be in accord with us in our view that a medical man is the right person to decide whether an inquest should be held or not. Those who calculate the amount of medical evidence which it must have been necessary to explain to juries in the course of inquests held in a single year on nearly 35,000 dead bodies will agree with us that, again, for the actual holding of the inquiry the medical training is more likely to be of use to the coroner than the legal training. His duties had once a wide range; they still are of great importance but are practically limited to inquiries into the cause of death, the few additional functions that might be mentioned not demanding any considerable legal knowledge.

## THE DISSEMINATION OF PLAGUE BY RATS AND FLEAS.

PLAGUE has now been established in Sydney for several months, and in an address delivered before the New South Wales Branch of the British Medical Association on April 7th Dr. Frank Tidswell of Sydney discussed a variety of interesting questions relating to the disease. In reference to rats, he said that there were many instances which showed that the presence of a plague rat was responsible for the illness in man. For example, a number of dead rats found one morning in a cotton factory at Bombay were removed by 20 coolies. Within the three following days about half of them fell sick with plague, whilst those in the store who had not touched the rats were not affected. Again, the coachman of an English family in Bombay found a dead rat in the stable and removed it. Three days later he fell sick with plague and died in a few hours, no other person in the same house being affected. Many persons, however, have caught plague without handling plague rats and many persons have handled plague rats without catching plague. To explain this difficulty Simond[1] has suggested that the infection is carried by the fleas natural to the rats. Perfectly healthy rats harbour very few fleas and are very expert in removing them, but fleas are abundant on sick rats. After death, as the body becomes cold, the fleas leave it. In this way Simond accounted for the fact that a plague rat may be handled with impunity some hours after death. If the fleas from the dead rat reach another rat or a human being, they may inoculate the bacilli they acquired by ingesting the blood of their former host. In some of Simond's experi-

[1] Propagation de la Peste, Annales de l'Institut Pasteur, 1898.

ments sick and healthy rats in separate cages were enclosed in a glass jar and it was found that when no fleas were present the healthy animals did not become infected.

## "CHRISTIAN SCIENCE" AT HOME AND ABROAD.

WE mentioned recently that a powerful body of Oddfellows in America has decided to decline as members all persons associated with the semi-religious body known as "Christian Scientists" on account of the high rate of mortality shown to prevail in a fraternity which declines to avail itself of the services of medical men in cases of illness. This seems to show that provident associations of the nature of Oddfellows have some appreciation of the practical value of their medical attendants, however little respect or generosity they may exhibit towards them. It also suggests that in the United States, where "Christian Science" has more followers than with us, life insurance companies will do well to take it into account in their policies, while even in London this society eccentricity may some day have to be reckoned with by such associations. In England considerable attention was not long ago attracted to "Christian Science" by the inquiries resulting from two deaths among its members, particularly from that which followed the death of Mr. Harold Frederic, the novelist, but the deliberate neglect of medical aid is usually associated in our minds with the prosecution of parents belonging to the sect known as the "Peculiar People." A husband and wife, for example, belonging to this last-named body were brought before Mr. Justice Bigham at Chelmsford in June owing to the death of a child who had died in spite of their obedience to the mandate of the 14th verse of the 5th chapter of the Epistle of St. James, and they were each fined £5. But the "Christian Scientists," appreciating the fact that the indulgence extended to fanatics of the uneducated class would hardly be extended to them, are, we believe, careful not to interfere with the treatment of children, at all events in cases which they believe to be dangerous. The perusal of an article by Mr. H. T. Marshall in the June number of the *Johns Hopkins Hospital Bulletin* (Baltimore, U.S.A.) shows the wide spread of "Christian Science" in the country of its origin, and so explains the necessity of the attitude adopted towards it by the Oddfellows referred to above. The writer, without suggesting what discount he would allow for the inflation natural to such figures, informs us that it is claimed that in the United States a million people have received "Christian Science" treatment, while its enrolled members are put at about half a million, which shows that the danger has there reached a point at which it must be taken seriously. Mr. Marshall proceeds to give an interesting criticism of the "religious" and philosophical dogmas propounded by Mrs. Mary Baker G. Eddy, the aged founder of "Christian Science," from the point of view of its bearing on "Christian Science" treatment, or rather neglect, of the sick, while he ends by pointing out the dangers to human life which may result and to suggest precautions by the community. Foremost among these he naturally places insistance upon the proper notification of births, deaths, and contagious diseases, for which of course there exists ample machinery with us—machinery which is put in motion without difficulty when occasion occurs. With us, however, the danger is not a serious one as in the States owing to the craze not having "caught on" to the same extent, while, as we have seen, the fear of prosecution has a restraining effect in the case of children. Besides which a little reliance on the good sense of the average Englishman and Englishwoman and a glance at the congregation as it files into the "Christian Science" services in London alike tend to reassure us. Among the phrases quoted by Mr. Marshall from the writings of Mrs. Eddy occur the following: "The daily ablutions of an infant are no more natural or necessary than would be the process of taking a fish out of water every day and covering it with dirt in order to make it thrive more vigorously thereafter in its native element." "When there are fewer doctors and less thought is given to sanitary subjects there will be better constitutions and less disease." The bearings of these observations, as Mr. Bunsby would have said, lie in the application of them, and applying them to the smartly dressed ladies who sing hymns to the accompaniment of a grand piano and are soothed by solemn rigmarole in the comfortably furnished room in Bryanston-street, which is the London centre of their body, we should say without hesitation that they have their babies "tubbed" and send for the plumber or mason when the soil-pipe gets blocked as if no such nonsense as "Christian Science" had ever been concocted to confuse their "mortal minds." To them such precautions are as "natural and necessary" as the toilette with which they adorn bodies that, according to their teacher, only exist in their diseased imaginations. Beyond this they are precisely the followers best suited for enrolment in a congregation which should consist of those blest with the variety of "matter" known to the uninitiated as money, and they are precisely the order of human being most likely to suffer from ailments that may be dealt with by mental suggestion, while they are the least likely to suffer from those more serious troubles for which mental suggestion hardly affords a palliative. "Christian Scientists," as Mr. Marshall tells us, undertake to cure every form of disease by inducing the patient to disbelieve in its existence and acquire faith in their God. When they venture to deal with a child too young to understand their jargon they proceed to "heal" him or her by convincing the parents that there is nothing the matter. Methods such as these are to some extent harmless where, in fact, nothing is the matter, and "cures" of apparently serious disease wrought in cases where mental suggestion might naturally be expected to be effective probably account for much of the faith undoubtedly established in many minds by "Christian Science" preachers and "healers." At the same time, danger may at any time arise in individual cases; for instance, it is obvious that a woman might well have it suggested to her a few days after childbirth that she was perfectly able to arise from her bed and go about her ordinary duties and pleasures, and might obey the suggestion with results beyond the power of "Christian Science" to persuade into non-existence. Still, considerable protection is afforded to children in this country, however silly their mothers may be, by the fear of criminal proceedings, while children and women alike find some protection in the authority of the male members of the family. Men are scarce in the "Christian Science" congregation, and fathers and husbands are apt to impose limits beyond which nonsense may not be carried in their households, although a humorous story was recently circulated of a gentleman who consulted a "Christian Scientist" healer owing to an accident having left one of his legs shorter than the other. The healer was charming and highly successful, but she unfortunately went abroad during the progress of the cure, being able to conduct it equally well at a distance, and when last seen her patient was despairingly hunting for her lost address, unable to warn her without it that the injured limb was not only restored to its proper length, but was already longer than the other and still growing.

## HORSE AMBULANCE IN LONDON.

AFTER the appearance of the article in the *Nineteenth Century* by the Hon. Dudley Leigh on Horse Ambulance for London, Mr. S. Osborn, F.R.C.S., chief surgeon of the Metropolitan Corps of the St. John Ambulance Brigade, wrote an article, a copy of which is now before us, in which is embodied a scheme for a complete ambulance

system for London, a scheme which in no way entrenches upon the very excellent work which is so ably undertaken by the above-mentioned Corps. It is a subject upon which he is well able to advise and not long ago he advocated its claim for urgent consideration before a specially convened meeting at the House of Commons. Whether an ambulance system for London should be under the control of the St. John Ambulance Association, the Metropolitan Asylums Board, or the London County Council was fully gone into by him, and he was able to show that it was only through the London County Council that the scheme could be efficiently carried out. He has been in communication for some time with this body with this object in view—viz., of grafting an ambulance system for London on to the Metropolitan Fire Brigade, by whom it could be easily horsed, housed, and supplied by alarm calls. The scheme has received the support of several members of the Council and one influential member has lately promised to take the matter in hand.

## MEDICAL INSPECTION v. QUARANTINE IN THE UNITED STATES.

OLD customs die hard, even in a country deeply imbued with the spirit of originality and progress, but nevertheless the principle involved in the English method of medical inspection of vessels is making a substantial advance in the United States of America. The State of New Jersey has recently passed a Bill framed to prevent the introduction into that State of communicable diseases by maritime vessels or maritime traffic; and although the local boards of health are by it invested with full powers of detention it is not difficult to detect between the lines that medical inspection, isolation, and disinfection are the principles which will govern the action of the State and local authorities. It is by a system of "permits" that infected vessels will be allowed to approach the ports of New Jersey. All infected vessels are to be "examined, cleansed, ventilated, and purified," and even vessels which have passed any quarantine station on Long Island or in New York Bay and obtained a written permit to proceed to New Jersey ports are not allowed to land their passengers or merchandise until such permit has been deposited with the local authority and another permit obtained. With regard to the prevention of yellow fever it is laid down by the regulations based upon the Acts referred to that from May 1st to Nov. 1st no person shall leave or go on board any vessel arriving from any port south of Cape Henlopen until a proper permit has been issued; and in respect of infectious diseases generally permits shall only be granted if the vessel be found free from the "infection of yellow fever, cholera, typhus fever, bubonic plague, small-pox, diphtheria, scarlet fever, measles, or other diseases of a contagious, infectious, or pestilential nature." Furthermore, it is not permissible to land straw or bedding from any vessel from any foreign port or place until it has been disinfected by exposure in a closed chamber to steam at not less than 240° F. for 30 minutes. It will be seen that in certain aspects these regulations go considerably beyond those in force in this country, and this is more particularly the case with respect to diseases other than cholera, yellow fever, and plague. As to small-pox, for instance, it is laid down that when any person arriving at any of the New Jersey ports has been exposed to the infection of this disease that person shall either be vaccinated or subjected to detention and isolation for a period not exceeding the incubation of the disease in question. This is a fair alternative, but it seems to us that some provision is necessary to meet the case of those who have been recently vaccinated. The prevention of small-pox infection by maritime channels is a most useful precaution, but in order that consistency may be maintained it is necessary that all trains and travellers passing into this State from outside should be similarly dealt with.

## THE CARE OF THE FEEBLE-MINDED.

FEEBLE-MINDED persons are to be found at all ages in every social class; their numbers are considerable, as shown by the reports of the Departmental Committee of the Education Board concerning children and a committee of the Charity Organisation Society. Many of these persons die young, but they survive in sufficient proportion to form an appreciable element among the adult population. The condition of these persons is in many ways a matter of importance to the public as well as to their friends. The work of caring for the feeble-minded and trying to benefit their condition is difficult and expensive, but it is an imperative duty and may yield unexpected benefits in valuable knowledge gained as to grades of brain power and scientific methods of increasing its growth while aiding mental development and removing causes of brain disorder by adapted training. Experience has shown the need of more accurate means of diagnosis and description of this class of case, and the many and varied conditions found among such cases, as also of studying the best methods of training, stimulating, and controlling deficient brains. Feeble-minded persons not certifiable as imbeciles should not be classed as or associated with idiots and lunatics; in fact, their intercourse with those of sound mental powers is desirable when practicable. The Commissioners in Lunacy are not responsible for those cases under public control as not being certifiable under the Lunacy Acts. The recent Education Act, 1899 (Defective and Epileptic Children), constitutes the Education Board the authority responsible for the inspection of the schools and special classes for defective children and for the distribution of the Parliamentary grant. We have received a copy of a memorial of the National Association for Promoting the Welfare of the Feeble-minded addressed to the President of the Local Government Board, asking that steps may be taken to institute an inquiry into the number and constitution of feeble-minded persons in receipt of Poor-law relief. Such an inquiry, conducted by competent medical men on lines settled beforehand, is very desirable. An example will be found in the report on 100,000 children examined by Dr. Francis Warner for a committee of the Charity Organisation Society and the British Medical Association. A recent conference of Poor-law guardians resolved that it is expedient that homes for the permanent protection of the feeble-minded should be multiplied throughout the country. We heartily recommend the proposal and would add that in every such home means should be taken also to promote the mental development of the inmates as well as to supply industrial occupations. The Local Government Board have in contemplation, it is stated, the preparation of a Bill providing for the better classification of inmates of workhouses and for the removal of imbeciles and epileptics; it is very desirable that in any such re-arrangements provision should be made for persons who are "feeble-minded" but not certifiable as imbeciles or lunatics.

## STREET NUISANCES.

IN our issue of July 7th, p. 39, we remarked that the police in the neighbourhood of the Strand, at any rate, did not seem to be taking advantage of the powers conferred by the new by-laws of the London County Council. We are glad to see, however, that on July 6th two newsvendors were summoned before Mr. Plowden at Marylebone Police-court for shouting. Their names were Foster and Blackman, but Foster did not appear. Blackman, in defence, said that

he knew of the by-law, but thought that it only applied when a private person made a complaint. Mr. Plowden is reported as saying that he hoped the by-law would receive the fullest attention from the police and that they would not hesitate to use their powers whenever the opportunity offered. It was a most salutary by-law and the offence was complete if a person shouted to the annoyance of anybody. Blackman would be fined 10*s*. We hope that Mr. Plowden's remarks will be laid to heart by the police, and especially by those of the C and E Divisions. Mr. Plowden is to be congratulated upon his change of opinions as to noises. His sympathy with the "natural noises of animal life"[1] evidently does not include the noise made by the "runner." We are glad to see, too, that on the same day a window cleaner was charged at the Guildhall with standing on a sill "more than six feet from the ground." This was the first case under the new by-law of the London County Council. The defendant pleaded ignorance of the law and was mercifully let off.

## THE ATHLETIC MASTER IN SCHOOLS.

A SHORT article in the *Contemporary Review* for July by Mr. H. J. Spenser, LL.D., is somewhat severe on the athletic master in schools and equally so on the headmasters who rush to engage the man who has achieved a reputation for mere physical prowess. Dr. Spencer bases his remarks very much on the legend of a noted "Blue," who on completing his century in a recent 'varsity match received five telegrams from as many headmasters offering him posts. He admits that in the majority of cases the headmaster tries to secure first the intellectual and teaching qualities which are the chief requisites in all schoolmasters, but is evidently of opinion that the temptation is strong and often yielded to to appoint a man for his popularity among boys, which is always best secured by the performance of physical feats. Dr. Spenser thinks not only that the athletic master is not necessarily a good teacher—rather the reverse; but he charges him generally with slackness in intellectual work or in promoting such work in others, with being untidy and unsystematic, with never condescending to small details in life, with no sense of obligation, and with being a tax on the forbearance and forethought of others. As he advances in life "his nights are usually devoted to cards, his clothes reek of tobacco, and the necessity for physical fitness is no longer cogent." He does not command the respect of his pupils, though on the field he may excite their admiration. He conveys to boys an utterly false view of the respective importance of work and play. There is much truth in this view of a certain type of athletic master. But we do not think the type is very common and we are not disposed to allow that even any serious minority of headmasters would be so unfaithful to their highest duty—that of selecting their subordinate—as to prefer men of mere physical fitness to those of intellectual and teaching aptitude. Undoubtedly the wise headmaster will have an eye to recreation and play, and of two men seeking work in his school, other things being equal, he will prefer the man who has some sense of the pleasure of physical life and activity—and rightly so. What boys in school need is an object lesson of the *mens sana in corpore sano*.

## RUSSIA AND THE PROBLEM OF INTEMPERANCE.

RUSSIA, like all other progressive countries, is feeling the necessity of facing the question of intemperance arising from the existence among its simple-minded and good-natured peasantry of innumerable dram-shops where alcohol of the lowest quality and coarsest description is served out to the poor. The diseases due to alcohol, including the loss of moral self-control, abound, and the people were bartering themselves as slaves to the dram-seller. We commend to the notice of our readers and to that of all who are contemplating temperance legislation in our own country the letter on this subject of our Special Correspondent at the Paris Exhibition which appeared in our issue of July 7th, p. 53. The Russian Government in 1894 commenced to take the sale of alcohol into its own hands. Mere dram-shops in many provinces have been abolished and no indemnity whatsoever has been paid to the dram-shop keepers. Profits made by the State from the sale of alcohol have been given to temperance committees to establish taverns or places of social intercourse, restaurants, reading-rooms, libraries, concert halls, lecture halls, and the like. It will be curious to watch the effects of this measure on the future of Russia. One great good will be the better nourishment of the peasantry, who will spend their money on sound food. A great decrease in drunkenness and crime is already reported.

## THE NEW ISLINGTON INFIRMARY, HIGHGATE HILL.

AN event of some significance and interest is to be honoured with the presence of Royalty on the 16th inst. at 4.30 P.M. Their Royal Highnesses the Duke and Duchess of York have kindly agreed to attend the ceremony of the opening of the Highgate Hill Infirmary connected with the parish of St. Mary, Islington. The ground is somewhat classic. The infirmary is built on the site of the old Small-pox Hospital where Marson did his immortal work in the observation of small-pox and of the effect on it of vaccination. But the new institution has an importance of its own. It is meant for the sick of this large parish—the most populous in the kingdom. Unfortunately pauper sickness seems to grow even faster than the population and to require for its treatment something very different from the old workhouse accommodation for paupers. We shall probably give our readers some details of the new institution next week. Meantime it is noteworthy that the Duke and Duchess of York should graciously show their concern for the welfare of the sick poor by their presence at the opening ceremony.

## THE HOUSING PROBLEM IN RURAL DISTRICTS.

PART III. of the Housing of the Working Classes Act, 1890, has not up to the present been made much use of in rural districts, and an inquiry which has recently been held by the Essex County Council into an application on the part of the Malden Rural District Council to adopt this part of the Act has brought out some interesting points. The proposal is to erect a dozen cottages at Bradwell-on-Sea, at which place there are 121 occupied cottages. Of these cottages 22 have one bedroom, 77 two bedrooms, and 22 three bedrooms; but of the total 121 only 18 are regarded by the local surveyors as being in good condition. The district council are proposing to erect 12 cottages at a cost of £2500, including the land, and the surveyor estimates that at a rental of 3*s*. a week an annual loss of £50 would fall upon the rates. The county council commissioners think, however, that this figure is below the mark and that £60 more correctly represents the truth. There seemed, indeed, to be a feeling at the inquiry that under no circumstances could a higher rent than 3*s*. a week be paid for the cottages, while others thought a rental of 1*s*. 6*d*. should suffice. The commissioners point out that this question of rental is obviously the crux of the position and that under the present system the cottages attached to farms are frequently let considerably below their proper rental. In this

[1] THE LANCET, Jan. 28th, 1899, p. 276.

connexion they relate the evidence of one of their witnesses to the effect that a certain land-owner built for the use of a farmer two cottages at a cost of some £400; the farmer pays rent at 4 per cent. on the outlay in addition to doing repairs and paying rates and taxes. The annual expenditure of the farmer on these cottages is about £22—i.e., about 4*s*. 6*d*. per week for each cottage—but the rent which he charges his labourers is but 1*s*. per week—i.e., the men's wages are 3*s*. 6*d*. in excess of the nominal figures. The commissioners condemn this indirect method of payment and urge that if the farmers would increase the men's wages and charge the full rent some inducement might be offered to private building enterprise. The application of the district council is, it appears, likely to be granted and the experiment will be watched with interest by all those anxious to bring about a better state of affairs in some of our rural districts.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND: ANNUAL MEETING OF FELLOWS.

THE annual meeting of Fellows was summoned for Thursday, July 5th, at 5 P.M., but the election of members of Council delayed the entrance of the President, Sir William Mac Cormac, Bart., K.C.V.O., for about ten minutes. As, however, the number of Fellows required to form a quorum, 30, were not present, the President waited a quarter of an hour, and at the end of that time rose and declared that no meeting could take place as only 18 Fellows were present. He further pointed out that at the three previous meetings summoned no quorum had been obtained, so that the minutes of July, 1897, had not been yet confirmed. Until this year two meetings had been summoned yearly, but in 1899, in consequence of the repeated failures in getting a quorum, the Council had decided to call only one meeting each year. As it appeared that the Fellows were not sufficiently interested in these meetings to care to attend it might be possible that the Council would decide to do away with fixed meetings of Fellows and would themselves call a meeting when it appeared advisable, or on the requisition of a certain number of Fellows. We fear that the privilege of meetings of the Fellows, obtained after so much exertion, will shortly be withdrawn by the Council. The only agenda were three motions by Mr. R. B. Anderson.

Mr. H. Lockwood and Dr. A. H. Downes, Local Government Board inspectors, on July 10th opened an inquiry at St. Pancras Vestry Hall into the alleged irregularities which have recently taken place with regard to the certification and removal of lunatics.

SIR H. BLAKE, the Governor of Hong-Kong, in a telegram to Mr. Chamberlain received at the Colonial Office on July 9th, 1900, reports that 65 fresh cases of plague and 68 deaths occurred last week.

A CIVIL list pension of £50 has been granted to Mrs. Eliza Arlidge in consideration of the labours of her late husband, Dr. John Thomas Arlidge, in the cause of industrial hygiene, and of her straitened circumstances.

PRESENTATIONS TO MEDICAL MEN.—Mr. James C. M. Kinnear, M.B., C.M. Aberd., of Laurencekirk, Kincardineshire, on the occasion of his leaving the district, has been the recipient from his friends of a gold Albert chain and pendant.—Mr. T. Macdonald, M.B., C.M. Edin., has been presented with a centre-piece by the Highland Railway Ambulance Class, Inverness, in appreciation of his ambulance instructions.

# THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

*New Nationalities.—Scientific, Medical, and Surgical Exhibits of Hungary, Italy, and Switzerland.*

ONE of the practical services rendered by Universal Exhibitions is that of revealing to civilisation the advent of new nations in its midst. Take, for instance, the Universal Exhibitions from the one held in Hyde Park in 1851 down to that apotheosis of the Second Empire, the first Universal Exhibition held in the Champs de Mars in 1867—up to that date there was no Hungary. Now, on the contrary, excepting the Trocadéro which is devoted exclusively to colonial exhibits, the horizontal tricolour of Hungary may be seen proudly displayed in all directions. Though now a thousand years have elapsed since Arpád and his mystic seven chiefs led the Magyars to the borders of the Tisza and the Danube, Hungary as a modern and independent nationality does not date back further than to the Austro-Hungarian compromise of 1867. But what giant strides have been made since that date, the nation accomplishing in each succeeding decade the work of a century. For instance, and as indicating the spread of intellectuality, there were but nine printing firms at Budapest in 1848, and 10 years after the re-establishment of the Constitution of 1867 there were 51 printing establishments in the capital and 198 in the provinces. To-day there are 660 printing firms in Hungary, of which 147 are at Budapest. Whereas in 1868 only 50 per cent. of the children went to school, now the school attendance is equal to 80 per cent. of the juvenile population. These primary schools to-day cost 38,182,306 crowns per annum, instead of 7,520,246 crowns, as in 1868. In the same interval the State subventions to schools have increased from 1,500,000 crowns to 10,000,000 crowns. For secondary education the cost has increased from 6,741,000 to 20,000,000 crowns and the number of pupils from 36,569 to 56,441. The University at Budapest had 96 professors in 1867 and 295 professors in 1899. In many other directions similar progress is to be noted and the result is manifest by the large share that Hungary has taken in the present Universal Exhibition. Naturally medical education has had its place in this general progress and development, and of the many public works undertaken some relate to water-supply, drainage, hospitals, clinics, university buildings, and other services bearing on the preservation of the health of the nation. Not least among these are the improvements in agriculture, as they tend to increase the food-supply and the cost of the necessities of life. All this is made manifest at the exhibition not only by the exhibits themselves but by numerous explanatory pamphlets and a special and semi-historical catalogue of the Hungarian exhibits published by the Royal Hungarian Commissariat.

The Hungarian section in the department of the Exhibition devoted to letters, arts, and sciences is compact and well organised; it is easily accessible, its situation being in the western wing of the main building on the Champ de Mars. Care has been taken to show that every encouragement is given to the study of the sciences, and the various Hungarian institutes created for this purpose have their exhibits. Thus the Hungarian Institute for the Study of Forensic Medicine, which is under the direction of Dr. B. Kenyeres, exhibits stereoscopic photographs of wounds and other injuries that were the subject of legal investigations. The Anatomical Institute of Topogr has a very fine display of bones, while the Botanic Institute, managed by Professor Istvanffy, has models of plants artistically prepared and some plants preserved in alcohol. Professor Leschner's clinique for mental diseases sends a cephalograph for mapping the convolutions of the brain in relation to the walls of the skull. Then there are the exhibits of the schools of anatomy and notably that of the Budapest Faculty of Medicine—sections of the pelvic region, the circulatory system, &c. But what strikes the eye first is a large collection of models of human teeth. These are from four to five inches in length and are most carefully painted, so that the appearances in caries and various other diseases are readily perceived by reason of the exaggerated size of the models. The teeth are held up by a brass frame and in the lower part, the leg or stem of the frame, there is space for the

introduction of a circular piece of paper about an inch and a half in diameter. In this medallion are drawings or enlarged photographs of the specific microbe associated with the disease which the model tooth above illustrates. There is likewise a large assortment of apparatus used in the schools of chemistry. The first group of apparatus deals with the classic demonstrations, the second with the analysis of gases, and the third with scientific researches, the last-named including spectroscopic analyses. A neat little pamphlet with good illustrations is given by the attendants to those visitors who seem to take a serious interest in the subject, and it contains full explanations.

Another pamphlet gives many details concerning the ophthalmological clinic of the Hungarian Royal University at Budapest. This clinic was founded in 1801, but it was then part of the surgical teaching and it was only in 1867 that its present active and separate existence began and that a chair of ophthalmology was created. Yet as far back as 1770 Professor Joseph Plenk delivered a separate course of lectures on ophthalmology at the University of Nagyszombat and in 1780 an annual grant of 200 florins was given so that such lectures might be continued. In 1801 the first ophthalmological clinic was created. It consisted of two rooms and six beds. One of the earliest teachers of ophthalmology at Budapest, Le Febure, Baron of Saint-Ildefont, won so great a reputation that he was appointed in 1790 by Louis XVI. as surgeon to the Court of France. He was the author also of some well-known works on the subject. In 1813 a law was enacted by which no one was allowed to call himself an oculist unless he possessed the diploma of doctor and surgeon and had obtained from the professor of ophthalmology a first-class certificate which was only given after two examinations, the first on theory and practice and the second on operations. The growth of this branch of surgery may best be realised by the following comparative figures. There were at the ophthalmic clinic of Budapest 507 out-patients and 87 in-patients during the year 1850. In 1898 there were 8963 out-patients and 983 in-patients. The record of operations does not seem to go further back than the year 1875, when 291 ophthalmic operations were performed; these increased to 1171 in 1898. Professor William Schulek, assisted by a numerous staff, is now the director of this clinic, which is located in the central block of the Faculty of Medicine. A plan is given of these extensive premises. The ground floor is devoted to the out-patients, the consulting and operating rooms, &c., and on the upper floor there are beds for 60 patients, isolation rooms for contagious cases, baths, &c. Thus a detailed idea of the hospital arrangements and the facilities for medical and surgical education which exist in Hungary can be obtained without going any further than the Paris Exhibition. Then there are also large diagrams prepared by Professor A. Hogyes setting forth what has been accomplished by the Pasteur Institute of Budapest. These include coloured maps of Hungary which indicate the prevalence of rabies in the different counties for many years. From this it appears that 9023 persons were bitten and suspected of rabic infection during the period 1890 to 1897. The cases of rabies that ensued numbered 283, or 3·13 per cent. of the persons who had been bitten. Of these persons 7528 were inoculated, of whom 117, or 1·55 per cent., had rabies. Of the 1495 persons who were not inoculated 166, or 11·10 per cent, had rabies. Of the 7528 persons who were inoculated 53 could not receive the proper or complete treatment: 22 fell ill while undergoing the course of inoculations, and 31 within 15 days of the last inoculation. Consequently it is claimed that though 7528 persons were treated, those who were treated in time numbered 7475. Of this latter number only 64 suffered from rabies and therefore the proportion of those who were fully and properly treated and who nevertheless were victims of the rabic poison amounted to only 0·85 per cent., instead of 1·55 per cent. Behind these statistics of the Hungarian Pasteur Institute are a number of oil-paintings representing the coats of the stomach during and after injections of cold water, of warm water, of mineral waters, and of water containing solutions of different acids or Karlsbad and other salts. These were taken with the Leiter-Mikulicz apparatus by Dr. Charles Morelli. There are also a few surgical instruments and orthopædic apparatus, &c., and then we come to the exhibits of the Hungarian crafts as taught in the technical schools.

Facing the Hungarian section in this department is that of Italy, a nation which is at once so old in history and yet so young as a modern and united kingdom. Here the visitor is constantly greeted by the characteristic sounds of music from guitar and mandolin, while a large photograph of the ruins of the Roman Forum and reproductions of the best Italian Old Masters give local colour to the section. On a broad table are piles of very artistic and cheap photographs of Italy, its ruins and its best paintings, so that the visitor may take away with him a suitable souvenir. But there is very little in this section of special technical interest. There are a few artificial teeth, a gymnasium, and some rough, cheap school furniture. Among the latter there are a desk and seat, which can not only be raised or lowered according to the size of the pupil, but the board on which the feet are placed can also be raised several inches. Thus the children may be lifted up all to the same height and a small boy would be able to see even though a big boy might be in front of him. Also the raising of the feet from the floor may be of use in case of dampness or draughts and thus the feet can be kept dry and warm. Close by Dr. C. Ghillini has an orthopædic measuring apparatus. In front there is a large pane of glass which is ruled in squares of a centimetre each. Behind the glass there is an upright nickel staff with moveable arms attached. One arm is placed above the head of the patient and measures his height; two arms hold each side of the head, whilst other arms press against the side of the body and their points reach the ruled glass in front. With their aid a life-size drawing or tracing can be made on the glass indicating the deviations rapidly and accurately. That was about all of a technical description which I noticed in this section. The exhibits of the Italian universities and the reports, drawings, &c., of public works bearing on public health are to be found in the gallery inside the Italian Palace in the Avenue of Nations.

Crossing the main passage again the exhibits of Switzerland are next to those of Hungary. Here also we find appropriate music, for there is a room surrounded with musical boxes which in turn play well-known and popular melodies, and it is not necessary to remark that the musical box is essentially a Swiss speciality. In the next compartment is another but a much better and more elaborate collection of school furniture. The desks, being larger, suggest plenty of elbow-room, and they enable the visitor to realise that the Swiss in respect to primary education have set an example to all Europe. Then there is a delightful room, with a comfortable velvet settee in the centre, where the weary investigator finds a welcome resting-place while he contemplates the surrounding gorgeous array of coloured photographs of Swiss alpine scenery. Here, too, there is a big table where all that Switzerland gives us in the form of photographic souvenirs can be cheaply purchased. Having rested in this cool, shaded compartment, which to the exhausted visitor will appear as a real oasis, he will find outside enlarged photographs of the human fœtus compared with that of a chicken. They are hung on a partition that is in a somewhat obscure corner and away from the general traffic. There is also the fœtus of a snake as compared with that of a chicken and some very remarkable and minute skeletons of the human fœtus which have been preserved by Dr. Eternod of the Geneva University. Close at hand Professor Emile Young exhibits beautiful specimens to demonstrate the morphology of anthropodes and the visceral anatomy of vertebrates. Then Messrs. Reymond Frères of Geneva have a large assortment of dental chairs, furniture, &c., and apparatus for making plates, casts, and other things connected with artificial teeth. M. J. Heinz of Bâle has an extensive exhibit. The first compartment represents an operating room. The operating table is of nickel, in three moveable parts, and is drained by a central groove. The instrument case or cupboard is of glass and metal; one side of the door fits into a groove on the other side and at the bottom of the groove there is a soft material which on being pressed tightly prevents any ingress of dust. Some of the tables are of porcelain on metal legs, but the porcelain, though beautifully smooth and bright on the upper surface, is rough and unpolished underneath, so that dust can adhere just where it is least likely to be seen. There is an apparatus that looks like the back or head of an iron bedstead; its two legs are on wheels. This can be affixed to the ends of a bed that is not on castors. By a lever arrangement the bed can be raised an inch or two from the floor, and then it rests on the wheels of the apparatus and

can be rolled along without disturbing the patients. Thus if there is a hospital where none of the beds have castors or wheels a couple of these contrivances will in a moment supply temporary wheels to any bed which it is necessary to move. But perhaps the most interesting exhibit is a sectional drawing illustrating the ventilation of an operating-room. Here a large space under the floor is devoted to this purpose. First, there is an air filter, then a fan propellor. After these there are a compartment for heating the air, a pulverised spray for moistening, and, finally, the shaft for delivery into the operating-room. Thus the amount and the quality of the air supplied can be regulated and does not depend upon the accident of outside meteorological conditions. Facing these objects Messrs. Fr. Klingelfuss and Co. of Bâle show electric apparatus used in dental surgery and for the examination of the throat, the nose, and the ears, as well as for cauterising, &c.

Messrs. Knœbel and Laubscher, also of Bâle, exhibit a large assortment of surgical instruments manufactured in Switzerland and some bronze aluminium thread for sutures which has attracted some attention. Next to these are the very interesting exhibits of bandages, &c., manufactured by M. H. Russenberger, of Geneva. The absorbent or hydrophile cotton-wool shown here raises important technical questions that merit careful attention on the part of operating surgeons. As a rule, this cotton-wool is made with the cotton-waste purchased from the mills. If such cotton were properly purified there would be no harm in its employment, but it not unfrequently contains as much as 5 per cent. of chemical waste products from the mills. For surgical purposes the safest plan is to employ, as in this case, virgin cotton imported direct from America. Apart from its greater purity it is not injured by manipulation, therefore the fibres are stronger and of greater length. Also there is a larger volume for equal weight and it is more elastic. A band made of virgin cotton-wool does not break so readily and therefore it is easier to dress a wound. A band of cotton-wool of this description is shown. It is some four feet in length and one and a half inches wide. Suspended by one end from the top of the case or stall it has, at the other end, a weight of one kilogramme; yet unless violently shaken it will not break. But the chief object is a rapid and large absorption. Formerly this property was tested by placing a little of the wool on the surface of a basin of water and watching how long it would take before it became immersed. M. Russenberger proceeds in a more conclusive manner. He takes a test-tube and places some coloured liquid at the bottom and then fills up the tube with the cotton. The height to which the coloured liquid travels and its penetration into the centre of the cotton show in a more certain manner the absorbent qualities of the latter. By these means is effectively demonstrated the superiority of virgin cotton to that of the waste cotton from the mills. Another point is the use of boric acid in cotton-wool dressings. Lord Lister has said that there should be from 50 to 60 per cent. of acid, but cotton-wool thus impregnated cakes and is difficult to use. This is due to the fact that the wool is soaked in a hot solution of the acid. Consequently a great deal of wool sold only contains 10 per cent. of boric acid. In the present instance the wool is impregnated by sprinkling the acid in a powdered condition and then passing steam through. But even by these means a sufficient quantity cannot be mixed with the wool unless it be by a cumulative process. Therefore the operation is repeated several times, and thus at last a cotton-wool bandage is obtained that contains 50 per cent. of its own weight of boric acid. So, also, instead of using glycerine to fix antiseptic powders on bandages, this is likewise done by a process of pulverisation. Glycerine is not always a suitable substance and, for instance, it will turn airol red when exposed to light. Then there is the question of sterilising wool, bandages, &c. What is the good of this precaution if after sterilisation the substance treated is to be brought into contact with the atmosphere, touched by the hand, and packed up in parcels? The bandages, &c., here exhibited are not thus exposed, but are first packed in parchment and then sterilised by steam under pressure. After a time the steam is turned off and nothing is touched till all is quite dry. The articles are then put into a second envelope and must not be opened till they are required for use. So that the operator may be satisfied that the sterilisation has been complete a small tube containing the loose powder of phthallic acid is placed in the centre of the packet. If this powder, instead of being loose, is found adhering to the side of the tube this proves that it has been exposed to a heat of 129° centigrade. Such are some of the technicalities of the scientific preparation of bandages, &c., as exhibited in the Swiss section. Before leaving this section I should not omit to mention a portable operating table devised by Professor Auguste Reverdin of Geneva especially for the use of rural practitioners. It weighs in all 15 kilogrammes. The legs are of hollow cycle tubing and fit into each other in a telescopic manner. The whole can be neatly packed and carried like a portmanteau. There is also another non-portable table consisting of three hollow parts that can be filled with warm water to prevent the patient suffering from cold. After examining these technicalities the visitor will perhaps be pleased to terminate his inspection and to rest himself by contemplating large plaster-cast models of the Swiss Alps.

Paris, July 9th.

## THE WAR IN SOUTH AFRICA.

FROM a military point of view there has not lately been much to record. The enemy's troops can scarcely be regarded now as really organised forces and the fighting has assumed the type of guerilla warfare. The telegrams from South Africa show that the campaign is slowly but surely drawing to a close. The Boers are evacuating strong positions to take up others, and that alert and clever tactician, De Wet, still manages to slip out of our grasp with his troops. It is singular how seldom we seem to take any large number of Boers as prisoners or capture their guns. What has become of their artillery?

There is a widespread prevalence of enteric fever among our troops in South Africa. This fever is the scourge of all modern warfare and we are afraid it will continue to be so. Although typhoid fever is classified as a preventable disease it is uncommonly hard to prevent it under all the conditions of war. The more rapidly a campaign can be conducted the better for everyone, but the harder it is on all sanitary, transport, and supply departments. The mortality statistics of enteric fever in South Africa compare favourably on the whole with those of other wars or of India. A reference, too, to the statistics of the London Fever Hospital and to those of the Metropolitan Asylums Board will show that the percentage mortality at the army ages of soldiers is in excess of the average for all ages and this has, of course, to be borne in mind.

If the campaign in South Africa has from a purely military standpoint reached a dull stage of late as compared with the earlier and more exciting periods of its history this cannot be said of its medical aspects, for we are living in the clash of contentions and contradictory statements. About one thing, however, there can be no doubt, and that is that while there is an overwhelming amount of enteric fever at certain places the disease seems to be more or less prevalent everywhere in South Africa at the present time. It would be comparatively easy to deal with it if it were only known beforehand where the incidence of sudden and severe outbreaks was likely to occur, which is just what cannot be done. South Africa as a whole is of some 442,000 square miles in extent, and although the theatre of war has not this area it nevertheless occupies a very large one and the available means of communication are very limited for the great number of troops in the field. There was not long ago an epidemic of typhoid fever at Maidstone and to provide the requisite number of suitable hospitals and trained nurses for it was by no means an easy task, notwithstanding that Maidstone is not far from London by rail. How much more difficult must it be to do so in the case of epidemic outbreaks on a large scale in Africa, for they must be trained nurses to be of any good in the case of typhoid fever patients; untrained attendants, however well disposed, would be more likely to prove an encumbrance than otherwise. Where are all these trained nurses to be had? However, a commission will soon be constituted and sent out to South Africa to inquire into the sickness and medical arrangements there. We can quite appreciate the force of Lord Roberts's request that some of its members should be persons of strong common sense.

The last issued official return of the War Office shows the total casualties since the beginning of the war up to the end of last week, but exclusive of sick and wounded men in

British hospitals in South Africa, to be 30,693. The list is made up as follows:—

| — | Officers. | Non-commissioned officers and men. |
|---|---|---|
| Killed in action ... ... ... ... ... ... | 255 | 2,411 |
| Died from wounds ... ... ... ... ... | 70 | 625 |
| Missing and prisoners (excluding those who have been recovered) ... ... ... | 59 | 1,927 |
| Prisoners died in captivity ... ... ... | 1 | 84 |
| Died from disease ... ... ... ... ... | 137 | 4,393 |
| Accidental deaths ... ... ... ... ... | — | 68 |
| Sent home as invalids ... ... ... ... | 916 | 19,742 |
| Total ... ... ... ... ... ... | 1438 | 29,255 |

(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

Bloemfontein and enteric fever are synonymous at present, though I am glad to say we are gradually getting the best of it; it has, however, been a hard fight and many have gone down in the contest. When I tell you that besides the three big general hospitals, Nos. 8, 9, and 10, which have been accommodating any number between 1000 and 1500, there are the Langman, the Irish, the Portman, the Radzali, and the Volkes Hospitals, all more or less full up, it will give your readers some slight idea of the work of the medical staff during this campaign. Few people will realise unless it is explained to them, that each of our big general hospitals is treating at present nearly double the number of patients that can be accommodated at University Hospital or St. Mary's Hospital, and when the thousand and one other duties that are absolutely necessary are taken into account, such as rations, supplies, conservancy, and the internal economy of the various units of the Royal Army Medical Corps, St. John Ambulance, and the Cape Medical Staff Corps, to say nothing of the vast army of regimental orderlies who are doing duty in place of our own men who are ill or invalided, I think it will be acknowledged that life out here at present is not all rose coloured. The climate is excellent—cold and frosty in the mornings and evenings and comfortably warm during the day; and were everything else equal it ought to be an ideal spot for invalids and convalescents.

When I left Cape Town the only general hospitals left were Nos. 1 and 5, all the others having gone up country, and by the time you get this I hope our own may be also at Pretoria or Johannesburg. Of course, the number of surgical cases are now few and far between, but I expect the engagements that have beeen taking place round Pretoria will mean that we shall soon be having some more sent down. The great convalescent camps that exist here, at Norvals Pont, and at Springfontein are a great boon and enable men who, though seedy, are by no means so ill as to require to be sent to England, to pick up and rejoin after a brief stay. Two more new hospital trains, admirably fitted and equipped, have been added to the existing number and are performing excellent work, and besides these we have most comfortable saloon trains running at brief intervals for convalescent patients who do not require lying-down accommodation or special diet and nursing. Our number of nursing sisters is being augmented daily, and I cannot say too much for the way these ladies have been working under circumstances which, owing to the exigencies of warfare, must have been often disheartening in the extreme. Everyone speaks well of their devoted work, and no praise is too much from us who see them day after day and night after night going on steadily and earnestly in their labour of unselfish devotion to their duties.

As I predicted in my earlier letters disease has claimed far more victims than the Mauser bullets, and anyone who at the commencement of the war would have predicted that our sick would reach a total of over 10,000 would have been a true prophet, though he might at that stage of the proceedings have been discredited. As regards the enteric fever it is very difficult to say at present to what source it can be traced. It is undoubtedly endemic in Bloemfontein, which is not to be wondered at when one comes to look a little into the sanitary arrangements of the town, which are practically *nil*. The majority of our cases were transferred from the various field and stationary hospitals which seem to have brought them from the Modder and Paardeberg, where the disease was contracted during the stay of the troops in these localities. One of the worst features about this disease is that it absolutely unfits men for further duty for at least three months—which, of course, means that they must be sent home, the voyage being one of the main factors in the convalescent treatment which all these cases require. At present the line is blocked between this place and Kroonstad owing to the Boers having cut the communication, and several of the hospital trains and members of the staffs of the hospitals which are up at the front are temporarily detained here. Luckily there is plenty of excellent accommodation in the way of hospitals at both Pretoria and Johannesburg so that no inconvenience will be felt, and long ere you receive this the line will have been cleared. I shall not enter into any statistics regarding the enteric fever as you will doubtless have more extended reports than I have time to give you, but I can confidently state that the mortality does not exceed the average—in fact, when one comes to analyse the returns they certainly furnish a subject for congratulation as far as the mortality is concerned.

Bloemfontein, June 16th.

THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

We have had a terribly sad week since last I wrote to you owing to the death of two young officers, each of whom, though their ways lay far apart, had endeared themselves to many members of our camp. Early in the week came the bare statement, and even yet we have heard no details at all, of the death in action of Lady Chesham's son. Only a few weeks ago he passed through here on his way to the front for the first and last time and everybody who met him was won by his cheery good spirits and good heart. On the day we heard the sad news our chaplain held a memorial service, for a gloom was cast over the whole of our camp. But it was only the forerunner of another event the sadness of which came even more home to the staff and patients of this hospital, for in the death last Friday, June 15th, of Dr. R. T. Fitz-Hugh everybody here felt that they had lost a friend whose value they had had the opportunity of realising. He was one of the juniors among our medical officers, but his practice here among the patients had cemented the high opinions which had been formed at Guy's Hospital by his teachers no less than by his contemporaries from his earliest student days and which had been fortified by the high degrees he had taken at the London University. He was popular alike with his colleagues, with the nursing sisters, with the non-commissioned officers and orderlies, and with the patients. His career gave every promise of his attaining a very high place in his profession; but apart from his value to this hospital in his professional capacity he had many characteristics which had endeared him to those who knew him. He was a thorough sportsman, a prominent member of our cricket eleven, though perhaps best of all at Association football, in both of which sports he used to play for Guy's Hospital when he was a student. He was a man with a keen sense of humour and quite the most popular performer at the smoking concerts which do so much to keep up the spirits of our camp. One song of his in particular was so popular that however much he tried to satisfy the audience with others they never would let him leave the piano until he had given them their favourite Poor old "Fitz," as we always called him, will not quickly be forgotten by his friends. There was an enormous congregation at his funeral service, the first part of which was held in the church. All ranks of the hospital were largely represented and formed into a long procession to follow him to the cemetery about a quarter of a mile away. The coffin was carried by orderlies, and four of his fellow Guy's men acted as pall-bearers.

On the day that he died the entire staff was kept busy by the arrival of two trains full of sick and wounded, the first day on which we have ever experienced such a heavy "take in." The first train load was the earliest out of Mafeking. Poor fellows, they are thin! But you will hardly need me to tell you this, nor that they are plucky. I was much struck by the coolness displayed by one of the officers. He was shot

through the leg, and a few yards further on through the chest. That brought him down, but the Boers put two more bullets into him at forty yards' range while he was on the ground. He thought the best thing to do to save further damage was to sham dead. They came and looted his pockets and he found it very difficult to maintain the sham. Later he was taken into the Boer laager as one of the wounded, and the first thing he did was to protest against having been looted before he was dead! But this he did so eloquently that the Boer in command had his watch searched for and returned to him. Professor J. Chiene of Edinburgh came down with this train. The second train arrived from Wynberg and Senekal, and out of 96 occupants there were no fewer than 50 "stretcher" cases—i.e., patients so gravely ill that they had to be carried from the train to their beds. Many of the wounded from the latter neighbourhood presented a feature which was entirely novel to our experience in that they were burned more or less severely. It seems that our troops had had to advance through veldt fires. A few of them were burned in running through; others only got their burns when they fell to the ground wounded, but from the accounts of the survivors I fear that there must have been others again still less fortunate who, when they fell to the ground, were unable to move and were burnt to death. No. 3 hospital train, which brought the latter load, left again immediately for Mafeking, and Colonel Sloggett went up in it with the intention of bringing down all the rest of the sick and wounded from that place. Still lying there is a cousin of mine, Major Mullins, of the Imperial Light Horse, who, after being wounded through the shoulder at Elandslaagte early in the war and then being locked up in Ladysmith throughout the siege and having enteric fever in Intombi camp, formed one of the relief force and had the bad luck to get wounded in the back just before they got into Mafeking. Professor Chiene, who saw him in Mafeking, tells me that both legs were completely paralysed at first, but that now there is so much improvement as to warrant the hope that he may regain the use of both. I sincerely hope that Colonel Sloggett will find him and all the others still left in Mafeking—some 50 we were told—well enough to travel, in which case we shall have the pleasure of putting the splendid resources of this hospital at the service of all those who were laid up in Mafeking or wounded in its relief.

The blowing up of the railway north of Kroonstad has not really affected our material interests here at all, for most fortunately all three hospital trains (for a third one has just been improvised out of the ordinary saloon carriages with a kitchen truck in the middle) were south of that part at the time, and therefore their regular running has not been interfered with.

Professor Chiene was originally coming out as senior surgeon to the 100-bed Scottish Hospital recently established at Norval's Pont, but the day before he left home he was appointed a consulting surgeon to the Forces by the War Office in one of the vacancies created by the home-going of Sir William Mac Cormac and Mr. Treves. He stopped the whole day with us and I took him all round the hospital. He made a most minute inspection of everything and carried away, for the benefit of the Scottish Hospital to which he was going, a sample of any little device that struck him as novel. He was much fascinated, for instance, by the way buckets are improvised here out of empty oil cans. He and the two other medical men and the two sisters on the Mafeking train lunched and dined with us and he left again late at night, having expressed himself extremely pleased with everything he saw. The operating theatre, the laundry, the disinfectant house, and the latrines were the parts he admired most of all.

We have had to turn one of the smallest huts into a sick room for the sisters. They are so closely packed in the ordinary sisters' sleeping huts that it is extremely inconvenient there when one of them is ill. I am glad to say that there are no serious cases amongst them, but their work is very heavy now, and their sick room is in perpetual request for slight cases. Greenfield and Parker, the other two medical men who I told you had enteric fever, are both doing well. Three others of our medical staff have had to be admitted to the officers' ward during the past week, but we do not think that any of them have enteric fever. Exactly a quarter of the orderlies we brought with us are now sick in hospital. In spite of this attenuation of our staff we are still expanding our accommodation and have now 800 beds, although nearly a hundred of them are not occupied, 50 being reserved for our expected load from Mafeking, and from 30 to 40 we always keep vacant, as I have told you before, for chance arrivals.

Deelfontein, June 18th.

### IMPERIAL YEOMANRY BRANCH HOSPITAL.

(FROM A CORRESPONDENT.)

Before Mr. Burdett-Coutts's letter had appeared in the *Times* Lord Roberts telegraphed to London from Pretoria that he would like another Yeomanry hospital sent out if possible.

The committee, with their usual promptness, despatched four days after the receipt of the telegram the nucleus of the medical and nursing staff of a new hospital destined for Pretoria or Johannesburg or any other spot decided on by Lord Roberts. The remainder of the staff were under orders to leave Southampton a week later. The first departures consisted of F. M. Sandwith, M.D., F.R.C.P., who is taking a summer holiday from Cairo; W. Langdon Brown, M.B., assistant physician to the Metropolitan Hospital and casualty physician to St. Bartholomew's Hospital; H. Williamson, M.B., B.C., late house surgeon at St. Bartholomew's Hospital; and S. F. Crowther Smith, M.B., late house physician at St. Bartholomew's Hospital. The matron is Miss Nisbet of the East Dulwich Infirmary, who earned her first laurels at the Chalcis Hospital during the late Greek war. She left in charge of 11 nurses of the Royal Army Nursing Reserve, and the staff were accompanied by 81 orderlies, many of whom have had previous nursing experience. Most of the equipment will be provided on arrival at the Cape. The party is also accompanied by Colonel Lucas and Colonel Deane who are proceeding to South Africa to report upon the various Yeomanry units now serving at the war. The Yeomen already number over 11,000.

## JENNER INSTITUTE OF PREVENTIVE MEDICINE.

THE annual general meeting of the Jenner Institute of Preventive Medicine was held at Chelsea on June 29th, Lord LISTER, the President, being in the chair. Amongst those present were Sir Joseph Fayrer, Surgeon-General Hooper, Professor Greenfield, Professor W. G. R. Simpson, Dr. McCrury, Dr. Bridgwater, Colonel Addison, and Mr. S. G. Shattock.

The governing body reported that during the year the work of the Institute had continued to afford valuable results. The transference of Lord Iveagh's gift for the promotion of the objects for which the Institute was founded had been effected and the governing body which would in future control the affairs of the Institute had been constituted. Reference was made to the loss the Institute had sustained through the death of His Grace the Duke of Westminster.—The report of the TREASURER (Sir Henry Roscoe) was read and adopted.

The report of the DIRECTOR (Dr. Allan Macfadyen) stated that during the year the Institute's work had continued to progress. The following paragraphs are taken from the report: "The fitting up of the Chelsea building, which has occupied a good deal of my time during the past three years, is now completed with the exception of the museum. The foundations and footings on the vacant portion of the building site have been laid down, and this will facilitate building operations in the event of its being decided to proceed with the erection of the new wing. Amongst new features added during the year may be mentioned (1) a physiological room, (2) a room for incubating purposes, (3) a laundry, (4) a workshop, and (5) a cold-storage-room.

"Mr. Briggs has presented to the Institute a Hansen apparatus for yeast-culture and considerable additions have been made to the library. The first laboratory meeting of the Pathological Society of London was held at the Institute. During the year I visited the laboratories of Professors Behring and Ehrlich and those of Meister, Lucius and Brüning at Höchst. A second volume of the Institute's Transactions has been published. The volume contains 19 contributions and includes a paper

by Professor Ehrlich. Professor Welch of the Johns Hopkins University writes: 'I congratulate you upon the excellence of the scientific work recorded. Every paper is a genuine contribution of real value. The Institute is a splendid success and all English-speaking physicians have reason to be proud of it.'

"Three papers have been communicated to the Royal Society upon the influence of the temperature of liquid air and hydrogen upon bacterial life. The experiments were conducted with the kind coöperation of Professor Dewar and a further series is contemplated upon life at low temperatures. In conjunction with Dr. Morris and Dr. Rowland a paper has been submitted to the Royal Society on Expressed Yeast-cell Plasma (Buchner's 'Zymase'), a subject of considerable biological interest. The research has been the means of giving us a new method for triturating organisms. Systematic investigations are being carried out in the bacteriological department upon enteric fever, tuberculosis, and the etiology of cancer, with the coöperation of Dr. R. T. Hewlett and Dr. Rowland. Various investigations have been published during the year by Dr. Hewlett and other members of the staff. It is proposed to set on foot a systematic inquiry into the nature and origin of food poisons.

"A number of workers have utilised the laboratories for purposes of research during the year. Special investigations were carried out for public authorities during the year—e.g., upon tubercle in milk, glanders, anthrax, &c. The illustrations for the Transactions were prepared by Mr. J. E. Barnard in the photographic department of the Institute. Mr. A. Harden, chemist to the Institute, reports that he is continuing his investigations upon the chemical products of pathogenic and other micro-organisms. Dr. G. Harris Morris, lecturer on technical mycology, states that a number of students have utilised the facilities of the Hansen Laboratory, whilst researches upon yeasts, diastases, zymase, and other subjects of technical interest have been prosecuted. Dr. George Dean, in his report of the work of the antitoxin department, states: 'In connexion with diphtheria antitoxin many experiments have been made with the view of ascertaining the best conditions for obtaining powerful toxins and antitoxins and in testing the results claimed for the methods of other workers. The improvement in the strength of the toxins and in the method of immunising the animals has resulted in a higher average of antitoxic value being reached, so that the increased demand for this antitoxin has been successfully met. Several races of streptococcus pyogenes have been used in immunising horses with the view of obtaining a polyvalent serum. The War Office and several of the consulting surgeons who have gone to South Africa have been supplied with the tetanus and other antitoxins. Researches dealing with problems of immunity are in progress and papers have been published from the department upon the diphtheria bacillus and a new pathogenic streptothrix.'"

## THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS, PARIS, AUGUST, 1900.

THE following arrangements have been made for British members who wish to attend the Congress to be held at Paris from August 2nd to August 9th. The South-Eastern and the Chatham and Dover Railway Company will issue tickets to members and their wives, but not to their families, on presentation of their cards of membership at the reduced rate for return tickets of 58*s*. 4*d*. first-class and 37*s*. 6*d*. second-class *viâ* Dover and Calais or Folkestone and Boulogne, available for 14 days; by the 2.45 P.M. service from Charing-cross or Cannon-street *viâ* Folkestone and Boulogne, and by the 9 P.M. service from Charing-cross, Victoria, Cannon-street, and Holborn *viâ* Dover and Calais. Each ticket will entitle the holder to a free allowance of 56 lb. of luggage and will be available to return from the Gare du Nord at Paris by the 3.30 P.M. or the 9 P.M. services. Those who wish to return by the 9 A.M. service *viâ* Calais and Dover, or the 10.30 A.M. service *viâ* Boulogne, may do so on payment of 7*s*. 1*d*. first-class and 3*s*. 9*d*. second-class on board the steamers. The special tickets will be issued every day from July 21st to August 10th and will thus be available for those who wish to attend the Congress of Medical Ethics, the Congress of the Medical Press, the General Medical Congress, and the Congress of Hygiene.

The London, Brighton, and South Coast Railway Company will issue on application to the Continental Traffic Manager, London Bridge Terminus, a day or two in advance of departure, 14-day excursion tickets available from London or any station on the Brighton Railway to Paris at 39*s*. 3*d*. first-class or 30*s*. 3*d*. second-class to members of the Congress. The tickets can be made available for the day service and the availability can be extended to, say, 25 days if desired. These tickets allow a break of journey at Brighton or Lewes, Newhaven, Dieppe, and Rouen, both in going and in returning. Members who apply for these tickets are required to give proof of their membership and should make their cheques payable to the London, Brighton, and South Coast Railway Company, addressed to Mr. T. N. Wylie, the Continental Traffic Manager at the London Bridge Terminus.

The London and North-Western Railway Company state that parties of 30 or more passengers travelling to Paris this season from a station outside the radius of 20 miles from London (the party travelling together on the outward journey, but individually if desired on the homeward journey) will be charged the single fare and a quarter for the double journey from the North of England to London and back, *plus* the 14 days' excursion fares from London to Paris in force by the different routes beyond London. The tickets will be available for 16 days—i.e., 14 days between London and Paris and two days extra between London and the provincial station.

The Midland Railway Company are prepared to make a similar concession for parties of 30 and upwards travelling together from stations over 20 miles from London.

The International Sleeping Car Company, 14, Cockspur-street, Charing-cross, London, S.W., are the agents for the Trocadéro Hotels in Paris. These hotels are situated on the Quai de Passy and the Boulevard Delessert, immediately adjoining the Trocadéro section of the Exhibition. They consist of four separate blocks, and being constructed solely of stone are so designed that when the Exhibition is over they may be used as flats. The position they occupy is in many ways unique, and their immediate proximity to the Exhibition grounds renders them most convenient for visitors to the Exhibition, and this, on account of the excessive charges made by the Parisian "cochers" for cabs, is a consideration. The hotels are pleasantly situated, two of the four blocks being on a level with the Quai de Passy, whilst the other two are on a level with the Boulevard Delessert, separated from the lower ones by a large garden and a series of terraces with fountains. The second floor of the two upper buildings is about on a level with the fourth floor of the two lower ones, so that the view over the Seine and over the whole of the Exhibition is the same from every part of the hotels. At present visitors are able to obtain bedrooms with one bed at from nine to 16 francs and double bedrooms at from 15 to 28 francs per day, including lights and attendance. The tariff for visitors *en pension* varies between 16 and 23 francs per head a day according to the floor and the aspect of the room occupied. These prices include bedroom, electric light, attendance, breakfast, luncheon, and dinner with wine, or beer, or mineral water, or milk. Early application, however, is now necessary and should be made direct to the Manager of the Sleeping Car Company, 14, Cockspur-street, S.W.

At Paris special rooms will be set apart on and after Monday, July 30th, for the use of the national committees of each country which may be used as a rendezvous for each nationality. These rooms will be in the buildings of the Faculté de Médecine. A postal telegraph office will also be opened at the Faculté de Médecine where members will find their letters and telegrams if they are addressed as under:—"Dr. ———, Member of the Thirteenth International Congress of Medicine, Paris."

STATE OF THE MORTUARIES AT DEVONPORT.—At an inquest held at Devonport on July 2nd the coroner described the Pottery Quay mortuary as a scandal and considered it his duty as coroner of Devonport to point out the disgraceful condition of things with regard to the mortuaries of the town. He added that the feelings of those who had had relatives placed there must have been very harrowing.

# THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to noon on Wednesday last, when the total was over £40,000 :—

| | £ | s. | d. |
|---|---|---|---|
| Temple Church | 115 | 0 | 0 |
| St. Mary's, Bryanstone-square | 269 | 0 | 0 |
| St. Paul's, Avenue-road | 121 | 0 | 0 |
| St. Luke's, Rutford-place | 115 | 0 | 0 |
| Holy Trinity, Knightsbridge | 126 | 0 | 0 |
| St. James's, Clapham-park | 100 | 0 | 0 |
| Christ Church, Gipsy-hill (morning collection) | 105 | 0 | 0 |
| St. Peter's, Brockley | 116 | 0 | 0 |
| St. Marylebone Parish Church and Chapel | 203 | 0 | 0 |
| St. George's, Hanover-square, and St. Mary's, Bourdon-street | 156 | 0 | 0 |
| St. John's Presbyterian Church, Forest Hill | 107 | 0 | 0 |
| St. James's, Paddington, Parish Church | 130 | 0 | 0 |
| St. Martin-in-the Fields | 212 | 0 | 0 |
| St. Peter's, Vere-street | 422 | 0 | 0 |
| Christ Church, Wimbledon | 100 | 0 | 0 |
| Per Canon Haygarth, total | 206 | 0 | 0 |
| Trustees of the late Wm. Rankine | 100 | 0 | 0 |
| Miss Emily Old | 25 | 0 | 0 |
| Mr. Charles Edwin Layton | 21 | 0 | 0 |
| Mrs. Charles Edwin Layton | 21 | 0 | 0 |
| St. Mary's Old Church, Stoke Newington | 30 | 0 | 0 |
| "In Memoriam," Crosby Lockwood | 20 | 0 | 0 |
| Bromley (Kent) Presbyterian Church | 20 | 0 | 0 |
| Brixton Congregational Church | 59 | 0 | 0 |
| St. James's, Camberwell | 30 | 0 | 0 |
| St. James's, Garlickhithe | 28 | 0 | 0 |
| St. Matthew's, Brixton | 51 | 0 | 0 |
| Vintners' Company | 21 | 0 | 0 |
| St. Ann's, Wandsworth | 46 | 0 | 0 |
| Belgrave Church, Halkin-street | 22 | 0 | 0 |
| Finchley Parish Church | 27 | 0 | 0 |
| St. Paul's, Upper Holloway | 26 | 0 | 0 |
| Harrow Weald Parish Church | 26 | 0 | 0 |
| Orange-street Congregational Church | 22 | 0 | 0 |
| Gower-street Baptist Church | 20 | 0 | 0 |
| Putney Parish Church | 40 | 0 | 0 |
| St. Mary's, Cuddington, Parish Church | 35 | 0 | 0 |
| St. Mary's, Shortlands, Kent | 51 | 0 | 0 |
| St. Paul's, Great Portland-street | 66 | 0 | 0 |
| St. Philip's, Regent-street | 27 | 0 | 0 |
| St. Anne's, Highgate-rise | 22 | 0 | 0 |
| St. Jude's, Upper Chelsea | 27 | 0 | 0 |
| Brondesbury Baptist Chapel | 21 | 0 | 0 |
| High Beech Church | 26 | 0 | 0 |
| St. Peter's, Clapham | 26 | 0 | 0 |
| St. John the Evangelist, Westminster | 80 | 0 | 0 |
| St. Peter's, Ealing | 27 | 0 | 0 |
| St. Mary's, Monken Hadley | 34 | 0 | 0 |
| Christ Church, Chislehurst | 43 | 0 | 0 |
| Christ Church, Newgate-street | 47 | 9 | 0 |
| The Collegiate Church of St. Saviour, Southwark | 29 | 0 | 0 |
| St. Luke's, Hornsey | 24 | 0 | 0 |
| Northwood (Middlesex) Parish Church | 25 | 0 | 0 |
| Christ Church, Southwark | 46 | 0 | 0 |
| Metropolitan Tabernacle | 43 | 0 | 0 |
| West Wickham Church and Mission | 43 | 0 | 0 |
| St. Mary Boltons | 65 | 0 | 0 |
| St. Augustine's, Queen's-gate | 72 | 0 | 0 |
| West Wickham Churches | 43 | 0 | 0 |
| Great Stanmore Parish Church | 33 | 0 | 0 |
| Merton Parish Church | 26 | 0 | 0 |
| Church of the Annunciation, Chislehurst | 77 | 0 | 0 |
| St. Stephen's, Hampstead | 22 | 0 | 0 |
| St. James's, Clapton | 26 | 0 | 0 |
| Keston, Kent, Parish Church | 27 | 0 | 0 |
| Leytonstone Congregational Church | 25 | 0 | 0 |
| St. Paul's, Wimbledon-park | 43 | 0 | 0 |
| Nutley-lane Church, Reigate | 22 | 0 | 0 |
| St. John's, Redhill | 42 | 0 | 0 |
| Beckenham Parish Church | 65 | 0 | 0 |
| Bromley Parish Church, Kent | 66 | 0 | 0 |
| Crouch-hill Presbyterian Church | 41 | 0 | 0 |
| Roupell Park Wesleyan Church | 22 | 0 | 0 |
| Central Hill Baptist Church, Upper Norwood | 87 | 0 | 0 |
| Chapel Royal, St. James's Palace | 70 | 0 | 0 |
| St. Andrew's, Leytonstone | 61 | 0 | 0 |
| St. Mary's, Hornsey Rise | 27 | 0 | 0 |
| Christ Church, Brondesbury | 38 | 0 | 0 |
| Clapton Park Congregational Church | 25 | 0 | 0 |
| St. Gabriel's, Warwick-square | 54 | 0 | 0 |
| Christ Church, Hampstead | 74 | 0 | 0 |
| Guards' Chapel, Wellington Barracks | 48 | 0 | 0 |
| St. Barnabas, Dulwich | 20 | 0 | 0 |
| St. Saviour's, Denmark-park | 26 | 0 | 0 |
| Hampstead Parish Church | 39 | 0 | 0 |
| St. John the Baptist, Pinner | 24 | 0 | 0 |
| St. Mary's, Aldermanbury | 22 | 0 | 0 |
| St. Luke's, West Norwood | 49 | 0 | 0 |
| Munster-park Wesleyan Church, Fulham | 20 | 0 | 0 |
| Emmanuel Church, Wimbledon | 65 | 0 | 0 |
| Chiswick Parish Church | 30 | 0 | 0 |
| Ferme Park Baptist Church | 28 | 0 | 0 |
| St. Anselm's, Davies-street, W. | 20 | 0 | 0 |
| All Saints', Norfolk-square | 36 | 0 | 0 |
| St. Luke's (Parish Church), Chelsea | 43 | 0 | 0 |
| St. Marylebone Presbyterian Church | 71 | 0 | 0 |
| Upper Clapton Congregational Church | 20 | 0 | 0 |
| St. John's, Upper Norwood | 34 | 0 | 0 |
| Brixton-hill Wesleyan Church | 24 | 0 | 0 |
| Streatham Wesleyan Church | 34 | 0 | 0 |
| Dartford Churches | 27 | 0 | 0 |
| Christ Church, Woburn-square | 25 | 0 | 0 |
| St. James-the-Less, Westminster | 36 | 0 | 0 |
| Dulwich College Chapel | 50 | 0 | 0 |
| St. Mary the Virgin (Parish Church), Hayes, Kent | 24 | 0 | 0 |
| Hammersmith (St. Paul's) Parish Church | 26 | 0 | 0 |
| Trinity Presbyterian Church, Wimbledon | 21 | 0 | 0 |
| St. John the Evangelist, Putney | 59 | 0 | 0 |
| Bromley (Middlesex) Parish Church | 23 | 0 | 0 |
| Trent Church, Enfield | 21 | 0 | 0 |
| Upper Holloway Baptist Chapel | 21 | 0 | 0 |
| St. Mary Magdalene, Peckham | 35 | 0 | 0 |
| St. Mary's (New) Parish Church, Stoke Newington | 63 | 0 | 0 |
| St. John's, Deptford | 65 | 0 | 0 |
| Barry-road Wesleyan Church | 20 | 0 | 0 |
| Victoria Park Christian Evidence Association | 62 | 0 | 0 |
| Lewisham High-road Congregational Church | 45 | 0 | 0 |
| St. Katharine Royal Collegiate Chapel | 23 | 0 | 0 |
| Dutch Church, Austin Friars | 66 | 0 | 0 |
| St. George's Chapel, Albemarle-street | 57 | 0 | 0 |
| St. George's Garrison Church, Woolwich | 20 | 0 | 0 |
| St. Laurance's, Catford | 28 | 0 | 0 |
| St. Stephen's, Avenue-road | 27 | 0 | 0 |
| St. Mary's, Balham | 41 | 0 | 0 |
| Mission of the Holy Redeemer, Stoke Newington | 23 | 0 | 0 |
| St. Mary's Hospital Chapel, Ilford | 30 | 0 | 0 |
| St. James's, Holloway | 60 | 0 | 0 |
| Brixton Unitarian Church | 29 | 0 | 0 |
| Mitcham Parish Church | 25 | 0 | 0 |
| St. Peter's, Highgate-hill | 25 | 0 | 0 |
| Rectory-place Congregational Church, Woolwich | 29 | 0 | 0 |
| Kingswood, Surrey, Parish Church | 28 | 0 | 0 |
| Wanstead Parish Church and Christ Church | 50 | 0 | 0 |
| St. John's Mission Church, Chislehurst | 30 | 0 | 0 |
| St. Peter's, Dulwich-common | 44 | 0 | 0 |
| All Saints, Margaret-street | 48 | 0 | 0 |
| Camberwell Parish Church | 25 | 0 | 0 |
| West Hackney Parish Church | 25 | 0 | 0 |
| Holy Trinity with All Saints, Eltham | 40 | 0 | 0 |
| Hornsey Parish Church | 25 | 0 | 0 |
| Gordon-square Catholic Apostolic Church | 27 | 0 | 0 |
| St. Andrew's, Whitehall-park | 25 | 0 | 0 |
| St. Paul's, Upper Norwood | 66 | 0 | 0 |
| Hampstead Parish Church | 49 | 0 | 0 |
| Highgate Presbyterian Church | 38 | 0 | 0 |
| St. Paul's, Forest-hill | 40 | 0 | 0 |
| Duke of York's Royal Military School Chapel, Chelsea | 32 | 0 | 0 |
| St. German's, Blackheath | 37 | 0 | 0 |
| St. James's, Muswell-hill | 45 | 0 | 0 |
| St. John's, Notting-hill | 48 | 0 | 0 |
| St. Mark's, Bromley, Kent | 34 | 0 | 0 |
| Christ Church, Hornsey | 54 | 0 | 0 |
| St. Saviour's, Paddington | 41 | 0 | 0 |
| Emmanuel, West Dulwich | 27 | 0 | 0 |
| Miss Morice | 25 | 0 | 0 |
| Brompton Oratory | 39 | 0 | 0 |
| St. Thomas's, Regent-street (part collection) | 20 | 0 | 0 |
| Kensington Congregational Church | 71 | 0 | 0 |
| Farm-street Roman Catholic Church | 24 | 0 | 0 |
| Carmelite Church, Kensington | 22 | 0 | 0 |
| St. John's, Downshire Hill | 48 | 0 | 0 |
| St. Mark's, Kennington | 29 | 0 | 0 |
| Chigwell Parish Church | 40 | 0 | 0 |
| St. Philip's, Kensington | 73 | 0 | 0 |
| All Souls', Langham-place | 66 | 0 | 0 |
| St. John's, Notting-hill | 48 | 0 | 0 |
| St. Paul's, Forest-hill | 40 | 0 | 0 |
| Highgate Presbyterian | 38 | 0 | 0 |
| Grafton-square Congregational Church, Clapham | 31 | 0 | 0 |
| Regent's-park Baptist Church | 32 | 0 | 0 |
| Christ Church, Beckenham | 31 | 0 | 0 |
| Christ Church, Albany-street | 22 | 0 | 0 |
| Chapel Royal, Hampton Court Palace | 40 | 0 | 0 |
| Grosvenor Chapel, South Audley-street, W. | 81 | 0 | 0 |
| St. John's, Blackheath | 53 | 0 | 0 |
| St. Paul's, Camden-square | 47 | 0 | 0 |
| St. Luke's, Hackney | 22 | 0 | 0 |
| Archway-road Baptist Church | 22 | 0 | 0 |
| Stamford-hill Congregational Church | 79 | 0 | 0 |
| St. Mary's, Lewisham | 47 | 0 | 0 |
| St. Mary's, West Kensington | 24 | 0 | 0 |
| St. George's, Tufnell-park | 37 | 0 | 0 |
| Christ Church, Highbury | 49 | 0 | 0 |
| South Kensington Presbyterian Church | 28 | 0 | 0 |
| St. Andrew's Presbyterian Church, Upper Norwood | 55 | 0 | 0 |
| West London Wesleyan Mission | 43 | 0 | 0 |
| All Saints', Notting-hill | 44 | 0 | 0 |
| St. Leonard's and All Saints', Streatham | 72 | 0 | 0 |
| St. Paul's, Canonbury | 27 | 0 | 0 |
| Park Chapel, Chelsea | 22 | 0 | 0 |
| Westbourne-park Baptist Chapel | 22 | 0 | 0 |
| Regent-square Presbyterian Church | 96 | 0 | 0 |
| All Saints', Friern Barnet | 35 | 0 | 0 |
| Trinity Church, Hampstead | 62 | 0 | 0 |
| Aldenham Parish Church | 86 | 0 | 0 |
| Gray's Inn Chapel | 50 | 0 | 0 |
| St. Saviour's, Upper Chelsea | 36 | 0 | 0 |
| St. Luke's, West Holloway | 33 | 0 | 0 |
| Brompton Parish Church | 81 | 0 | 0 |
| St. Agnes's, Kennington | 43 | 0 | 0 |
| St. Luke's, West Hampstead | 20 | 0 | 0 |
| St. Mary Magdalene, Holloway | 26 | 0 | 0 |
| St. Mary the Virgin, Primrose Hill | 52 | 0 | 0 |
| Christ Church, Lee | 43 | 0 | 0 |

# MEDICAL OFFICERS OF THE HIGHLANDS AND ISLANDS OF SCOTLAND.

THE following memorial has been signed by 40 medical officers:—

Unto the Honourable the Local Government Board of Scotland, the Memorial of Medical Officers of the more remote Parishes of the Highlands and Islands of Scotland humbly sheweth—

I.—That the Medical Officers of the more remote parishes of the Highlands and Islands of Scotland are required to perform their duties by night as well as by day, and on Sundays as well as week days, and in all states of weather.

II.—That the areas of practice of many of these Medical Officers are of great extent, so that it is no uncommon occurrence for the Medical Officer to have to travel from 10 to 30 miles to see a pauper patient; that consequently his travelling expenses are heavy, and that, moreover, he is sometimes unable to return home the same night.

III.—That the work is very trying to the health of the Medical Officer, especially in winter time; yet, as matters stand, he may not leave his parish for a holiday rest unless he provides at his own expense a duly qualified and registered Medical Practitioner as his substitute.

IV.—That the salaries of the Medical Officers are small, and that the population of the districts is scattered and very poor, so that few Medical Officers can earn more than from £20 to £50 a year beyond their official parochial salary; and that consequently the expense of providing a qualified medical substitute during a reasonable holiday is out of all proportion to the emoluments attached to the office.

V.—That all other Parish Officers may have the privilege of an annual holiday without having to place a substitute in their place at their own expense; the Parish Medical Officer alone being compelled to provide such a substitute at his own expense.

VI.—That many of these Medical Officers are compelled to reside far from railway or other convenient communication with the South, so that in most cases two or three days are necessary to travel to Edinburgh or other centres of population, and that the expenses of living in such isolated districts are great and the social amenities few.

VII.—That the Local Government Board of Ireland requires that a Board of Guardians shall give its Medical Officer an annual holiday and pay a reasonable fee to a qualified substitute, and that most of these Boards have cheerfully acquiesced in this requirement.

VIII.—We, the undersigned Medical Officers, submit that, as is the rule in similar districts and under similar circumstances in Ireland, we also should be granted the privilege of an annual holiday, and that the Parish Council should pay a reasonable fee to a substitute; that if one month were allowed—deducting a week for going and returning—the Medical Officer would have a clear three weeks' holiday, and that the expense to the ratepayers would be trifling.

IX.—And the undersigned Parish Medical Officers earnestly pray that the Local Government Board of Scotland will be pleased to look into the difficulties and disadvantages, in the respects herein set out, under which their Medical Officers in the outlying districts at present labour, and will take the whole position of facts mentioned in this Memorial into consideration and grant the prayer thereof.

And your Memorialists will ever pray.

In connexion with the above the following has been presented "Unto the Honourable the Local Government Board of Scotland."

We, the undersigned Members of Imperial Parliament, and others, desire to express our sympathy with the Memorial presented by the "Medical Officers of the more remote Parishes of the Highlands and Islands of Scotland," and our hope that your Honourable Board may see its way to accede to the prayer of their Memorial:—

This memorial has been signed by the following gentlemen, viz.:—Lord Lister, Sir William Arrol, M.P., Mr. J. E. B. Baillie, M.P., Mr. Augustine Birrell, Q.C., M.P., Sir Charles Cameron, Bart., M.D., M.P., the Right Hon. J. A. Campbell, M.P., Dr. G. B. Clark, M.P., Mr. J. Colville, M.P., Mr. J. W. Crombie, M.P., Mr. Alexander Cross, M.P., Mr. J. H. Dalziel, M.P., Dr. Charles Douglas, M.P., Sir William Dunn, Bart., M.P., Dr. R. Farquharson, M.P., Sir Walter Foster, M.D., M.P., Mr. T. C. H. Hedderwick, M.P., Sir J. G. S. Kinloch, Bart., M.P., Sir John Leng, M.P., Mr. James McKillop, M.P., Mr. Donald N. Nicol, M.P., Sir George A. Pilkington, M.P., Mr. A. Robinson Souttar, M.P., Mr. H. J. Tennant, M.P., Sir W. Thorburn, M.P., Sir John Batty Tuke, M.D., M.P., Mr. Alex. Ure, Q.C., M.P., Mr. Eugene Wason, M.P., Sir W. Wedderburn, Bart., M.P., Dr. William Bruce, LL.D. (Direct Representative for Scotland on the General Medical Council), Dr. James Dunsmure (President of the Royal College of Surgeons of Edinburgh), Dr. James Andrew (President of the Royal College of Physicians of Edinburgh), Sir Hector Clare Cameron, M.D. (President of the Faculty of Physicians and Surgeons of Glasgow), Dr. T. McCall Anderson (Professor of Clinical Medicine and Dean of the Medical Faculty, University of Glasgow), Professor R. W. Reid, M.D., F.R.C.S. (Dean of the Medical Faculty of the University of Aberdeen), and Professor E. Waymouth Reid, F.R.S. (Dean of the Medical Faculty of the University of St. Andrews). Of the Faculty of Medicine of the University of Edinburgh: Professor Thomas Annandale, F.R.C.S.; Professor William S. Greenfield, M.D.; Professor Henry D. Littlejohn, M.D., LL.D.; Professor C. Hunter Stewart, M.B., D.Sc.; Professor Alex. Russell Simpson, M.D.; Sir William Turner, M.B., D.C.L., LL.D.; and Professor John Wyllie, M.D., F.R.C.P., LL.D.

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6553 births and 3220 deaths were registered during the week ending July 7th. The annual rate of mortality in these towns, which had been 14·9 and 15·1 per 1000 in the two preceding weeks, fell last week to 14·5. In London the rate was 13·5 per 1000, while it averaged 15·1 in the 32 provincial towns. The lowest death-rates in these towns were 9·1 in West Ham, 9·9 in Croydon, 10·1 in Bristol, and 10·2 in Birkenhead; the highest rates were 18·9 in Salford, 19·3 in Manchester, 19·9 in Liverpool, and 24·1 in Sunderland. The 3220 deaths in these towns included 344 which were referred to the principal zymotic diseases, against 366 and 419 in the two preceding weeks; of these 89 resulted from whooping-cough, 84 from measles, 63 from diarrhœa, 53 from diphtheria, 27 from scarlet fever, 26 from "fever" and two from small-pox. The lowest death-rates from these diseases were recorded in Croydon, in Birkenhead, and in Bolton; and the highest in Derby, in Sunderland, and in Swansea. The greatest mortality from measles occurred in Oldham and in Derby; from whooping-cough in Sunderland and Wolverhampton; and from diarrhœa in Gateshead. The 53 deaths from diphtheria included 20 in London, four in Swansea, four in Liverpool, and four in Leeds. Two fatal cases of small-pox were registered in Liverpool, but not one in any other of the 33 towns. There were 17 cases of small-pox under treatment in the Metropolitan Asylums Hospitals, on Saturday last, July 7th, against 15, 13, and 16 at the end of the three preceding weeks; four new cases were admitted during the week, against eight, none, and eight in the three preceding weeks. The number of scarlet fever patients in the Metropolitan Asylums Hospitals and in the London Fever Hospital at the end of the week was 1843, against numbers increasing from 1754 to 1810 on the four preceding Saturdays; 229 new cases were admitted during the week, against 210, 219, and 210 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 181 and 180 in the two preceding weeks, further fell last week to 140, and were 48 below the corrected average. The causes of 46, or 1·6 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, in Nottingham, in Cardiff and in 10 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool and in Hull.

## HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 16·5 and 17·9 in the two preceding weeks, fell again to 17·7 during the week ending July 7th, but was 3·2 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 8·4 in Perth and 9·3 in Paisley to 20·2 in Dundee and 20·3 in Glasgow. The 546 deaths in these towns included 32 which were referred to diarrhœa, 22 to whooping-cough, 20 to measles, four to scarlet fever, three to "fever," two to diphtheria, and two to small-pox. In all 85 deaths resulted from these principal zymotic diseases, against 60 and 83 in the two preceding weeks. These 85 deaths were equal to an annual rate of 2·8 per 1000, which was 1·3 above the mean rate last week from the same diseases in the 33 large English towns. The 22 fatal cases of whooping-cough showed a decrease of four from the number in the preceding week and included 17 in Glasgow. The deaths referred to measles, which had been 14 and 18 in the two preceding weeks, further rose last week to 20 and included 13 in Glasgow and three in Edinburgh. The fatal cases of diarrhœa, which had increased from 19 to 24 in the two preceding weeks, further rose last week to 32 and included 16 in Glasgow, five in Edinburgh, four in Dundee, four in Aberdeen, and three in Leith. The deaths referred to scarlet

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JUNE, 1900.

(*Specially compiled for* THE LANCET.)

| SANITARY AREAS. | Estimated population in the middle of 1900. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cholera. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.† | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | Deaths from all causes. | Death-rate per 1000 living. | Deaths of infants under one year to 1000 births. |
| LONDON... ... ... ... ... ... ... ... | 4,589,129 | 23 | 1105 | 769 | 1 | 203 | 3 | 12 | 328 | — | 2444 | 6·9 | — | 217 | 7 | 101 | 174 | — | 30 | 2 | 55 | 616 | 1·7 | 5201 | 14·8 | 117 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington ... ... ... ... ... ... ... | 130,104 | 5 | 24 | 3 | — | 3 | — | — | 12 | — | 47 | 4·7 | — | 19 | — | 1 | 5 | — | — | — | 3 | 28 | 2·8 | 134 | 13·4 | 148 |
| Kensington ... ... ... ... ... ... ... | 173,603 | 5 | 29 | 13 | — | 7 | — | 1 | 8 | — | 63 | 4·7 | — | 12 | — | 4 | 1 | — | — | — | 1 | 18 | 1·4 | 162 | 12·2 | 116 |
| Hammersmith ... ... ... ... ... ... | 110,203 | — | 26 | 13 | — | 6 | — | — | 10 | — | 55 | 6·5 | — | 7 | 2 | 1 | 3 | — | 1 | — | 1 | 15 | 1·8 | 125 | 14·8 | 162 |
| Fulham ... ... ... ... ... ... ... ... | 136,383 | 3 | 33 | 30 | — | 4 | — | — | 9 | — | 79 | 7·6 | — | 2 | 3 | 2 | 6 | — | 1 | — | 3 | 17 | 1·6 | 134 | 12·8 | 116 |
| Chelsea ... ... ... ... ... ... ... ... | 96,715 | — | 25 | 9 | — | 1 | — | 1 | 6 | — | 42 | 5·7 | — | 1 | — | — | 3 | — | 1 | — | 3 | 8 | 1·1 | 110 | 14·9 | 107 |
| St. George Hanover-square ... ... | 81,133 | — | 17 | 4 | — | 4 | — | — | 4 | — | 29 | 4·7 | — | — | 1 | — | — | — | — | — | — | 1 | 0·2 | 73 | 11·7 | 71 |
| Westminster ... ... ... ... ... ... | 51,657 | — | 14 | 8 | — | 1 | — | — | 2 | — | 25 | 6·3 | — | 3 | — | 1 | — | — | 2 | — | — | 6 | 1·5 | 65 | 16·4 | 103 |
| St. James Westminster ... ... ... | 21,457 | — | 5 | 6 | — | — | — | — | — | — | 11 | 6·7 | — | — | — | 1 | — | — | — | — | — | 1 | 0·6 | 19 | 11·5 | 73 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marylebone ... ... ... ... ... ... | 139,777 | — | 39 | 15 | — | 3 | — | 1 | 20 | — | 78 | 7·3 | — | 13 | 1 | 1 | 9 | — | — | 1 | 2 | 27 | 2·5 | 175 | 16·3 | 98 |
| Hampstead ... ... ... ... ... ... | 81,766 | — | 12 | 12 | — | 3 | — | — | 4 | — | 31 | 4·9 | — | 3 | — | 1 | — | — | — | — | — | 4 | 0·6 | 47 | 7·5 | 28 |
| St. Pancras ... ... ... ... ... ... | 245,551 | — | 56 | 49 | — | 24 | 1 | 2 | 9 | — | 141 | 7·5 | — | 17 | 2 | 4 | 5 | — | 4 | — | 1 | 33 | 1·8 | 276 | 14·6 | 94 |
| Islington ... ... ... ... ... ... ... | 351,541 | — | 62 | 43 | 1 | 16 | 1 | — | 23 | — | 146 | 5·4 | — | 28 | 4 | 11 | 20 | — | 2 | — | 5 | 70 | 2·6 | 393 | 14·6 | 144 |
| Stoke Newington ... ... ... ... ... | 35,718 | — | 5 | 5 | — | 4 | — | — | 2 | — | 16 | 5·8 | — | — | — | 1 | 3 | — | 1 | — | 1 | 6 | 2·2 | 37 | 13·5 | 108 |
| Hackney ... ... ... ... ... ... ... | 225,519 | 1 | 78 | 30 | — | 13 | — | — | 13 | — | 135 | 7·8 | — | 2 | 1 | 5 | 14 | — | — | — | 1 | 23 | 1·3 | 202 | 11·7 | 89 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Giles ... ... ... ... ... ... ... | 36,870 | — | 3 | 3 | — | 4 | — | — | 2 | — | 12 | 4·2 | — | 2 | — | 1 | 2 | — | 1 | — | — | 6 | 2·1 | 45 | 15·9 | 123 |
| St. Martin-in-the-Fields ... ... ... | 11,895 | — | 1 | — | — | 1 | — | — | 1 | — | 3 | 3·3 | — | — | — | — | — | — | — | — | — | — | — | 20 | 22·0 | 77 |
| Strand ... ... ... ... ... ... ... | 22,748 | — | 4 | 4 | — | 1 | — | — | 2 | — | 11 | 6·3 | — | — | — | — | 1 | — | 1 | — | — | 2 | 1·1 | 39 | 22·4 | 200 |
| Holborn ... ... ... ... ... ... ... | 29,188 | — | 9 | 4 | — | 2 | — | — | 2 | — | 17 | 7·6 | — | 3 | — | — | 2 | — | 1 | — | 1 | 7 | 3·1 | 62 | 27·7 | 245 |
| Clerkenwell ... ... ... ... ... ... | 66,007 | — | 18 | 8 | — | 5 | — | — | 6 | — | 37 | 7·3 | — | 7 | 2 | 2 | 5 | — | — | — | — | 16 | 3·2 | 93 | 18·4 | 121 |
| St. Luke ... ... ... ... ... ... ... | 40,655 | — | 14 | 7 | — | 2 | — | — | 3 | — | 26 | 8·3 | — | 2 | 1 | 1 | — | — | — | — | 1 | 5 | 1·6 | 80 | 25·6 | 121 |
| City of London ... ... ... ... ... | 26,922 | — | 7 | 4 | — | — | — | — | — | — | 11 | 5·3 | — | — | 2 | — | — | — | — | — | — | 2 | 1·0 | 37 | 17·9 | 120 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch ... ... ... ... ... ... ... | 120,641 | — | 25 | 39 | — | 9 | — | — | 6 | — | 79 | 8·5 | — | 8 | 3 | 7 | 8 | — | 1 | 1 | 3 | 31 | 3·3 | 172 | 18·5 | 139 |
| Bethnal Green ... ... ... ... ... | 128,831 | 1 | 41 | 40 | — | 8 | — | — | 22 | — | 112 | 11·3 | — | 2 | 1 | 14 | 6 | — | 1 | — | 1 | 25 | 2·5 | 156 | 15·8 | 108 |
| Whitechapel ... ... ... ... ... ... | 82,220 | — | 50 | 22 | — | 3 | — | — | 12 | — | 87 | 13·8 | — | 2 | 1 | — | 3 | — | 1 | — | 2 | 9 | 1·4 | 109 | 17·3 | 80 |
| St. George-in-the-East ... ... ... | 48,875 | 6 | 17 | 4 | — | 3 | — | — | 8 | — | 38 | 10·1 | — | 2 | 1 | 1 | 2 | — | — | — | — | 6 | 1·6 | 79 | 21·1 | 95 |
| Limehouse ... ... ... ... ... ... ... | 58,944 | — | 22 | 25 | — | 2 | — | — | 6 | — | 55 | 12·2 | — | 13 | 2 | 1 | 7 | — | — | — | 3 | 26 | 5·8 | 133 | 29·4 | 308 |
| Mile End Old Town ... ... ... ... | 113,781 | — | 32 | 14 | — | 3 | — | — | 17 | — | 66 | 7·6 | — | 13 | 2 | 1 | 7 | — | — | — | — | 23 | 2·6 | 137 | 15·7 | 124 |
| Poplar ... ... ... ... ... ... ... ... | 170,968 | — | 35 | 28 | — | 7 | — | — | 17 | — | 87 | 6·6 | — | 16 | — | 2 | 9 | — | — | — | 3 | 30 | 2·3 | 240 | 18·3 | 185 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Saviour Southwark ... ... ... | 23,854 | — | 5 | 5 | — | 1 | — | — | 1 | — | 12 | 6·6 | — | 1 | — | — | — | — | — | — | — | 1 | 0·5 | 45 | 24·6 | 108 |
| St. George Southwark ... ... ... | 60,597 | — | 23 | 13 | — | — | — | — | 6 | — | 42 | 9·0 | — | 1 | 2 | — | 5 | — | — | — | 1 | 9 | 1·9 | 98 | 21·1 | 164 |
| Newington ... ... ... ... ... ... | 125,178 | — | 24 | 37 | — | 5 | — | — | 7 | — | 73 | 7·6 | — | 6 | — | 5 | 2 | — | 1 | — | 3 | 17 | 1·8 | 157 | 16·4 | 133 |
| St. Olave Southwark ... ... ... ... | 10,909 | — | 9 | 3 | — | — | — | — | — | — | 12 | 14·3 | — | 1 | — | — | — | — | — | — | — | 1 | 1·2 | 16 | 19·1 | 129 |
| Bermondsey ... ... ... ... ... ... | 85,920 | — | 18 | 20 | — | 3 | — | 1 | 5 | — | 47 | 7·1 | — | — | — | 4 | 6 | — | 3 | — | — | 13 | 2·0 | 103 | 15·6 | 131 |
| Rotherhithe ... ... ... ... ... ... | 41,246 | — | 8 | 4 | — | 3 | — | — | 3 | — | 18 | 5·7 | — | 1 | 1 | 2 | 2 | — | — | — | — | 6 | 1·9 | 47 | 14·9 | 99 |
| Lambeth ... ... ... ... ... ... ... | 312,152 | — | 56 | 63 | — | 10 | 1 | 1 | 18 | — | 149 | 6·2 | — | 1 | 1 | 9 | 2 | — | 2 | — | 4 | 19 | 0·8 | 310 | 12·9 | 84 |
| Battersea ... ... ... ... ... ... ... | 178,100 | — | 45 | 12 | — | 6 | — | 1 | 14 | — | 78 | 5·7 | — | 2 | 1 | 1 | 7 | — | 1 | — | 4 | 16 | 1·2 | 178 | 13·0 | 119 |
| Wandsworth ... ... ... ... ... ... | 217,004 | — | 34 | 24 | — | 11 | — | — | 14 | — | 83 | 5·0 | — | 10 | 1 | 3 | 3 | — | 2 | — | 3 | 22 | 1·3 | 194 | 11·7 | 107 |
| Camberwell ... ... ... ... ... ... | 268,457 | 1 | 63 | 58 | — | 8 | — | 1 | 11 | — | 142 | 6·9 | — | — | — | 5 | 8 | — | 2 | — | 1 | 16 | 0·8 | 256 | 12·4 | 126 |
| Greenwich ... ... ... ... ... ... | 184,582 | — | 55 | 32 | — | 6 | — | 1 | 11 | — | 105 | 7·4 | — | 5 | 1 | 4 | 12 | — | — | — | — | 22 | 1·6 | 216 | 15·3 | 112 |
| Lewisham (excluding Penge) ... ... | 93,548 | — | 30 | 21 | — | 5 | — | — | 3 | — | 59 | 8·2 | — | — | — | 2 | 2 | — | — | — | 3 | 7 | 1·0 | 73 | 10·2 | 67 |
| Woolwich... ... ... ... ... ... ... | 41,600 | — | 7 | 2 | — | 1 | — | 2 | 1 | — | 13 | 4·1 | — | 4 | — | 1 | 1 | — | — | — | — | 6 | 1·9 | 58 | 18·2 | 107 |
| Lee ... ... ... ... ... ... ... ... | 40,722 | — | 6 | 14 | — | 3 | — | — | 4 | — | 27 | 13·1 | — | 1 | — | 1 | — | — | 1 | — | 1 | 4 | 1·3 | 30 | 9·6 | 77 |
| Plumstead ... ... ... ... ... ... | 65,558 | — | 19 | 19 | — | — | — | — | 3 | — | 41 | 5·4 | — | 7 | 1 | 1 | 3 | — | — | — | — | 12 | 2·4 | 66 | 13·1 | 87 |
| Port of London ... ... ... ... ... | — | 1 | — | — | — | 2 | — | — | 1 | — | 4 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including 12 cases of membranous croup.

† Including deaths from membranous croup.

fever, which had been two and seven in the two preceding weeks, fell last week to four, and included three in Glasgow. The three deaths from fever and the two from small-pox occurred in Glasgow. The two deaths from diphtheria included one in Edinburgh and one in Greenock. The deaths from diseases of the respiratory organs in these towns, which had been 87 and 97 in the two preceding weeks, fell last week to 72, but were 15 above the number in the corresponding period of last year. The causes of 31, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

## HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·9 and 20·0 per 1000 in the two preceding weeks, fell again to 17·8 during the week ending July 7th. During the four weeks ending on Saturday last the death-rate in the city averaged 19·9 the rate during the same period having been 14·7 in London and 17·3 in Edinburgh. The 119 deaths registered in Dublin during the week under notice showed a decline of 15 from the number in the preceding week, and included six which were referred to the principal zymotic diseases, against four and three in the two preceding weeks; of these, three resulted from whooping-cough, two from diarrhœa, one from fever, and not one from small-pox, measles, scarlet fever, or diphtheria. These six deaths were equal to an annual rate of 0·9 per 1000, the zymotic death-rate during the same period being 1·5 in London and 1·7 in Edinburgh. The fatal cases of whooping-cough, which had risen from one to two in the two preceding weeks, further rose to three last week, and the two deaths from diarrhœa showed an increase of one. The 119 deaths in Dublin last week included 22 of infants under one year of age and 26 of persons aged upwards of 60 years; the deaths of infants were about equal to the average, but those of elderly persons were below those recorded in recent weeks. Seven inquest cases and six deaths from violence were registered; and 45, or rather more than one-third of the deaths occurred in public institutions. The causes of six, or 5 per cent., of the deaths in the city last week were not certified.

## VITAL STATISTICS OF LONDON DURING JUNE, 1900.

IN the accompanying table will be found complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·9 per 1000 of the population, estimated at 4,589,129 persons in the middle of the year. In the three preceding months the rates had been 6·6, 6·2, and 7·2 per 1000 respectively. The rates were considerably below the average in Paddington, Kensington, St. George Hanover-square, St. Giles, St. Martin-in-the-Fields, and Woolwich; while they showed the largest excess in Bethnal Green, Whitechapel, St. George-in-the-East, Limehouse, St. Olave Southwark, and Lee sanitary areas. 23 small-pox cases were notified during June, of which six belonged to St. George-in-the-East, five to Paddington, five to Kensington, and three to Fulham sanitary areas; 20 small-pox patients were admitted into the Metropolitan Asylums Hospitals during June, and 16 remained under treatment at the end of the month. The prevalence of scarlet fever showed a further increase upon that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in Hackney, Whitechapel, St. George-in-the-East, Limehouse, St. George Southwark, and St. Olave Southwark. The Metropolitan Asylums Hospitals contained 1788 scarlet fever patients at the end of June, against 1654, 1619, and 1735, at the end of the three preceding months; the weekly admissions averaged 202, against 162, 174, and 198 in the three preceding months. The prevalence of diphtheria showed a slight decline from that in the preceding month; the proportional prevalence of this disease was greatest in Shoreditch, Bethnal Green, Limehouse, Newington, Lee, and Plumstead sanitary areas. There were 1212 diphtheria patients in the Metropolitan Asylums Hospitals at the end of June, against 1236, 1131, and 1402 at the end of the three preceding months; the weekly admissions averaged 151, against 148, 135, and 172 in the three preceding months. The prevalence of enteric fever showed a further decrease from that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in St. Pancras, Stoke Newington, St. Giles, St. Martin-in-the-Fields, Clerkenwell, and Lee. The Metropolitan Asylums Hospitals contained 148 enteric fever patients at the end of June, against 263, 208, and 176 at the end of the three preceding months. Erysipelas was proportionally most prevalent in Paddington, Marylebone, Bethnal Green, Whitechapel, St. George-in-the-East, and Mile End Old Town sanitary areas. The 12 cases of puerperal fever included two in St. Pancras and two in Woolwich sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the sanitary areas in which the patients had previously resided. During the four weeks ending June 30th the deaths of 5201 persons belonging to London were registered, equal to an annual rate of 14·8 per 1000, against 19·1, 20·2, and 16·6 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 7·5 in Hampstead, 9·6 in Lee, 10·2 in Lewisham, 11·5 in St. James Westminster, and 11·7 in St. George Hanover-square, in Hackney, and in Wandsworth; the highest rates were 22·0 in St. Martin-in-the-Fields, 22·4 in Strand, 24·6 in St. Saviour-Southwark, 25·6 in St. Luke, 27·7 in Holborn, and 29·4 in Limehouse. During the four weeks of June 616 deaths were referred to the principal zymotic diseases in London; of these, 217 resulted from measles, 37 from scarlet fever, 101 from diphtheria, 174 from whooping-cough, 30 from enteric fever, two from simple continued fever, and 55 from diarrhœa. These 616 deaths were equal to an annual rate of 1·7 per 1000, against 1·8 in each of the two preceding months. No death from any of these diseases occurred last month in St. Martin-in-the-Fields; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, St. James Westminster, Hampstead, St. Saviour Southwark, Lambeth, and Camberwell; and the highest rates in Paddington, Holborn, Clerkenwell, Shoreditch, and Limehouse. The 217 deaths from measles were 81 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Paddington, Holborn, Clerkenwell, Limehouse, Mile End Old Town, and Plumstead sanitary areas. The 37 fatal cases of scarlet fever showed a decline of 29 from the corrected average number; the greatest proportional fatality from this disease occurred in Fulham. Clerkenwell, City of London, Shoreditch, Limehouse, and St. George Southwark sanitary areas. The 101 deaths from diphtheria were 47 below the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in Shoreditch, Bethnal Green, Newington, Bermondsey, Rotherhithe, and Lambeth. The 174 fatal cases of whooping-cough were three in excess of the corrected average number; this disease showed the highest proportional fatality in Stoke Newington, Holborn, Clerkenwell, Limehouse, St. George Southwark, and Bermondsey sanitary areas. The 32 deaths referred to "fever" were slightly below the number in the corresponding periods of the ten preceding years; among the various sanitary areas the "fever" death-rate was highest in Westminster, St. Pancras, Stoke Newington, Strand, Holborn, and Bermondsey sanitary areas. The 55 fatal cases of diarrhœa were only one-third of the corrected average number; the greatest proportional fatality from this disease was recorded in Chelsea, Stoke Newington, Holborn, St. Luke, Limehouse, and Lewisham sanitary areas. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during June was 30 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 117 per 1000. The lowest rates of infant mortality were recorded in St. George Hanover-square, St. James Westminster, Hampstead, St. Martin-in-the-Fields, Lewisham, and Lee; and the highest rates in Hammersmith, Strand, Holborn, Limehouse, Poplar, and St. George Southwark sanitary areas.

# THE SERVICES.

### MR. BURDETT-COUTTS'S CHARGES.

THE terms of reference of the proposed commission which is to proceed to South Africa are as follows:—"To report on the arrangements for the care and treatment of the sick and wounded during the South African Campaign."

### ROYAL NAVY MEDICAL SERVICE.

The following appointments are notified: — Staff-Surgeons: J. H. Thomas to the *Camperdown*, lent, and A. M. Page to the *Australia*.

### ROYAL ARMY MEDICAL CORPS.

The under-mentioned surgeons-on-probation to be lieutenants: Patrick Hagart Henderson, John Patrick Joseph Murphy, Arthur Rowland Greenwood, Frederick Hallam Hardy, William Moreland Haladay Spiller, Archibald Douglas Jameson, William Bennett, Bernard Bruce Burke, Walter Burgess Fry, Charles Richard Louis Ronayne, George Baillie, Llewellyn Lancelot Græme Thorpe, John Blake Hall, William Silvister Crosthwait, Percy Clarence Douglass, Richard Francis Ellery, Robert Lionel Popham, The following among them have arrived at Salisbury Plain and have been posted in the district as follows: Perham Down—B. B. Burke, to charge of stationary hospital; C. R. Ronayne, to charge of 3rd Brigade and duty in hospital; and W. B. Fry, stationary hospital and medical charge of details in Tidworth House. Bulford Camp—F. H. Hardy, to charge of stationary hospital; G. Baillie and G. Douglass, for duty in stationary hospital; and J. B. Hall, to charge of 2nd Brigade. West Down Camp—W. S. Crosthwait, to charge of details.

### MILITIA MEDICAL STAFF.

Surgeon-Lieutenant-Colonel D. Jacob, 4th Battalion the Prince of Wales's Leinster Regiment (Royal Canadians), retires under paragraph 81 Militia Regulations, with permission to retain his rank and to wear the uniform of the battalion on retirement.

### VOLUNTEER CORPS.

*Artillery:* 4th Durham (Western Division, Royal Garrison Artillery): William Gray to be Surgeon-Lieutenant. 1st Forfarshire: James Gray to be Surgeon-Lieutenant. 1st Glamorganshire: Surgeon-Lieutenant D. A. Davies to be Surgeon-Captain. 1st Shropshire and Staffordshire: Surgeon-Captain J. P. Massingham to be Surgeon-Major. The undermentioned gentlemen to be Surgeon-Lieutenants:—George Higginson and Wheelton Hind. 2nd Gloucestershire (the Bristol): Lieutenant T. H. Board to be Captain and Marcus John Eustace to be Surgeon-Lieutenant. *Rifle:* 3rd Volunteer Battalion the King's (Liverpool Regiment): Lieutenant Henry D'Arnim Blumberg resigns his commission and is appointed Surgeon-Lieutenant.

### VOLUNTEER MEDICAL STAFF.

The London Companies: Surgeon-Lieutenant W. S. Sharpe to be Surgeon-Captain. The Woolwich Companies: Alfred Hugh Minton to be Surgeon-Lieutenant.

### TRANSVAAL WAR NOTES.

The following have left for service in South Africa:—Civil Surgeons Owen, Davies, Ffrench, and Hunter.

The following have arrived in England from South Africa:—Major Kelly, R.A.M.C., Lieutenant Nicholls, R.A.M.C., Lieutenant Irvine, R.A.M.C., Major Whaite, R.A.M.C., Captain Dalton, R.A.M.C., Lieutenant Cuddon-Fletcher, R.A.M.C., and Civil Surgeons Nicol, Goodman, Thomas, and Stamford.

Major Nichol, R.A.M.C., is reported from Cape Town discharged from hospital to duty.

The following steamers have arrived at Southampton, bringing the sick and wounded men as detailed from the seat of war in South Africa:—The *Maine*, on July 4th, with 16 very severe cases; the *Aroca*, on July 5th, with 50 cases; the *Assaye*, on July 7th, with 693 sick and wounded; and the *Princess of Wales*, on July 9th, with 170 patients. On Tuesday afternoon, July 10th, H.R.H. the Duchess of York visited the Royal Victoria Hospital and was conducted over the surgical and medical divisions by Colonel Charlton (principal medical officer) and his staff. In the medical division Lieutenant-Colonel W. E. Webb, and in the surgical division Major C. Birt, explained the nature of the cases.

Six medical men and a number of nurses and ward maids have left for South Africa in the *Dunvegan Castle*. They form part of the remainder of the staff of the Imperial Yeomanry Hospital now being formed at Pretoria. The complete medical staff will be as follows:—Dr. W. Langdon Brown and Dr. Herbert Williamson, St. Bartholomew's Hospital; Dr. F. M. Sandwith, Kasr el-Aini Hospital, Cairo; Dr. Stanley F. Crowther Smith, Mr. A. R. J. Douglas, and Mr. Howell Davies, St. Bartholomew's Hospital; Dr. F. Bricknell and Mr. F. L. Provis, Tottenham Hospital; and Mr. A. H. Hayes and Mr. C. S. Frost. Major Reade, R.A.M.C., is the commandant.

Of the 1009 invalid soldiers who have arrived at Plymouth during the past two months from South Africa only 120 now remain at the Military Hospital, Devonport. The majority of these are convalescent and will be shortly sent on sick furlough.

### TRANSVAAL WAR CASUALTIES.

Surgeon-Lieutenant-Colonel James Creagh, 9th Battalion King's Royal Rifle Corps (North Cork Militia), died from enteric fever on July 6th, between Viljoen's Drift and Kroonstad.

### THE RISING IN ASHANTI.

A telegram received from Mr. Low (Gold Coast) by the Colonial Office, dated Akwabosu, July 1st, says: "Crossed Ofin river June 30th and July 1st. Following Europeans left Kumassi with force. ..... Medical Officers Garland, Chalmers, Tweedy, Graham, Gold Coast Colony, (and) Macfarlane of Lagos. ..... Passage across Ofin river very difficult owing to floods. Hardships of journey from Kumassi have been very severe. Most of the severely wounded Hausas have since died; others are missing. In addition to officers mentioned in previous telegram as left in charge of fort add name of Hay, medical officer.—HODGSON."

### THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the Directors of the Naval Medical Supplemental Fund, held on July 10th, Sir J. N. Dick, K.C.B., late Director-General, R.N., being in the chair, the sum of £55 was distributed among the several applicants.

### VOLUNTEER MEDICAL ASSOCIATION.

The annual meeting of the Volunteer Medical Association will be held at 20, Hanover-square, on Tuesday, July 24th, at 4.30 P.M. The council will meet at 4 P.M. Surgeon-Major John J. de Zouche Marshall, 3rd Volunteer Battalion the East Surrey Regiment, has been elected to the post of honorary secretary, vice Surgeon-Captain F. J. Warwick, V.M.S.C.

Deputy Surgeon-General Henry Cayley (retired), Indian Medical Service, has been appointed Honorary Surgeon to the Queen, vice Surgeon-Major A. Grant (retired), Indian Medical Service, deceased.

At Windsor Castle on July 7th the following Companions of the Order of the Bath were introduced into the presence of the Sovereign, and Her Majesty the Queen was graciously pleased to affix to their respective left breasts the Decoration of the Military Division of the Third Class of the Order: Colonel William Egerton Saunders, Royal Army Medical Corps; Surgeon-General Henry Skey Muir, Deputy Director-General Army Medical Service; and Surgeon-Lieutenant-Colonel Benjamin Bloomfield Connolly, A.M.S.

# Correspondence.

"Audi alteram partem."

## "THE LECTURERS AND LECTURES AT THE ROYAL COLLEGE OF SURGEONS OF ENGLAND FROM 1810 TO 1900."

*To the Editors of* THE LANCET.

SIRS,—Your kind and appreciative notice in an annotation in THE LANCET of June 30th (p. 1894) of my "List of Lecturers and Lectures at the Royal College of Surgeons of England, 1810–1900," encourages me to ask you to be so good

## MUSEUM LECTURES.

### COMPARATIVE ANATOMY.

| Date of delivery. | Name of lecturer. | Number of lectures. | Title of lecture. |
|---|---|---|---|
| 1814 | Astley Paston Cooper. | 15 | Comparative Anatomy. |
| 1815 | Astley Paston Cooper. | 15 | Comparative Anatomy. |
| 1816 | William Lawrence. | 15 | An Introduction to Comparative Anatomy and Physiology. |
| 1822 | Everard Home. | 15 | Comparative Anatomy. |
| 1829 | Herbert Mayo. | 15 | Anatomy and Physiology of the Nervous System in the Different Classes of Animals.<br>Development of the Brain in Man and Functions of the Cerebral Nerves. |
| 1830 | Herbert Mayo. | 15 | Anatomy and Physiology of the Organs of Sense in the Different Classes of Animals.<br>Physiology of Sleep, Volition, Muscular Action, Respiration, and Vocal Organs. |
| 1832 | Charles Bell. | 15 | On Life and Organisation; on the Skeleton; and on the Physiology of the Nervous System. |
| 1833 | Charles Bell. | 15 | On the Prospective Design indicated by the Adaptation of the Organs of Support, or the Hard Parts, of the Different Classes of Animals to their Habits, and to the Circumstances in which they are Placed.<br>The Teeth in the Different Classes of Animals, and the Different Kinds of Articulation of the Bones, and the Arrangement of the Muscles similarly considered<br>Physiology of the Nervous System as connected with the Anatomy of Expression. |

### SURGERY.

| | | | |
|---|---|---|---|
| 1819 | James Wilson. | 9 | Lectures on the Blood and on the Anatomy, Physiology, and Surgical Pathology of the Vascular System of the Human Body.* |
| 1820 | James Wilson. | 9 | Lectures on the Structure and Physiology of the Parts composing the Skeleton and on the Diseases of the Bones and Joints of the Human Body, preceded by some Observations on the Influence of the Brain and Nerves. |
| 1821 | James Wilson. | 9 | Lectures on the Structure and Physiology of the Male Urinary and Genital Organs of the Human Body and on the Nature and Treatment of their Diseases.† |
| 1829 | George James Guthrie. | 9 | Anatomy of the Circulating System in Man: History of its Development and Comparison of the Different Stages with the Permanent Structures in Inferior Animals. Functions of the Heart and Arteries and Veins. Injuries and Diseases of the Vascular System in Man and the Treatment of the Same. |
| 1830 | George James Guthrie. | 9 | On the Anatomy of the Human Pelvis: its Sexual and National Varieties; Comparison of it with the Pelvis in other Animals.<br>On the Anatomy of the Human Urinary and Sexual Organs, illustrated by Observations of the Same Parts in the Inferior Classes of Animals.<br>On Wounds and Injuries of the Head and Chest.<br>On the Diseases of the Urinary and Sexual Organs, and more especially of Diseases of the Urethra. |
| 1831 | George James Guthrie. | 3 | On the Anatomy of the Parts concerned in Hernia.‡ |
| 1832 | George James Guthrie. | 9 | Anatomy of the Organ of Vision in Man, illustrated by Observations on its Structure in the Lower Animals.<br>On the Diseases of the Eye and its Appendages and the Treatment of the Same. |
| 1833 | Henry Earle. | 9 | On the Minute Anatomy and Physiology of the Urinary Organs. On the Diseases of the Same and their Treatment.<br>On the Anatomy of the Colon, and the Nature and Treatment of Some of the Diseases of that Intestine.§ |

* Wilson completed this course in his Arris and Gale Lectures of this year.

† Wilson, who died in this year, had arranged for a further course on "The Brain and Nervous System."

‡ This course of lectures proceeded amidst much disturbance until the fourth lecture, when they were wholly interrupted by a systematic and continued riot. The lectures were consequently suspended and the theatre closed by the advice of the law officers of the College and by the concurrence of the trustees of the Museum until the sanction of the Chancellor and judges had been obtained to a by law enabling the President and Council to repress any similar disturbances in future.

§ Earle continued this course in the Arris and Gale Lectures of the same year.

is to give publicity to the accompanying amplifications and corrections of my pamphlet. Many of them I owe to Mr. D'Arcy Power; upon others I have chanced in a research into the history of the College. As the "list" is given away, not sold, to anyone interested in medical history it is not likely that it will see a second edition.

I am, Sirs, yours faithfully,

VICTOR G. PLARR,
Librarian of the College.

The Library, Royal College of Surgeons of England, July 2nd, 1900.

## THE SOUTH AFRICAN COMMISSION.

*To the Editors of* THE LANCET.

SIRS,—As in the Crimea and in Egypt, so now in South Africa, war on a large scale seems to have as its invariable sequel accusations of neglect of sick and wounded involving mainly the Army Medical Department as responsible for the results, the conclusions of committees being hitherto impotent in the prevention of repetition of charges or of the conditions complained of. Another inquiry is in progress and it is a matter of profound importance to the accused department (for this is clearly the position of the Royal Army Medical Corps) that the proposed Commission should be so constituted as to contain within itself the means of eliciting the truth and the whole truth, and the requisite capacity to recognise and gauge the real import of the evidence; and from the facts adduced to fix the responsibility for shortcomings on the right shoulders and make proposals likely to prevent a recurrence in the future. Now, Sirs, when we note the tone of some of the debates in the House of Commons, the vacillation of the Government and the views expressed in the lay journals, I venture to think that to anyone bearing in mind the experience of the past and cognisant of army life, the duties of the Royal Army Medical Corps and the conditions under which its work has to be done in peace and in war, a feeling of grave scepticism will arise as to whether this Commission as proposed will be any more fruitful in results than its predecessors.

The original scope of the Commission as formulated by the Government was "to report as to the arrangements for the care and treatment of the sick and wounded during the campaign in South Africa" and to inquire especially into the complaints of negligence in regard to enteric fever; and to this end the Commission was constituted of three members—one judge and two medical men. And in view of the fact that the subjects embraced by it are mainly professional, requiring not merely "common sense," but a specially trained technical sense for their solution, the commission was one fairly capable of doing the duty entrusted to it. Mr. Balfour spoke of it as having "great qualities of knowledge and impartiality stamped upon it," and the Leader of the Opposition considered the medical members are "high-minded, straightforward men who will do their work well." Yet what do we find but the Government departing from their scheme, to which we must assume they had given reasonable thought, and agreeing to add two more members, neither of whom can have the necessary knowledge to guide them in such a professional inquiry, the numerical deciding power being now in the hands of those untrained to gauge the true import of the evidence and facts adduced! Moreover, the main objection to the original commission apparently was "that the inquiry would practically be in the hands of medical men," the view being held by some that medical men could not be relied on to act fairly in matters in which their fellow professionals were concerned, they presumably being deficient in that sense of justice and rectitude of purpose allowed to most men; and these are points which the profession would do well to lay to heart.

Further it would appear that the inquiry is to be extended to transport, &c. In the words of the leading Conservative journal, "the whole question of hospital administration at the seat of war and the general organisation and methods of the Royal Army Medical Corps will be thoroughly examined." And when cognisance is taken of this expansion the doubt still more is increased as to whether the Commission as proposed has the necessary capacity for the duties with which it is charged. In addition to what has been aforesaid, who among its members have that experience of war and that practical knowledge of the rules and regulations of the Service and the nature and work of the Royal Army Medical Corps and the conditions under which it is done as will entitle them to speak with authority on the matters to be inquired into?

Mr. Balfour himself expressed the possibility of the danger of unfairness to the army medical officers from the medical members owing to the former "carrying out their duties under conditions not very familiar to doctors and surgeons at home"—a danger augmented with a majority with everything to learn. And when we note the remarks of Mr. Burdett-Coutts *apropos* of himself we further recognise the possibility of injustice accruing either to the Department or to individual members. He is recorded to have said that in his grave indictment of the medical arrangements in South Africa he was originally in a position of a plaintiff, but now in that of a defendant of the great interest involved in the truth or untruth of his statement; and, going on to say that now the Government would call him as a witness to enable him to state his case with possibly the opportunity of producing other witnesses, he asks: "Was that enough in this case? What was the usual practice when a man was placed in his position? Had he not a right to put what questions he liked, to cross-examine the witnesses?"—questions which elicited cheers. Now it is apparent that the Department is the true defendant in this inquiry, and its position is exactly that which Mr. Burdett-Coutts details as characterising himself; and if these essentials to justice are requisite in the one instance why not in the other? Can it for a moment be said that the proposed Commission will contain within itself these essentials? What might go far towards placing it in a position to do for the Department what it cannot do for itself would be to add to it one or two independent army medical officers whose knowledge and experience would tend towards eliciting the whole truth and giving proper weight and importance to the facts adduced.

Well, Sirs, I take it for granted that the view of the Department is that neither in the Crimean nor in the Egyptian inquiry was justice meted out to it, and the possibility of a like fate befalling it in this instance has to be faced; not, of course, from set purpose, but from inability on the part of a Commission as proposed to decide on technical points and disentangle and rightly apportion its true responsibility among the more powerful army sections (including, of course, the War Office) which are also involved in this important and difficult inquiry. What does the country really want—a "scapegoat" for the relief of its feelings with a lapse into the old ways, as formerly, as soon as the excitement of war has passed away? Or is it for once thoroughly determined that the experience and teaching of the past shall not be lost, but shall bear such fruit as to make a recurrence of such departmental complaints an impossibility in the future? Have we solid grounds for such a hope?

I am, Sirs, yours faithfully,

FRANCIS H. WELCH, F.R.C.S. Eng.,
Surgeon-Colonel (retired), A.M.S.

Brandram-road, Lee, S.E., July 9th, 1900.

## "THE CAUSE OF CARIES OF THE TEETH."

*To the Editors of* THE LANCET.

SIRS,—Dr. J. Sim Wallace holds that the great prevalence of dental caries among civilised peoples is due to their eating soft and pappy foods requiring little mastication. Some years ago you were good enough to publish in THE LANCET a letter from me in which I urged the same view. My interest in the subject led me to read Dr. Wallace's work carefully directly it appeared, and I hope I may be permitted to say that I was greatly impressed by the closeness of his arguments and the scientific spirit pervading his book.

My original contention was that soft foods predispose to caries by leading to imperfect mastication and thus to defective nutrition and development of the teeth; and although I still venture to think that this may be a factor Dr. Wallace has converted me to his view that soft foods lead to caries essentially by modifying the buccal environment of the teeth—the teeth being no longer properly cleansed by coarse fibrous foods, the buccal secretions being no longer adequately excited, and so forth.

Regarding Dr. Wallace's remarks as to the tooth-brush not being altogether an unmixed blessing, it is significant that the very next day after reading them there consulted me a man, aged 22 years, who had never in his life used a tooth-brush, and he had 32 sound teeth in his head.

I feel convinced that if Dr. Wallace's views are taken to heart by the medical profession we shall do much to diminish caries and other defects of the teeth. I, indeed, believe with him that we have it in our power to rear a race having teeth every bit as good as those of our primitive ancestors.

May I take this opportunity of saying that there is, in my opinion, a further indictment to be made against the use of soft food. I believe we have in the imperfect mastication which foods of this kind lead to a clue to the long sought-for pathology of adenoids—a subject with which I am dealing fully elsewhere.

I am, Sirs, yours faithfully,

Wimpole-street, W., July 9th, 1900. HARRY CAMPBELL.

*To the Editors of* THE LANCET.

SIRS,—The cause of caries of the teeth must be one of universal distribution and I have for years expressed my opinion that it is the universal consumption of bread made from flour deprived almost entirely of "earthy matter"; every particle of bran, which contains nearly all the above, being removed therefrom, the mother's blood therefore is deficient in the constituents necessary to properly build up and consolidate the bones and teeth of the fœtus. Every generation will, I fear, get worse and worse unless something can be done to improve the character of the bread consumed. Now I am writing may I be allowed to say that I have met with two cases in which mothers have vaccinated themselves accidentally from their babes; it is, therefore, I should think, not so very uncommon. I am, Sirs, yours faithfully,

Donington, Spalding, July 10th, 1900. E. W. JOLLYE.

## "A PLEA FOR EARLY OPERATION IN CASES OF UNDOUBTED TUBERCLE OF THE LUNG."

*To the Editors of* THE LANCET.

SIRS,—The recent article in THE LANCET written by Mr. Foster Palmer on "A Plea for Early Operation in Cases of Undoubted Tubercle of the Lung" reminds me of a paper that I wrote some years ago but did not publish. By early operation I suppose the writer means such to attempt a radical cure, and not a palliative measure such as incision and drainage of advanced phthisis with pleural adhesions. None of the present procedures are well adapted for a radical excision, and such is rarely attempted, the fears of pneumothorax and hæmothorax deterring the surgeon from operating. But in the course of every lung case there must happen a time when, though the chance of medical cure is past, there still exists a time for radical excision before it advances too far. Let us take a case of a young person with phthisis in the apex of one lung which has gone on to cavity formation and in which there are as yet no pleural adhesions. If excision be desired how shall we proceed? In the article referred to the procedures are as follows. 1. To sew the pulmonary pleura to the costal pleura beyond the seat of the disease before operating. In such a case as the above this would be impossible. It would do in a case of large cavities with no pleural adhesions and some reasons against excision, such as the other lung affected, and then would only be as a preliminary to incising and draining. 2. To trust to previous existence of adhesions. This is not the case as above and if present would prevent a radical excision. 3. To excite artificial adhesions. This is dangerous, uncertain, and leaves a pathological lesion and a breeding-place for tubercle behind in a tuberculous subject. 4. Artificial inflation. This is unsatisfactory and the moving lung would hinder the operation. The method which I proposed was to collapse the lung artificially on the affected side by passing into the pleural cavity a suitable medium such as sterilised air, or preferably sterilised water or a weak antiseptic solution. This treatment is commenced some days before opening the chest and may be done by placing a small tube in one of the lower intercostal spaces and opening into the pleural cavity and fitted with tubing and stopcocks. The medium is passed in certain quantities daily and gradually, till the lung is sufficiently collapsed, and completed on the day of operation, the patient being thus slowly accustomed to using only one lung and being spared any sudden collapse. Now the pleural cavity can be opened as safely as a peritoneal cavity, due care being taken in the technique of the operation.

As regards the operation itself I suggest, first, a flap comprising all the tissues down to the costal surface of the costal pleura, and this being well demonstrated and all hæmorrhage

checked can be opened either by a small flap or by incision, semilunar or straight. The affected lung is now seized with forceps and drawn out and excised. The stitches necessary for this may be done as cobblers' double stitch. The pleura is now sewn up after the lung is replaced, the flap adjusted, and the operation completed; but before the costal pleura is sewn up the chest should be again filled with the medium.

If this medium is not absorbed and the lung repaired in due time aspiration might be performed. By this method even one whole lobe might be bodily removed after ligaturing its base and if the side was not subsequently filled with lung (other lobe or lobes and also by expansion of the lung of the other side), even after aspiration, thoracoplasty might be performed and the side of the chest adjusted to the size of the lung left.

By this method, not only the lungs, but also other thoracic viscera might be dealt with.

I am, Sirs, yours faithfully,

Newcastle-on-Tyne, July 6th. GEORGE LANE.

## "LOSS OF MEMORY AND OF SENSE OF PERSONAL IDENTITY."

*To the Editors of* THE LANCET.

SIRS,—Your annotation on "Loss of Memory and of Sense of Personal Identity" in THE LANCET of June 9th, p. 1670, reminds me of a case which may be of interest in connexion with this subject.

Two or three seasons back, towards the end of cub-hunting and just before regular hunting commenced, a gentleman, a tall, strongly-built young fellow about 25 years of age, "trained on" with his horse from a station in the Midlands to another some 30 miles distant to meet the hounds. He made an early start—at that time of year hounds meet early—and possibly did not get much of a breakfast before starting. He rode through one run, not a particularly severe one. Then, as hounds were moving off to draw for another fox he found that he was lost. He had no recollection as to who he was, of where he had started from in the morning, of where he was, or of what hounds he was out with.

At a loss to know what to do, he rode up to another man out and asked him if he would tell him what pack they were out with. By one of those extraordinary coincidences which in a novel would be voted very far-fetched, the man he rode up to to inquire of was his own cousin. More remarkable was the fact that neither knew that the other was out; that they resided more than a hundred miles apart, and that while the patient had come by a train to the meet from some 30 miles west, his cousin had come the day before from a hundred miles east, and was out from the house of his host. The cousin, also, though recognising the patient at a glance, did not know where he was at the time staying. He, the cousin, in his turn, called to his aid his host and they put the patient in charge of a second horseman, directing him to ride close to the patient and not to leave him till he had deposited him at my house.

On my return from a journey I found the patient on a sofa in my consulting-room covered with blankets and my wife administering hot tea. He was very cold, his most prominent symptom being weak heart action—in fact, the usual symptoms of concussion and shock after a heavy fall. I had him put to bed and treated on general principles; and in the course of 24 hours his memory returned. Then I found that he had not long returned from Buluwayo and the Matabele rebellion, where he had been "just to see what was going on." He had suffered severely from malaria and it was pretty plain that the malaria was then by no means all out of his system. A couple of days before, riding a young horse, hunting, he had had one or two falls, but nothing to stop him. His heart action for the next 48 hours remained weak and unsatisfactory. I advised him that hunting was, for the present, absolutely out of the question for him. The chances of a recurrence of the symptoms, or of exhaustion from heart fatigue in a lonely place—where he might possibly lie in a state of exhaustion for hours before he was discovered—appeared to me to be altogether too great a risk to run. It was not a very pleasing opinion to him as he had just got a stud of horses together to begin the season with. However, he acted upon it and sent his horses up for sale. He made a complete recovery and has hunted regularly for the last two seasons and, so far as I know, has never had any return of the symptoms.

I am, Sirs, yours faithfully,

Stratford-on-Avon, June 14th, 1900. HARRY LUPTON.

## "SIR W. FOSTER AND THE MEDICAL ARRANGEMENTS AT THE SEAT OF WAR."

*To the Editors of* THE LANCET.

SIRS,—In an annotation in your issue of July 7th you asked that I should furnish a reference to a statement by the late Professor De Chaumont which you have been unable to verify. If you will refer to the seventh edition of Parkes's Hygiene, edited by Professor De Chaumont, you will find on page 664 the following:—

"*Amount of hospital accommodation.*—This must not be less than 25 per cent. of the force with reserve tents in rear in case of need."

With reference to the mortality of 21 per cent. in the cases of typhoid fever in South Africa I said in the debate that if that represented the death-rate under the horrible conditions described by Mr. Burdett-Coutts, I believed that with proper care and nursing it might have been reduced to 12 per cent. I see no reason to alter that opinion. On the contrary, I am confirmed in it by the mortality of 7·38 per cent. recorded by Professor Victor C. Vaughan of the University of Michigan for the typhoid fever in camp in the United States army during the recent war and Brandt's mortality of 7·8 per cent. calculated on 19,017 cases.

I am, Sirs, yours faithfully,

House of Commons, July 11th, 1900. WALTER FOSTER.

*** We are obliged to Sir Walter Foster for so courteously giving the reference to Parke's Hygiene, 7th edition. To provide hospital accommodation in the proportion of 25 per cent. for an army such as ours in South Africa would mean at least 50,000 beds, a provision which it seems to us would seriously interfere with the mobility of the troops as a fighting force. Professor Victor C. Vaughan's figures are, we understand, those of cases treated in a stationary camp in their own country and not at the seat of war; while Brandt's figures refer, we believe, to cases which had not been exposed at all to the conditions of war. Will Sir W. Foster be good enough to compare the enteric fever statistics of the army in South Africa with those of the London Fever Hospital as given by Murchison, or with those of the Metropolitan Asylums Board for ages corresponding to those of soldiers, say from 20 to 30 years?—ED. L.

## SICK AND WOUNDED OFFICERS' SURGICAL AND MEDICAL AID COMMITTEE.

*To the Editors of* THE LANCET.

SIRS,—The outbreak of hostilities in China and on the West Coast of Africa must, it is feared, result in the early arrival of many naval, military, and other officers invalided home from the operations now being carried on in those quarters. Would you kindly allow me to make known through your columns that this Committee, originally formed to provide medical and surgical aid for those who have suffered in South Africa, will be equally prepared to render assistance to officers returning home from these other theatres of war. Applications should be addressed to the Hon. Arthur Brodrick, at Hampden House.

I am, Sirs, yours faithfully,

ABERCORN, President.

Hampden House, Green-street, W., July 11th, 1900.

## CIVIL SURGEONS ON THE WEST COAST OF AFRICA.

*To the Editors of* THE LANCET.

SIRS,—In both THE LANCET and the *British Medical Journal* the Colonial Office is advertising for temporary civilian medical officers for an expedition—presumably military—to Coomassie. The emoluments offered for this service are £30 a month for a six months' engagement, free rations, a gratuity of ten days' pay for *every complete month served on the coast*—time occupied on the passage out and

home apparently not counting towards the gratuity—and a free passage out and home. When these terms are compared with the War Office remuneration to civilian surgeons in South Africa—viz., £1 a day, 3*s.* a day allowance, free rations, a horse and servant, two months' pay as a gratuity and a free passage out and home—and when one considers that the climate of this part of the West Coast is the most deadly along that most deadly littoral, while that of South Africa is, under ordinary conditions, perhaps the best in the world, the total inadequacy of the pay offered for the temporary but arduous and deadly work demanded is at once apparent. If there is any sliding scale of remuneration based on the risks involved and the nature of the work entailed, then the pay and allowances of these West Coast officers should be at least double those of their South African *confrères*. Men must be down on their luck indeed—professionally, socially, and financially—to accept this work at the rate offered, and I can hardly congratulate the Colonial Office on the type of medical man they are likely to obtain by their munificent offer.

I am, Sirs, yours faithfully,

July 10th, 1900. CANTAB.

## "THE NATIONALISATION OF TRINITY COLLEGE, DUBLIN."

*To the Editors of* THE LANCET.

SIRS,—I do not think that a controversy can be profitably pursued on the lines of the letter of your correspondent "Irish Graduate." He asks me to say, "Is Trinity College to be the only place of collegiate education for young Irishmen?" To which I reply that I have not heard that anyone outside the walls of a lunatic asylum has suggested anything of the sort. My proposition is that the University of Dublin and its College should be absolutely free from even the suspicion of sectarian bias and should open their arms to alumni and intending graduates in arts coming from educational institutions of any religious type and that the education of those intending graduates should be left unrestrained to the respective institutions. Provision already exists, I believe, for the divinity education of these graduates in every religious community outside Trinity College, and I propose, simply, that that faculty shall share with others the position apart from Trinity which they occupy.

Your correspondent takes his stand upon the numerical predominance of Roman Catholics in Ireland, but I differ from him in the creed that university graduation or collegiate education should depend altogether on numerical preponderance. People who argue in this way must, to be consistent, object *in toto* to the education, on the lines of European civilisation, of any individual resident in an Eastern country like India, where the non-European community is enormously preponderant. Education ought to be cosmopolitan. I have already said that everyone knows that neither the Roman Catholic priesthood nor the authorities of Dublin University will permit desectarian education if they can help it. The whole question can, however, be settled by turning a deaf ear to the selfishly unreasonable demands of the priesthood and by peremptory desectarianism of Trinity College, and a Government endowed with a backbone could do it without trouble, but our present rulers are too busily employed in trying to catch the votes of the Nationalist party in anticipation of the general election to think much about Irish middle-class education.

I am, Sirs, yours faithfully,

A.M., M.D. DUB. UNIVERSITY.

ERRATUM.—In a letter headed "The Nationalisation of Trinity College, Dublin," which appeared in THE LANCET of July 7th, p. 50, the following correction should be made. Col. 2, par. 4, line 3: "A truly national university must be ....." should read, "A truly national university must *not* be ....."

LUNACY IN SOMERSET.—At a meeting of the Somerset County Council held on July 2nd it was reported that there were at Wells Asylum 339 male and 502 female inmates and at Cotford Asylum 195 male and 270 female inmates, making an aggregate total of 1306. For the corresponding quarter of 1899 there were 1284 patients, 532 males and 752 females.

## PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending May 26th are as follows: remaining at the beginning of the week, 100; admitted, seven; discharged, 19; died, six; remaining at the end of the week, 82. The totals up to the end of the week are as follows: cases, 247; deaths, 89; discharged, 76; "contacts," 1407; "contacts" remaining, 115; cases among "contacts," seven.

The number of new cases during this week has been lower than in any week since that ending March 10th. The following table shows the weekly returns from the beginning:—

| Week ending | Cases. | Week ending | Cases. |
|---|---|---|---|
| Jan. 27th | 1 | March 31st | 23 |
| Feb. 3rd | 0 | April 7th | 29 |
| ,, 10th | 0 | ,, 14th | 29 |
| ,, 17th | 0 | ,, 21st | 16 |
| ,, 24th | 2 | ,, 28th | 27 |
| March 3rd | 2 | May 5th | 38 |
| ,, 10th | 5 | ,, 12th | 23 |
| ,, 17th | 12 | ,, 19th | 23 |
| ,, 24th | 10 | ,, 26th | " |

This sudden and great reduction is not as easily accounted for as an equivalent rise would have been.

On May 1st, 2nd, 11th, 13th, and 21st cases of plague occurred at Manly. This town, which had remained uninfected, is situated at the northerly end of the fiord which forms the outer harbour and is about seven miles from Sydney. It can be reached by a journey of 13 miles by road which involves crossing water by two horse ferries; but communication is usually made by steamer. It is a favourite place of residence for people engaged during the day in Sydney and considerable numbers pass to and fro regularly; on Saturdays, Sundays, and other holidays many thousands of people resort there. The only feature which the four later cases had in common was their occupation at one of the wharves. The first patient was a shopkeeper in the town who had visited two warehouses in the neighbourhood of the infected wharves at Sydney three days before he fell ill; it was supposed at first, therefore, that he had been infected there, and it seems certain that his sole connexion with the Manly wharf consisted in his traversing it as a passenger. The ferry-boats carried rats and it was thought that some must have got ashore notwithstanding the precautions taken. Accordingly, as soon as the first case occurred steps were taken to trap and examine the rats on shore, and especially those about the wharf and the street nearest to it. Poison had long been laid for them. Many specimens, both alive and dead, were submitted and examined; nearly all had enlarged livers and spleens, but these signs could not be connected with plague after very careful examination, and were provisionally ascribed to phosphorous poisoning. The search was continued, it being assumed that where several cases of plague arise plague-rats must exist; and long after it began to seem likely it would prove interminable one putrid carcass was met with which afforded probable but inconclusive evidence of plague. Shortly afterwards a rat was sent in which furnished unmistakeable evidence of plague. Probably the trappers had worked too close to the wharf from which most of the rats had disappeared before they began their work.

May 28th.

The returns of plague in Sydney for the week ending June 2nd are as follows: remaining at the beginning of the week, 82; admitted, 17; discharged, eight; died, three; remaining at the end of the week, 88. The totals up to the end of the week are as follows: cases, 264; deaths, 92; discharges, 84; "contacts," 1502; "contacts" remaining, 122; cases among "contacts," seven. Since the Government offered a capitation fee for rats taken to appointed receivers nearly 25,000 have been paid for; the number for May was above 19,000. Most of them were taken in parts of the city and its neighbourhood which are known to carry infected rats, but a small proportion from more distant areas. To those who are aware of the multitudes in which rats swarm in and around Sydney these totals appear insignificant. However, it must not be forgotten that there was a time when the public had not been aroused to the necessity for killing rats

and that it continued long after the epidemic in man had become alarming.

A further supply of four litres of Yersin-Roux serum has arrived from Paris. At the hospital the opinion so far formed seems to be that very large quantities are necessary to produce decisive results; or, rather, that much larger quantities than have hitherto been used there are required. Still, the experience has been short, yet it is thought that intravenous injections do not produce a more striking effect than subcutaneous injections of twice the quantity—that is, of 40 c.c., reference being had merely to the immediate and not to the ultimate effect. Injection into the veins is made with a short needle; with a little practice this appears to be easy and the risk of penetrating both walls of the vein to be slight. At first the vein was dissected out; it is well that this tedious and rather delicate operation should be unnecessary.

June 5th.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Decline of the Plague.—More Patients for Paris.—The Water-supply of Bombay.*

NOT since the epidemic broke out in 1896 has such a low death-rate from plague been recorded as for the past week. The mortality throughout India has declined to 319, as compared with 417 deaths for the week previous. Bombay city returns 97 deaths notwithstanding its rate of mortality is 67 per 1000 per annum—a total mortality of 1183 when it ought to be under 600. Calcutta returns 125 and these are almost entirely accounted for by the excess mortality. The figures for Calcutta prove for themselves that very few cases of plague occur in the city which do not get known to the authorities either before or after death. This accuracy in the returns is due to the system of inquiry and registration adopted. The deaths are carefully recorded every day at the burning ghats and burial-grounds. A list of deaths is made out and inquiry is made by medical officers into the circumstances of each death. If the clinical history obtained points to plague the death is returned accordingly. Constant inquiry and investigation in every part of the city bring to light a certain proportion—roughly, say, one-third—of living cases. Disinfection follows every doubtful death. This method has proved itself so accurate that taken over a long period the amount of plague recorded and the excess mortality balance each other. There has been no other epidemic disease to complicate the system and in view of the secrecy adopted by the natives it seems the only practicable method of procedure. Notwithstanding the satisfactory decline cases still continue to be returned from widely scattered districts. Bengal gives 37, the Bombay Presidency 32, Karachi 12, and Aden five.

I regret to hear that no less than ten privates of the 1st Royal Scots Fusiliers and three drivers and gunners of the 24th and 52nd Field Batteries have sailed for treatment at the Pasteur Institute at Paris on account of bites from animals suspected to be suffering from rabies.

After a heavy fall of rain with storms in various places the weather throughout India has again been unpropitious and the real monsoon can hardly be said to have arrived. The south-west current is reported to be weak and unsteady and the welcome rainfall on the west coast of the peninsula is declining.

I have from time to time had occasion to report upon the water-supply of Bombay. Generally of abundance, the quantity has been seriously affected by last year's drought, and while hitherto considered unquestionable in quality it is now found to require filtration. The plan recommended is to construct covered filters outside the reservoirs. Though this will prove more costly than placing them inside the distributing basins there would be greater facility in looking after and maintaining the filters as the catchment basins are some distance from the city. The municipal authorities are justly proud of the water-supply and there is little doubt that with the precaution of properly constructed and well-maintained filters Bombay will be supplied with water second to none in the dependency. As I pointed out in a previous letter, there is some evidence that the amount of enlarged spleens (as representing the malarial condition of a place) is influenced considerably for the better by filtration of the water-supply. An explanation of this is still wanting.

June 24th.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*The Housing Problem.*

MANCHESTER and Salford are each confronted with the perplexing and, so far as can be seen at present, almost insoluble problem of how to provide decent and healthy house accommodation for those who can only afford to pay 4*s.* or perhaps 5*s.* a week rental. It is forced on them by the necessity there is for clearing away insanitary dwellings—which unhappily are just those most apt to be overcrowded—if the public health is to be maintained or improved. For the last 15 years the corporation of Manchester have been gradually doing away with back-to-back houses. They are ill-ventilated, and the closets are oftener bad than not, sometimes opening on to the street, sometimes being built into the side of the house, with perhaps walls soaked and leaking into a living room and with a bedroom over. To live healthily under conditions even somewhat better than these would be difficult for the most cleanly, but, as a rule, such dwellings are occupied by the lowest of the people who by their own careless and filthy habits go far towards securing a heavy death-rate. The Sanitary Committee have during the last 15 years closed 3522 insanitary houses, but the occupants have been re-housed by the corporation, generally, however, having had to pay a higher rent. In many cases, no doubt, the original tenants have gone elsewhere or crowded into houses already tenanted, and their places have been filled by a somewhat higher class of working people. This question was discussed at the last meeting of the City Council, and the proposed closing of certain houses in Hulme by the Sanitary Committee was referred back. The mover of the amendment said that the work of demolition proceeded more rapidly than the provision of new dwellings and hence overcrowding prevailed. Within a recent period he stated that out of 583 houses closed in Hulme 389 had been demolished and over 1500 people had had to go into houses where families were already in occupation, and that of the 13,000 houses built in Manchester during the past 10 years none were to be let at 4*s.* a week, which was the highest rent the people he referred to could pay, though they were for the most part honest members of the labouring classes. With the increasing value of town sites it seems that four-roomed cottages cannot be built to let at 4*s.* a week without loss. The speaker advocated the provision of what are called "barrack dwellings." Those that have been built in Manchester are tenanted, but it is a complaint that the rooms are too small, which might be avoided in the future. One of the objections to these buildings of many storeys is, not that the parents have to go up and down so many steps, but that it increases the difficulty of the children getting proper air and exercise. The same problem troubles our neighbours of Salford. In course of time some hundreds of dwellings have been demolished, and builders are now beginning to use up the old bricks to provide those displaced with new houses. But the old rent for the four-roomed houses was 3*s.* 6*d.*, while that for their less roomy and less commodious successors will be 6*s.* 6*d.* The addition of 2*s.* or 3*s.* a week to the rent is a serious matter to a woman, say, who only has 12*s.* or 14*s.* a week for household expenses. There is no great wonder that our town-bred population grows up weakly and stunted and that the "corner boys" and "hooligans" of our streets excite pity as specimens of a decaying race and disgust as an illustration of the results of our methods of bringing up our boys. It is not surprising that scarcely one-half of our town-bred young men come up to the low standard of physique required in our recruits. Nor is it likely to alter for the better while life in the slums is what it is and while life in the barrack flats must be too confined for the healthy growth and development of the coming race. Easy and cheap transport to the outskirts of our towns would do away to a great extent with the need for the working classes to live close to their work. Houses would be cheaper than in town and the children would grow up under more natural and healthy conditions than at present, much to their advantage in mind and body. In these days, when peace and goodwill among the nations seem farther away than ever, one cannot but view with concern the rapid physical, and, one fears, moral degeneracy of our town population.

*The late Dr. D. J. Leech.*

Manchester has suffered stroke upon stroke of late from the hand of death, and the medical profession is left much the poorer by the loss of a physician so able, so conscientious, and so universally respected as Dr. Leech. His painful illness was borne with fortitude and resignation touching to witness in one whom we had known for years as an almost perfect illustration of strength and energy, of the sound mind in a sound body. It is remarkable that three, if not four, members of the infirmary staff should have fallen victims one after the other to some form of the same disease.

July 10th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Public Health Congress, Aberdeen.*

THE official programme now issued shows that the proceedings of the Congress of Public Health to be held at Aberdeen will last from August 2nd to 7th inclusive. The patron of the Institute (the Royal Institute of Public Health) is Her Majesty the Queen. Lord Balfour of Burleigh, Secretary for Scotland, is patron of the Congress and Lord Aberdeen is the president, while Lord Provost Fleming (Aberdeen) is the honorary president. Professor W. R. Smith, M.D. Aberd., D.Sc., F.R.S. Edin. (London), is the president of the Institute and Mr. Henry C. Jones (197, High Holborn, London, W.C.), is the honorary secretary; Professor Matthew Hay, M.D. (Aberdeen), and Mr. Kenneth Cameron (chief sanitary inspector, Aberdeen), are the honorary secretaries of the Congress. The various sectional presidents are as follows:—Preventive Medicine and Vital Statistics section: Dr. W. J. Simpson, Professor of Hygiene, King's College, London. Bacteriology and Comparative Pathology section: Dr. D. J. Hamilton, Professor of Pathology, University of Aberdeen. Chemistry and Meteorology section: Dr. C. Hunter Stewart, Professor of Public Health, University of Edinburgh. Architecture and Engineering section: Mr. John Honeyman, R.S.A., F.R.I.B.A., architect, Glasgow. Municipal and Parliamentary Hygiene section: Dr. Robert Farquharson, M.P. The various conferences will meet in Marischal College, commencing on Monday, August 6th, at 11 A.M. The president of the Medical Officers of Health Conference will be Dr. John C. McVail, medical officer of the counties of Stirling and Dumbarton; of the Sanitary Inspectors' Conference, Mr. Peter Fyfe, F.R.S. Edin., chief sanitary inspector of Glasgow; of the Veterinary Surgeons' Conference, Mr. W. Williams, F.R.C.V.S., principal of the New Veterinary College, Edinburgh.

*The Illness of Professor Ogston of Aberdeen University.*

A telegram from South Africa recently received in Aberdeen stated that Professor Ogston's illness was enteric fever, that he was still a patient in hospital at Bloemfontein, but was progressing favourably.

July 10th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Principal Medical Officer in Ireland.*

DURING the absence on leave extending to August 4th of the Principal Medical Officer in Ireland his duties will be performed by Lieutenant-Colonel F. G. Adye-Curran, Royal Army Medical Corps.

*The Hospital at Bloemfontein.*

In connexion with the treatment of the sick and wounded at Bloemfontein it is interesting to note that the Raadzaal (Parliament House) there has been converted into a hospital and is under the charge of Colonel W. W. Kenny, R.A.M.C., well known in Dublin. Under him are Surgeon Henry Moore of the City of Dublin Hospital (a volunteer), Lieutenant Archer, R.A.M.C. (also from Ireland), with Surgeon Williams of London. Eight nursing sisters are attached to the hospital in addition to the usual staff of orderlies.

*Military Manœuvres and the Belfast Water-supply.*

At a meeting of the Belfast Water Commissioners on July 5th attention was publicly called by one of the members to the statement that part of the Mourne range of mountains had been scheduled as a portion of the area over which the summer military manœuvres are to be conducted, and that this part so specified actually included the catchment area purchased by the Belfast Water Commissioners. The Water Commissioners have (or will shortly have) paid a million of money in connexion with this scheme, and in order to ensure the purity of their catchment area they had bought it up, minerals and all. Very naturally the Water Commissioners, seeing what has taken place recently in Africa, protest very strongly against any risk of their catchment area being in any way interfered with owing to the great risk of the sanitary conditions accompanying an army in the field, and they call upon the Belfast Members of Parliament and the city corporation to use their influence to prevent such an occurrence taking place as their catchment area being made a camping ground for military manœuvres. Some years ago, the Commissioners having restrained the colonel of a regiment stationed in Belfast from washing his dogs in one of their reservoirs, that military authority in martial dudgeon refused to allow the regimental band to play any more in the pleasure grounds of the waterworks, whereupon the Commissioners were much blamed by the Press for needlessly interfering with the recreations of the people. The Press, however, it is hoped now will uphold the Commissioners in their rightful efforts to prevent defilement of their catchment area at the Mourne Mountains.

*North of Ireland Branch of the British Medical Association.*

The twenty-second annual meeting of the North of Ireland Branch of the British Medical Association was held in the town-hall, Portrush, on July 5th. From the annual reports it appears that the society is in a most flourishing condition, there being 271 members, of whom 153 are country and 118 from Belfast. Financially there is a balance in the treasurer's hands of £13 18*s.* 9½*d.* The following office-bearers for 1900–1901 were then elected:—President: Professor Byers. Vice-Presidents: Dr. J. S. Darling (Lurgan) and Professor Lindsay. Secretary: Dr. W. Calwell. Treasurer: Dr. George Gray (Newcastle). Members of Council—Country: Dr. E. C. Thompson (Omagh), Dr. J. Stuart (Ballymena), Dr. J. C. Martin (Portrush), Dr. J. C. Hall (Monaghan), Mr. St. George (Fishburn), Dr. Agnew (Lurgan), Mr. R. Gray (Armagh), and Dr. D. Gaussen (Dunmurry). Belfast members: Dr. John Campbell, Dr. A. Dempsey, Professor Sinclair, Dr. M'Kisack, Professor Whitla, Dr. McCaw, Dr. E. C. Bigger, and Dr. A. B. Mitchell. The President (Dr. J. C. Martin) read an interesting paper on Portrush from a Medical Point of View.

*The Samaritan Hospital, Belfast.*

A summer fête and fancy fair was held at Norwood Tower, Belfast (kindly lent by the ladies and gentlemen of the Henderson family who placed their beautiful grounds at the disposal of the promoters of the undertaking), on July 6th and 7th. The object was to clear off a debt from the Samaritan Hospital. Dr. St. Clair Boyd, one of the surgeons to the hospital, has offered in the most generous manner to be responsible for any deficiency in case the debt is not cleared off. A sum of about £300 has been raised.

July 10th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Last Lecture of Professor Potain.*

ON Tuesday, July 3rd, at 10 A.M., Professor Potain in the theatre of the Charity Hospital gave his last lecture upon Clinical Medicine. The rules as to age limit are inflexible. Hospital physicians must retire at the age of 65 years and hospital surgeons at 62. If, however, the physician is also professor in a clinic he may hold his appointment up to the age of 70 years, and if he is a member of the institute he may continue until he reaches the age of 75 years. Professor Potain, who is 75 years of age, has thus gone to the extreme limit which his accumulated offices allow, and he resigns his chair while still in full possession of his faculties and enriched by his long experience. Few medical careers have been so worthy as that of the venerable professor. A consummate clinician whose labours on diseases of the heart and lungs have gained him a world-wide reputation; an exemplary professor who for 30 years without a break took up his parable before an audience composed of listeners of every

nationality very many of whom were past masters in their art; a physician who for 40 years arrived at 8 A.M. to the minute in his wards when he saw all his poor patients whose claims were never neglected for those of the rich and mighty; a public man whose retirement meets with universal regret and who is everywhere respected; in addition to all this he is absolutely upright and kind-hearted to a degree which no one who knows him can forget. Overwhelmed as he was by requests for a consultation he never would raise his fees—a fact with which his younger colleagues would sometimes reproach him—but whoever asked for his opinion, even among the humblest, was sure of getting it, and that, too, very often without any fee. These, then, are the reasons why throughout France no physician is regarded with such practically filial respect as "Father Potain," to give him the name by which he is generally known. When, therefore, the day dawned upon which one so loved had to resign his chair and his hospital work it is easy to conceive the cruel wrench which the parting would give him. Such a feeling was widespread, and by no concerted action but on their own initiative all his pupils and many of his friends attended his last lecture. There in that throng, so evidently permeated by an emotion no less marked because restrained, were Professor Bouchard, Professor Dieulafoy, Professor Guyon, Professor Brissaud, Déjerine, Gaucher, Oulmont, Gourand, Moutard-Martin, Duflocq, Vaquez, Marey, Teissier, and many more old pupils who have now become teachers. Professor Potain began his lecture just in his usual calm way and pointed out the remarkable harmony which existed between the results of a radiographic examination of the heart and the results obtained by stethoscopy—it seemed as if he wished his last words as professor to be concerned with his favourite study of the heart, by doing homage to the modern discovery, owing to which that study had entered on a new road. Eleven o'clock struck, the master stopped, and in the midst of a dead silence announced that he had given his last lecture. "I wish," he continued, "to say a word or two in memory of Corvisart who, 100 years ago in this very theatre, created the first course of clinical medicine in France. I wish to thank my colleagues, my pupils, my friends, whom——" His voice failed and he stopped with his eyes full of tears. Thunders of applause burst through the theatre, during which his pupils rushed towards him and escorted him to the door. There the Professor fell into the arms of his old pupil Dieulafoy, who warmly embraced him. He then went up the staircase, which was lined with old pupils and friends, whom he saluted and all of whom were visibly moved. Then slowly and sadly crossing the quadrangle, he left the hospital for the last time.

*Definite Lesions in Prehistoric Bones.*

M. Zambaco of Constantinople recently showed before the Academy of Medicine a series of photographs of human bones collected in Upper Egypt and dating back some 8000 years. Alterations of a destructive or hypertrophic nature, such as suppurative osteitis, exostoses, eburnated surfaces, and the like were evident upon the bones of the skull, the limbs, and the vertebral column. Some of these M. Zambaco considered were due to syphilis and others to tuberculosis. M. Fournier said that he did not consider that the lesions of which M. Zambaco had shown photographs gave any definite evidence of having been caused by syphilis. It is next door to impossible to affirm the existence of syphilis simply from the alterations exhibited by the bones, for a variety of diseases give rise to alterations in the bones exactly similar to those produced by syphilis. Not only do ordinary injuries give rise to exostoses exactly comparable to those produced by syphilis, but varicose ulcers give rise to hyperostosis of the tibia at the border of the ulcer which differs in no way from syphilitic periostitis. M. Fournier, therefore, was of opinion that a simple inspection of a bony lesion was not enough to enable the observer to determine its origin.

July 10th.

## ROME.

(FROM OUR OWN CORRESPONDENT.)

*Tuberculosis in Rome.*

AT a recent meeting of the Società Lancisiana di Roma Professor T. Gualdi, chief medical officer of the Bureau of Hygiene, gave some interesting particulars regarding tuberculosis in Rome. While, he said, the population of the city had increased from 350,000 in 1885 to over 508,000 in 1899 the number of cases of tuberculosis had remained about the same, and it might therefore be inferred that there had occurred a relative diminution in the prevalence of the disease. But even if the proportion had remained the same there would still have been cause for satisfaction, because as the population increased so did the sources of contagion. Pulmonary tuberculosis, which on account of the greater ease of diagnosis afforded a better guide than other forms, accounted for over 900 deaths out of a total for all forms of 1500. A diminution had taken place in the number of abdominal, meningeal, glandular, and miliary cases, which (except the last) were the usual index of infection by the digestive tract. In regard to the morbidity there was little to guide one since the hospitals reported only the gravest cases. The number of cases of pulmonary tuberculosis might, however, be put down as being at least three times as great as the number of deaths—in other words, it might be said that every year there were 3000 phthisical subjects in Rome. A good deal had been done in the direction of prophylaxis, but much remained to be done. Tuberculosis of animal origin had been reduced to a minimum. No tuberculous meat was eaten and milk no longer presented serious dangers. Santori had found bacilli constantly present in the sediment of the milk supplied in Rome which resisted acids after staining with Ziehl's solution and yet were not tubercle bacilli. These were constantly present in the normal fæces of the cows. But no bacilli capable of causing infection were found. The hygienic condition of the dairies had improved immensely. The use of tuberculin had become general and gave splendid results. On notice being given by the authorities of the slaughterhouse of any cow with tubercle the cows of the dairy from which the animal came were at once tuberculinised. All cows were now so examined once a year. At first there was a great difference between the number of cases in oxen and the number in cows, but now there was the same proportion in both—viz., 6 per cent.—of those slaughtered, and in the greater number the tuberculosis was circumscribed. Since cattle caught the infection from man it was well to keep them out of the city, although this rendered supervision more difficult. In regard to disinfection this had been carried out during the last five years in all houses where death from phthisis had occurred and in the houses of all phthisical patients sent to hospital. Excellent results had been obtained by washing the floors with boiling caustic soda and whitewashing the rooms with lime. All second-hand furniture and carpets sold ought to be disinfected and eventually this would be done. The isolation of patients, Professor Gualdi thought, would not be secured without a vigorous propagation of the doctrine of infection. In the hospitals it was already well carried out and even in tenement houses it began to be practised as its necessity became better understood. In this connexion he dwelt on the importance of early diagnosis. In all public places in Rome placards forbidding spitting on the floors had been put up and spittoons supplied, and the same had been done in the houses of the working-classes. Instructions in the various hygienic measures for preventing the spread of the disease had been issued to the public. Professor Gualdi added that he believed the low relative proportion of cases of tuberculosis in Rome to be due to the backward state of industries, with the developmeet of which an increase in the number of such cases might be expected. In the discussion which followed the reading of Professor Gualdi's paper several speakers, while praising the work already done by the Municipal Bureau of Hygiene, commented on the absence of precautions against infection in the schools, and some advocated a system of medical inspection of the school children for the purpose of eliminating all tuberculous subjects, for whom special permanent schools—sanatorium schools, as suggested by Baginsky at the Congress of Naples—should be established. It was even urged that the Bureau of Hygiene should take up the question of the gratuitous feeding of school children by the Government. One speaker deplored the insanitary condition of the public offices, courts of justice, post offices, &c., and was not surprised that until the authorities provided more efficaciously for the cleanliness of the places immediately under their care there should be a disposition on the part of the public to ridicule the prohibition against spitting. In the course of his reply to these criticisms Professor Gualdi remarked that a great practical difficulty in the way of securing obedience to the injunction against spitting was the

want of a good portable pocket spittoon. The responsibility for the hygiene of public offices lay, he said, not with the municipality, but with the Government. He entered heartily into the scheme of school canteens which had been established in Belgium at trifling cost. He admitted the deficiency of hygienic supervision of the schools, the need of special schools, of sanatorium schools, &c., but the resources of a Municipal Bureau of Hygiene were unequal to the task of carrying out such a vast programme.

*The Anti-malarial Campaign.*

The anti-malarial campaign in the Agro Romano has now fairly begun, the eight ambulances organised for it by the Red Cross Society having left Rome for their various stations at the end of June. A day or two previously they had been inspected by the President-General of the Society, Conte Taverna, who was accompanied by Conte Della Somaglia, President of the Roman Committee, and by the medical inspector, Professor Postempski. The wagons were constructed at the arsenal of Turin expressly for this service and are made in such a way as to be convertible in time of war into transports for the wounded. Every wagon, in addition to the ambulance stretchers, carries three cases containing surgical instruments, medical appliances, and medicines (compressed and liquid), and a fourth case with miscellaneous stores and a saddle for the use of the medical officer in the event of his services being required at places not accessible by carriage. The *personnel* wear the uniform adopted by the Red Cross Society for Africa—flannel tunic and trousers with helmet and alpine boots for the officers, and linen coat and trousers with helmet for the nursing attendants. The medical officers, of whom there are eight, are armed with revolvers. On July 1st, at daybreak, the ambulances started on their various rounds, and already the first reports of the work done begin to reach the Bureau of Hygiene. For the present, and until the malarial season commences in earnest, this work will be chiefly in the nature of practice, to familiarise the medical officers with each locality and the best way of dealing with its particular needs. Nevertheless, on this the first day of the campaign a large quantity of preventive remedies were distributed and a couple of bad cases of malaria were admitted into the Hospital of Santo Spirito. Even the small experience already gained shows that this crusade against the deadly foe which yearly exacts so heavy a tribute from the fever-stricken peasantry of the Roman Campagna will be the means of relieving much suffering and of saving many lives. To the same humane object the series of experiments which the Society for the Study of Malaria are again inaugurating in Latium for the malarial season now commencing will no doubt likewise contribute. These experiments will be of a similar kind to those carried out last summer along the Mediterranean and Adriatic railways with such encouraging results. Some 26 of the houses of the employés along the same lines of railway, all in localities known to be highly malarious, will be selected, and the doors and windows will be closed with wire gauze to prevent the entrance of anopheles. The men on night duty will wear special coverings for the head and hands to protect them from the bites of mosquitoes, and will have preventive medicines administered to them. Similar measures will be adopted by the Acqua Marcia and the Rome-Tivoli Electric Traction Companies for their stations and workpeople, and an attempt will be made to induce the peasantry in the most malarial zones, such as Cervelletta, Castella di Velletri, the Pontine Marshes, &c., to adopt like precautions, wire gauze for the windows of their houses and huts being supplied to them. The Caetani family have had a moveable shelter constructed furnished with mosquito nets and all the necessary protective paraphernalia, which will be sent with the workpeople to the various places where the mowing, ploughing, and reaping are successively carried on thus to afford them a safe sleeping-place during the night-time. While these experiments are going on in the Agro Romano other series of a similar nature will be prosecuted in the Tuscan Maremma and in the provinces of Salerno and Bari. All the results will be collected and compared in the hope of gaining information and devising practical measures which may prove helpful in protecting the labouring classes against the ravages of malaria.

*Small-pox in Piedmont.*

There appears to have been no recrudescence of the outbreak of small-pox with which Italy was threatened last April through the landing at Naples of a number of infected persons belonging to a large party of American tourists, but two cases of hæmorrhagic small-pox imported from Toulon and Marseilles are reported at Cuneo in Piedmont. One case has proved fatal and in the other the patient is not expected to recover. Prompt measures were taken to prevent any spread of the infection.

July 3rd.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

*The Ice Trust in New York.*

MUCH indignation has been aroused among the inhabitants of New York by the action of the trust which controls the sale of ice in the city in raising the price of that indispensable commodity during hot weather to a figure almost prohibitive to the poor. Owing, however, to the stand taken by some of the New York daily journals, notably by the *New York Journal* and by the *World*, the prosecution of this obnoxious scheme has been frustrated, and, furthermore, its promoters and the more influential of the shareholders in the company, among whom were the Mayor of New York and other city officials, have been publicly pilloried and sharply brought to book. If the project had been carried out much suffering would have been entailed on the residents of the poorer districts of New York, where in the summer the heat is often oppressive to a degree and where ice is a necessity for the preservation of food. Dr. Dwight Chapin, writing on the matter in the *New York Medical Record* of June 9th, says:—"It is estimated that there are 146,600 children under the age of three years in the boroughs of Manhattan and Broux, or 6·72 per cent. of the whole population. This immense number subsists principally upon milk. Recent studies show that if cow's milk can be properly cooled it will keep a considerable time and is much better than relying too largely upon superheating. Here is where the subject of ice comes properly under the physician's notice. Any difficulty in the free procuring of ice during the heated months, whether from a natural scarcity of this article or from a cornering of this staple by commercial greed, is a public calamity."

*Plague in San Francisco.*

The plague in San Francisco, owing doubtless to the vigorous measures taken for its suppression by the United States Marine Hospital Service and by the San Francisco Board of Health, has apparently been, if not completely eradicated, at least kept well under control. Dr. Kinyoun, of the Marine Hospital Service, San Francisco, states that from March 7th to June 2nd there have occurred 11 deaths from plague in San Francisco. In 10 of these the diagnosis has been confirmed by bacteriological examination. There were at the time of the despatch of the report three suspected cases under investigation. In order to prevent dissemination of the disease strict measures of inter-State inspection are in vogue. The Chinese and Japanese object very strongly to the cordon placed around their quarters as well as to the inoculation with Haffkine's serum, to which they are compelled to submit, arguing that they are being subjected to an unfair discrimination. So strong is this feeling among the members of the yellow race in San Francisco that a suit has been brought by them to test the validity of the existing law and to procure an injunction against the local authorities to cause the abandonment of the cordon around the Chinese quarter. Dr. Kinyoun, in his report to Surgeon-General Wyman, says that the local press is still attacking the Board of Health in every way it can, and is fully and cordially supported by one of the mercantile associations of the city. They have issued a circular which is now being scattered broadcast over the city and, I presume, over parts of the United States in which it is stated that the Federal authorities joined with the State and local authorities have stated that no plague exists in San Francisco. Dr. Kinyoun has contradicted this assertion and declared that plague infection does exist in the Chinese quarter and will exist until a strong, determined, and concerted effort is made to eradicate it.

*Death of Dr. Paul Gibier.*

Dr. Paul Gibier, the head of the Pasteur Institute in the United States, died from injuries received in a runaway accident at Suppern, New York, on June 9th. He was born in France in 1851 and after graduating at the medical side

of the University of Paris, became assistant professor of comparative medicine. In 1885 the French Government sent him to Spain to study the outbreak of cholera there, and in the following year he was sent to the South of France to study the same disease. In 1888 the same Government sent him to Havana to study yellow fever. On his way home he stopped in New York. He returned the next year, 1890, and started the Pasteur Institute in this country, a specialty of which was originally the preventive treatment of hydrophobia.

June 29th.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

### *The Plague.*

THE epidemic of bubonic plague would appear to be slowly subsiding in Australia. In New South Wales 248 cases have occurred to date of which 83 proved fatal. In Sydney the disease shows a tendency now to locate itself in the Chinese quarter, in which eight of the more recent cases occurred with seven deaths. Vigorous measures have been taken to improve the sanitary conditions. The Government has taken over the infected wharves and they are in course of demolition, the timber being burned and the accumulated filth under the wharves being removed in punts. Inspection and cleansing of the city and also destruction of rats are still going on. In Melbourne the municipal authorities are being galvanised into activity in the same way. Additional inspectors are being appointed and the scavenging operations are more efficiently conducted. No cases of plague have occurred in Victoria for a period of 11 days and of the nine cases that have occurred (four being in one family) only one (at Geelong) proved fatal and, indeed, was only diagnosed post mortem. As usual doubt has been cast on the diagnosis in all the cases, but its correctness seems to be unquestionable. Several cases have occurred in Brisbane and at Rockhampton in Queensland. Western Australia is declared to be free from cases. Two cases are reported from Adelaide. In many instances it has been impossible to trace the method of contagion, but the observations of the health authorities, so far as they go, support the views of Simond as to the part played by fleas.

### *Metropolitan Hospitals and their Needs, &c.*

Recently a deputation waited on the Colonial Secretary of New South Wales with reference to extending the Prince Alfred Hospital, Sydney. It was stated that for several years the demands for accommodation had increased to such an extent that more beds were urgently required. The hospital had the ground and the plans ready for the erection of two new pavilions providing 120 beds. The administrative arrangements were such as to suffice for working the increased number of beds and the ratio of cost would thus be materially lessened. If the request were not granted patients must be turned away. The institution had been originally built with a view to its enlargement as the population of the city increased, and the time for its enlargement had now arrived. In reply the Minister said that he fully recognised the increasing need for more hospital accommodation. Not only had the population increased but the hospitals were more popular. He fully appreciated the good work which the hospital did and he would seriously consider the matter and bring it before the Cabinet, and probably they would place a sum on the estimates to enable the work to be carried out. The deputation also asked for a further sum of about £5000 to carry out improvements in the existing buildings and to clear off a deficit on the nurses' home. The Minister promised a favourable consideration of this request also. In Melbourne the finances of the leading hospital are in a bad way, chiefly owing to the action of the Government some years ago in reducing its annual grant to the hospital by £2000. The annual expenditure has exceeded the revenue by about that amount ever since, until now the debt of the Melbourne Hospital is £13,000, and the committee has decided that if the income is not increased some of the wards must be closed. An effort has been made to clear off the debt by public subscription, &c. A large bazaar was held which realised £8000, and Mr. G. Iliffe subscribed £1000 on condition that £20,000 were raised by subscriptions of £1000 and £500. Towards this amount £7700 have been given, and it is hoped that the balance will soon be raised. The question of admitting paying patients into public hospitals has also been much discussed of late, both in Sydney and Melbourne. Mr. E. T. Thring of Sydney in his address as retiring President of the New South Wales Branch of the British Medical Association, condemned the practice, asserting that such hospitals entered into unfair competition with strictly private hospitals, and further charged the members of the staff of such institutions with acting unfairly to the general body of practitioners. The *Australasian Medical Gazette* took up the matter and severely denounced the practice, and appealed to the members of the staffs of the hospitals in question to remedy the abuse. In Melbourne the *Argus* newspaper made much the same statement, giving a full account of the methods adopted at all the different hospitals. The authorities at St. Vincent's Hospital in Melbourne made a reply to the effect that as they receive no aid from the Government they are compelled to add to the income received from public subscriptions by taking a limited number of private patients into wards set apart for the purpose, and that the nursing and administrative work being all done gratuitously by the Sisters of Charity they make a considerable profit on the private patients and prevent imposition on both the charity and the profession in many cases.

### *The Lunatic Asylums in Victoria.*

The Melbourne press have been attacking the administration of the Lunacy Department in Victoria, both the *Age* and the *Herald* having published articles on the subject. The main points brought out are—that in proportion to the population there are more lunatics in Victoria than in any other English-speaking country; that there has been a steady decline in the percentage of recoveries among the patients admitted to the asylums—in the early part of the last decade more than half were cured, now less than one-third recover; and that there is no receiving-house where doubtful cases can be kept under observation, and no proper provision for paying patients, private asylums having been abolished by Act of Parliament. The administration defects are all ascribed to the false economy practised by successive Governments. It is also alleged that the medical officers are for the most part incompetent, the inadequate pay and civil service conditions of promotion by seniority failing to attract good men. As usual in newspaper articles of the kind there is a good deal of truth mixed up with a good deal of exaggeration and misstatement in these charges. When the financial depression came on the colony the Lunacy Department, like every other State department, was retrenched and economy was carried to an extent that was unfair to the medical staff and to the patients; and the inadequate pay and difficulties of successful administration do unquestionably prevent the best men in the profession from entering the service. Still there are some very capable and skilled men on the staffs who take the keenest interest in their work and in teaching the students of the medical schools who attend at the metropolitan hospitals for the insane. The report of the Inspector-General for last year will also show a great increase in the proportion of recoveries.

### *The Victorian Branch of the British Medical Association.*

At a meeting of the Goulburn Valley Sub-branch of the Victorian Branch of the British Medical Association, held on May 7th, the following resolution was carried unanimously:—

> Having heard read the evidence in the O'Hara case, we, the members of the Goulburn Valley Sub-branch in regularly notified meeting assembled, unanimously resign from the Victorian Branch (but not from the British Medical Association), as we entirely concur in the action of the late Council.

The Ballarat Sub-branch also passed a resolution approving of the action of the late Council. The South Australian Branch, at a well-attended meeting held on May 31st, unanimously passed the following resolution:—

> The South Australian Branch of the British Medical Associatio sympathise with the late Council of the Victorian Branch of the British Medical Association in their endeavour to uphold the dignity of the profession in the matter of the "Silenette" investigation; and are of the opinion that they could not have acted otherwise than they did in resigning their positions after the insufficient vote of the 21st March, 1900. That our Representative on the General Council, British Medical Association, be requested to bring the decision of this Branch before the said Council.

### *Carrasquilla's Serum Treatment of Leprosy.*

In the *Intercolonial Medical Journal of Australasia* for May is an account of a very exhaustive investigation by

Dr. F. Tidswell of the value of the serum treatment of leprosy devised by Carrasquilla of South America. The mode of preparing the serum is described as are the results of the treatment, which did not accord with the results stated by Carrasquilla. During the treatment tubercles and maculæ remained and increased, anæsthesia and nerve thickening persisted, and alopecia and defects of sight, &c., were not improved. The disease, far from being cured, did not appear to be even ameliorated, and after nine months' persistent trial the patients declined further treatment.

June 1st.

# Obituary.

## DANIEL JOHN LEECH, M.D., F.R.C.P. LOND, D.SC. VICT.,

PROFESSOR OF MATERIA MEDICA AND THERAPEUTICS IN THE OWENS COLLEGE, MANCHESTER; CONSULTING PHYSICIAN TO THE MANCHESTER ROYAL INFIRMARY; AND REPRESENTATIVE OF VICTORIA UNIVERSITY UPON THE GENERAL MEDICAL COUNCIL.

THE death of Dr. Daniel John Leech, the well-known Professor of Materia Medica in Owens College, Manchester, following close upon the death of Professor Thomas Jones, inflicts a double shock upon medical circles in Manchester. Like that of his colleague Dr. Leech's death was premature, but his friends had known for three months that the end was only a matter of time, as he was suffering from malignant disease of the stomach.

Dr. Leech was born 60 years ago at Urmston, being the second son of the late Mr. Thomas Leech, a medical practitioner in that city, and the younger brother of Sir Bosdin Leech, the ex-Lord Mayor of Manchester. It is interesting to note that Dr. Leech's original family name was Bosdin, for he belonged to a branch of the old Cheshire family of that name which adopted the name of Leech—at least, so it is said—because of the persistence with which its members distinguished themselves in medicine. The late Dr. Leech has added lustre to his medical name. He entered the recently founded Owens College, Manchester, at the early age of 14 years, and six years later, in 1860, he matriculated in the first division at London University. He was already an advanced medical student, wanting only the final examination to qualify him, his medical studies having been pursued in the Manchester School of Medicine and also, as was the habit in those days, as the assistant of a general practitioner in the city. His career as a student was a successful one and was frequently rewarded with prizes. In 1861 he qualified as M.R.C.S.Eng. and L.S.A. In the following year, after a short sojourn in Paris, the anatomical schools of which city were famous in the "sixties" for the excellence of their teaching and the facilities afforded to the students for practical work, he became demonstrator of anatomy in the Manchester Medical School. This post he held for two years, and in 1864 came up to London where he entered his name for classes at St. Mary's Hospital, upon the honorary staff of which were to be found at that time the names of Dr. James Alderson, F.R.S., Dr. Tyler Smith, and Mr. J. Lane, all of whom had a wide reputation. Returning to Manchester he was taken into partnership by the medical practitioner whose assistant he had previously been, and in 1868 he graduated in London University as Bachelor of Medicine, obtaining first-class honours in gynæcology. In 1870 he was appointed physician to the Hulme Dispensary, and three years later he became assistant physician to the Manchester Royal Infirmary, with which institution his name from that day forward was honourably associated. His excellent work both as teacher and clinician met with ready recognition; his grasp of clinical medicine was firm and his power of imparting instruction great, and in particular he interested himself in the study of materia medica and therapeutics, a branch of medicine the growing neglect of which in this country is a matter of some reproach to the medical profession. In 1878 he was appointed co-lecturer, having as his colleague the late Mr. Somers, in materia medica and therapeutics at Owens College, and on the death of Mr. Somers five years later he became sole lecturer, being at the same time appointed professor of materia medica and therapeutics, which post he held till his death. Upon the appointment of Dr. Leech to the chair Owens College possessed no Materia Medica Museum and to supply this want, which he felt to be fatal to good and fruitful teaching, he set himself with zeal. He spared no trouble and no expense (for the calls upon his private purse in behalf of the Materia Medica Museum were not small), and he formed one of the finest museums in the country, attached to which is a department of experimental pharmacology where excellent work has been done under his supervision and where the spirit of his teaching still remains as a stimulus to further exertion in pharmacological research.

If Dr. Leech had contributed nothing to the progress of medicine but his work in organising a Materia Medica Museum for Owens College and in delivering there his admirable scientific discourses upon pharmacology he would have deserved to be ranked among the prominent medical men of our day; but though pharmacology was Dr. Leech's especial bent he did not allow its study to keep him from a wide interpretation of the duties and responsibilities of a physician. In 1875 he was admitted a member of the Royal College of Physicians of London, a year later he took the degree of Doctor of Medicine of London University, and was elected a Fellow of the Royal College of Physicians of London in 1882. Three or four years previously to this he was elected full physician to Manchester Infirmary, which appointment he held for 21 years, only resigning it about a year ago when he was appointed consulting physician. Dr. Leech's career is, however, but half described when we say that he was an excellent hospital physician with a large private practice and was an admirable professor in the University College of Manchester. He had many other interests, and many other duties were laid upon him, and the way in which he discharged them earned him the gratitude of his fellow-citizens. Thirty years ago he became the secretary of the Manchester and Salford Sanitary Association which through Dr. Leech's powerful instrumentality has rendered the city of Manchester incalculable benefits. To it the corporation owe the institution of many wholesome by-laws, while its teachings have assisted the authorities in the most practical manner to prevent the terrible dangers that follow upon the adulteration of food and upon a vitiated milk-supply, while in particular to this association belongs the honour of being the first body vigorously to combat the evils of black smoke. Several of Dr. Leech's reports upon this subject and upon the pollution of rivers were of the greatest value to the community.

Owens College, Manchester, is much beholden to its dead professor. He was a member of the Council and of the Court of Governors and played an important part in the organisation of the medical faculty of Victoria University. When the University was established Dr. Leech was appointed Chairman of Convocation and Representative of the University upon the General Medical Council, and his services in these two capacities the University acknowledged four years ago by granting him the degree of D.Sc.

Among the many complex problems of medicine few are more interesting than those connected with the accurate determination of the methods of action of particular groups of drugs which possess definite chemical affinities, and all pharmacologists owe the late professor of materia medica and therapeutics at Manchester a real debt of gratitude for his earnest endeavours to increase our knowledge in this direction. In 1893 Dr. Leech took as his subject for the Croonian Lectures before the Royal College of Physicians of London the Pharmacological Action and Therapeutic Uses of the Nitrites and Allied Compounds.[1] In tracing the physiological influence of groups of elements, more particularly of the groups formed by oxygen and nitrogen, he gave in the first two lectures a summary of his own work and proved it to be of considerable practical importance as well as most thoroughly and conscientiously executed. He desired his hearers to obtain a more intelligent appreciation of the conditions of efficiency of the nitrites as a group, and with this object he not only detailed his own experiments but reviewed those of Sir T. Lauder Brunton, Professor Cash, Dr. Filehne, Dr. Reichert, and the late Sir B. W. Richardson in a way that was remarkably intelligible considering the difficulty of the subject. In the last two lectures he dealt mainly with the therapeutic value of the remedies falling under these groups and his conclusions were valuable because of the scrupulous way in which they had been arrived at. Many busy practitioners who looked askance

[1] THE LANCET, June 24th (p. 1499) and July 1st (p. 3), 8th (p. 76), 15th (p. 123), and 22nd (p. 177), 1893.

when these lectures were published in our columns at the unfamiliar names of the drugs mentioned perceived the value of Dr. Leech's work when he proceeded to apply his theories to the estimation of the dosage of such therapeutic agents as nitrite of amyl and ethyl to many common conditions and to give his reason for his teachings.

Dr. Leech will nowhere be more missed and regretted than in the General Medical Council, where he represented the Victoria University. He was, in truth, one of the most useful members of the Council. He was elected to it in 1891 and took an active part in various committees. Of late he had been chiefly occupied in the work of the Pharmacopœia Committee, where the practical and scientific knowledge of drugs to which we have just alluded was of the greatest use to the counsels of the body that has charge of the issue of the British Pharmacopœia. On the death of Sir Richard Quain he was made chairman of the committee, and to him is due much of the credit which has been universally given to the work. He did not speak long or frequently in the Council, but whenever he did speak his views carried much weight. He was especially interested in all questions affecting the general practitioner, such as the various Midwives Bills, the abolition of the unqualified assistant, and the institution of a Conciliation Board to attempt to settle some of the points at issue between the medical profession and friendly societies and medical aid associations. He was a member of the first committee on medical aid associations in 1893 and gave the closest attention to the subject. Up to the last his interest in the work of the Council continued, especially in all questions relating to the Pharmacopeia, and he sent to the Council at the May meeting, through Dr. Donald MacAlister, touching expressions of this interest and left to it several valuable works on pharmacy and materia medica.

Dr. Leech took a prominent part in the affairs of the British Medical Association, being joint general secretary with Dr. C. J. Cullingworth and Mr. James Hardie when the Association met at Manchester, President in 1890 of the Lancashire and Cheshire Branch, and President of the Section of Pharmacology when the Association met at Montreal. He was also a ruling spirit and a late President of the Manchester Medical Society and founder of the Manchester Therapeutical Society, a young and earnest scientific body working on the lines of research where he had made himself a pioneer. He was for several years editor of the *Medical Chronicle*, and the pages of our Manchester contemporary contain many contributions from his pen. He was also a magistrate for the city.

We have said enough to show that in Dr. Leech Manchester has lost a citizen and medicine a representative which both must deeply regret. An excellent physician, a sound teacher, and an original worker Dr. Leech joined to his high intellectual qualities a particularly charming nature. He was kind, generous, and fair-minded, prudent in counsel, and while leaning to the weaker side was never afraid to speak his mind. All his work, whether public, medical, or strictly scientific, had one aim—the good of his generation. He bore his last illness with fortitude and leaves behind him many friends to recall his good qualities.

Dr. Leech married the daughter of Mr. Maclaren of Whalley Range, who survives him.

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### HENRY EWBANK, M.R.C.S. ENG., L.R.C.P. EDIN.

A WIDE circle of friends and acquaintances will hear with deep regret of the death after a long and painful illness of Mr. Henry Ewbank, at his residence, 5, Berkeley-place, Cheltenham. The deceased gentleman was a native of St. Germains, Cornwall, and was only 44 years of age. He received his medical training at University College Hospital, London and he went to Cheltenham some 20 years ago to begin his professional career as junior house surgeon of the General Hospital. His stay there was short but eminently successful. In 1881 he succeeded Dr. Cardew as senior surgeon; and on his resignation in May, 1883, he was presented with a case of instruments by the staff, by whom his departure was generally regretted. He left the hospital to enter into partnership with Dr. Gooding of Cheltenham, with whom he was long and honourably associated. The partnership was dissolved in 1895. For a short interval he practised on his own account; but about two years ago he was joined in partnership by his relative, Mr. C. Ewbank Lansdown. He was formerly honorary surgeon to the Home for Sick Children. Much of his popularity was due to the interest which he took in all forms of outdoor sport and to his genial good comradeship with sportsmen of all classes. In his young days he greatly excelled as a swimmer, and he was at one time looked upon as the leading amateur in the West of England. In fact, he enjoyed the unusual honour of having inflicted defeat on the great Captain Webb himself in a quarter-mile race at Westminster. Nor was that the only occasion on which he met the world-famed swimmer in friendly contest, as he was defeated by the champion in a half-mile race at the Cheltenham Montpelier Baths. For some time he was chairman of the Cheltenham Swimming Club and ably presided over the business meetings and social gatherings. He was a consistent supporter of cricket, football, and similar clubs, and he has done good work on the committee of the Cheltenham Cricket Club, having also from time to time undertaken the captaincy of the second eleven. In 1890 he married Mary Elizabeth, eldest daughter of the late Martin Inett Preston, solicitor, of Nottingham. He leaves a widow and two children.

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DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Fritz Rubenstein of Berlin, who has made a reputation for himself in the domain of surgery and the use of the Roentgen rays as well as by his writings on philosophical and literary topics, has died from the effects of a poisoned wound, at the age of 37 years.—Dr. H. Benedikt, son of the Vienna professor, who has published various researches on radiography.—Dr. F. Nott Otis, formerly Professor of Genito-urinary Diseases in the College of Physicians and Surgeons, New York.

## Medical News.

EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS.—The following gentlemen have passed the Second Examination of the Board in the subjects indicated.

Wednesday, July 4th:

*Anatomy and Physiology.*—Robert Mackenzie im Thurn and Arthur Hallowes, St. Bartholomew's Hospital; John Speechly Le Fevre, Samuel Smulian, George Delaval Walsh, and George Meredith Sanderson, London Hospital; Reginald Henry Hardwick and Thomas Andrew Chater, St. Thomas's Hospital; James Matthew O'Brien, Geoffry Smyth Oades, and John Bourdas, Charing Cross Hospital; Ernest Harrison Griffin, Cambridge University and Guy's Hospital; Percy Claude Vincent Bent, Herbert Douglas Smart, and Edgar Norman Jupp, Guy's Hospital; George Christian Blake Miéville, University College, London; Bertram Maughan Footner and William Joseph Edward Stuttaford, King's College, London; Frederic Rosenberg Harris and George Rowland Henderson Crozier, St. Mary's Hospital; and Charles Aubrey Godson, Hugh Basil Drake, and Leonard Erasmus Ellis, St. George's Hospital.

13 gentlemen were referred to their professional studies for three months.

Thursday, July 5th:

*Anatomy and Physiology.*—Bernard Beryl Riviere, Lauriston Leonard Winterbotham, Alan Hargrave Pinder, and Kenelm Digby Bell, St. Bartholomew's Hospital; Harold Harris Elborough Scatliff and Lionel Danyers Bailey, St. George's Hospital; Charles Herbert Romer Coltart, Westminster Hospital; William Percival Hingston and Peter Gifford Foulkes, Middlesex Hospital; Charles Robert Shattock, Frank Percival Hughes, Charles Frederick Fraser, and Francis William Fawssett, Guy's Hospital; George Russell Rew, Cyril Thomas Cheatle, and John Henry Napper, King's College, London; William George Cheatle and Russell Edwards Palmer, St. Mary's Hospital; Austin Clarence Dixon, James Stewart, and Edward John Henry Rudge, London Hospital; Harry Morgan Gilmour and Augustine Henry Hudson, St. Thomas's Hospital; James Vere Arkle, University of New Zealand and St. Thomas's Hospital; and George Archibald Bosson, University College, London.

*Anatomy only.*—Samuel Goodman, St. Thomas's Hospital.

*Physiology only.*—Clifford Greville Simms, Middlesex Hospital; Joseph Wilding, St. Bartholomew's Hospital; and Ernest John Hamilton Bowen, University College, Cardiff, and King's College, London.

Eight gentlemen were referred in both subjects, two in Anatomy only and two in Physiology only.

SOCIETY OF APOTHECARIES OF LONDON.—At the Primary Examination held in July the following candidates passed in the subjects indicated:—

PART I.

*Biology.*—C. H. Osmond, Glasgow.

*Chemistry.*—A. G. Gamble, Leeds; J. E. Jones, Bristol; and O. F. W. Steele, Birmingham.
*Materia Medica and Pharmacy.*—B. F. Board, M. Foley, E. M. Handley, C. Kellgren, and A. M. Marval, Royal Free Hospital; J. E. Mondon, Glasgow; O. P. N. Pearn, Westminster Hospital; and E. Renouf, Royal Free Hospital.

PART II.

*Anatomy.*—J. J. Anning, Leeds; W. H. Bush, Guy's Hospital; D. Cotes-Preedy, Cambridge and St. George's Hospital; W. L. Crabtree, Leeds; J. Cretin, Bristol; I. Griffith, London Hospital; E. W. Hutton, St. Thomas's and Westminster Hospitals; H. A. Parker, St. Thomas's Hospital; W. W. Read, Guy's Hospital; Z. Rowlands and E. Serjeant, Royal Free Hospital; J. P. B. Snell, Middlesex Hospital; A. W. D. Thomson, St. George's Hospital; and E. N. L. Wilson, Royal Free Hospital.
*Physiology.*—J. J. Anning, Leeds; F. D. S. Barker, Royal Free Hospital; D. Cotes-Preedy, Cambridge and St. George's Hospital; J. Cretin, Bristol; E. W. Hutton, St. Thomas's and Westminster Hospitals; H. Johnson, Guy's Hospital; A. R. McEnnery, Bristol; W. W. Read, Guy's Hospital; Z. Rowlands and E. Serjeant, Royal Free Hospital; J. P. B. Snell, Middlesex Hospital; W. P. Taylor, Sheffield and Bristol; A. W. D. Thomson, St. George's Hospital; and E. N. L. Wilson, Royal Free Hospital.

A DAY OF REST FOR THE METROPOLITAN NURSES.—On Wednesday, June 27th, the nurses of the London hospitals and metropolitan nursing institutions spent a day in the country at Hertingfordbury. Advantage was taken of the occasion to help those who were present to realise in devotional exercise the spiritual character and dignity of the nurse's vocation as an essential part of the Christian ministry. The "Day" commenced with a celebration of the Holy Communion in the parish church. The Very Rev. the Dean of Windsor gave the address, taking for his text, "Rest in the Lord." Evening prayer was said by the rector at 3.30, the dean again giving the address, based upon the Psalmist's words, "Delight thyself in the Lord." Dinner and tea were provided, and by the kindness of the Earl and Countess Cowper the visitors were invited to inspect the picture-gallery at Panshanger.

WEST-LONDON MEDICO-CHIRURGICAL SOCIETY.—The following gentlemen have been elected as officers and members of council for 1900-1901. President: Dr. F. F. Schacht. Vice-Presidents: Dr. Seymour Taylor, Mr. Neville T. Wood, Dr. F. J. McCann, Dr. F. H. Low, Mr. C. Andrews, Dr. J. A. Coutts, Dr. J. Crombie, and Dr. S. A. Bontor. Council: Mr. F. R. Mallard, Mr. F. Savery, Mr. E. Bartlett, Dr. D. R. Pearson, Mr. G. E. Twynam, Mr. H. W. Chambers, Dr. G. D. Robinson, Mr. H. Webb, Dr. T. R. Atkinson, Mr. W. S. Fincham, Dr. A. Baldock, and Mr. M. H. Taylor. Treasurer: Mr. T. Gunton Alderton. Secretaries: Dr. G. P. Shuter and Dr. Leonard Dobson. Librarian: Mr. C. B. Keetley. Editor of Journal: Mr. H. Percy Dunn. Editorial Secretary of Journal: Mr. McAdam Eccles.

EPSOM COLLEGE.—The following are the results of recent examinations for entrance scholarships and exhibitions:—Scholarships and Council Exhibitioners: Elected to Senior Scholarships: A. Master and A. C. C. Parkinson. Elected to Junior Scholarships: C. E. Milner and A. Ll. Jones. Elected to Entrance Scholarships: G. T. Vivian (Messrs. Clarke and Crouch, Seaford), D. Rahilly (Fairleigh School, Weston-super-Mare), E. A. C. Fazan (Rose Hill School, Tunbridge Wells), and E. L. M. Emtage (private tuition). Elected to Council Exhibitions: R. Nankivell and J. H. A. Hynes.

THE WATER-SUPPLY OF BARRY, SOUTH WALES.—Owing to the rapid increase of the population of Barry the local authority last year decided to increase the water-supply by sinking another well at Biglis. The works are nearly completed and will increase the pumping capacity at Biglis from 500,000 gallons of water per day to more than twice that quantity. The cost has been about £6000.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, EDINBURGH.—At a meeting of the Governing Board of the School of Medicine of the Royal Colleges, Edinburgh, the secretary, Mr. R. N. Ramsay, reported that the number of students attending the school during this session was 1109.

MEDICAL MAGISTRATES.—Mr. J. Whitehead Bentley, L.R.C.P.Edin., M.R.C.S.Eng., of Stockport, and Mr. James Bernard Wall, L.R.C.P., L.R.C.S. Edin., of Coleshill, Warwickshire, have been appointed magistrates for the boroughs of Stockport and Coleshill respectively.

ON July 4th the new wards at the Devonport Workhouse Infirmary, erected at an outlay of £4000, were formally opened.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—We are asked to state that Licentiates of the College who desire to claim the advantage of the concession for the Fellowship, in recognition of the Royal visit, should apply before July 31st, 1900.

MR. WILLIAM H. CORFIELD, M.D. Oxon., F.R.C.P. Lond., Professor of Hygiene and Public Health, University College, London, has been elected a Foreign Corresponding Member of the Royal Academy of Medicine of Belgium.

IN MEMORIAM.—The treasurer of Queen's Hospital, Birmingham, has received a cheque for £1250 from Mrs. Poncia, Gough-road, Edgbaston, for the endowment of a bed in memory of her husband, the late Mr. John Poncia.

MR. PRIESTLEY SMITH, M.R.C.S. Eng., of Birmingham, has been elected as representative of the Faculty of Medicine on the council of the Birmingham University.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*Proposed Extension of the Medical Act of 1858.*

ON Friday, July 20th, General LAURIE, Member for Pembroke and Haverfordwest, will introduce a Bill into the House of Commons to extend the provisions of the Medical Act of 1858. The Bill is the outcome of the refusal of the War Office to accept the services of Canadian militia medical officers in the field in South Africa. In the first case brought to the knowledge of General Laurie, the surgeon of Montreal General Hospital, who also holds a commission as surgeon in one of the local militia regiments, was refused on the ground that it would be contrary to law to employ in the military service a medical man who was not registered under the Medical Act of 1858. Subsequently the Canadian Government offered a complete field hospital and it was refused on the same ground. General Laurie considers that the remedy for this state of things lies in a recognition in the Medical Acts of schools of medicine throughout the Empire which are recognised by their respective Governments and whose requirements come up to the standard established and maintained by the General Medical Council. This is what he proposes to do in his Bill.

## HOUSE OF COMMONS.

TUESDAY, JULY 3RD.

*The Inspection of Irish Hospitals.*

Mr. PATRICK O'BRIEN asked the Chief Secretary to the Lord Lieutenant of Ireland whether he was aware that union general hospitals and union fever hospitals in Ireland were inspected and reported upon by lay inspectors, and could he state what qualifications these gentlemen possessed for the discharge of this duty; was he aware that the Irish Workhouse Reform Association and the Irish Medical Association recommended that those hospitals should be inspected by professional men; and would he see that effect was given to those recommendations?—Mr. GERALD BALFOUR replied: The inspection of workhouses in Ireland, as in England, is under the general inspectors who report on the state of the buildings, the cleanliness, order, discipline, the keeping of the books, the finance, and the compliance with the general regulations by the several officers in every department, including the hospital wards. It would not be practicable to exclude these wards from the general inspectors' authority, but when any questions as to medical treatment arise, or where any inquiry has to be held wherein medical knowledge is required, a medical inspector makes a special inspection or holds any inquiry on oath that may be necessary. The question of assigning this work to a special medical inspector appointed for the purpose is under consideration.

*Hospital Staff at Shorncliffe Camp.*

Captain NORTON asked the Under Secretary of State for War if he was aware that at an inquest held on Saturday last at Shorncliffe Camp on Sergeant Wilmshurst, of the Sussex Regiment, it was shown in evidence that there was not a single orderly of the Army Medical Corps in the hospital, and that Wilmshurst, when taken to the hospital in a fit, died before a doctor could be found; and in view of the comments made by the jury at the inquest whether he could say what steps, if any, were now being taken to secure without delay an adequate staff for our military hospitals both at home and abroad.—Mr. WYNDHAM replied: No information has been received in the War Office of this incident, but inquiry will be made. The staff of the hospital consists of a sergeant-major, a sergeant, two corporals, and 14 orderlies of the Army Medical Corps, besides regimental soldiers.

*Widal's Method of Diagnosis.*

Dr. FARQUHARSON asked the Under Secretary of State for War whether he would state what steps were taken by the War Office to provide means for the application of the serum test (Widal's method) to the diagnosis of doubtful cases of enteric fever in general hospitals in South Africa, whether he was aware that this means of making an early diagnosis was largely used by hospitals and local sanitary authorities,

and whether he would take immediate steps to provide every general hospital in South Africa with the skilled assistance and simple appliances necessary in these cases in which such provision had not yet been made? —Mr. WYNDHAM replied: No special steps have been taken beyond the general training of medical officers in this method of diagnosis. The test is being applied in South Africa and army medical officers are quite capable of carrying it out.

THURSDAY, JULY 5TH.

*Volunteer Surgeons in Camp.*

Sir HOWARD VINCENT asked the Under Secretary of State for War if a decision had yet been taken to facilitate the attendance of volunteer surgeons in camp and to enable the pay and allowances of one surgeon to be divided according to the attendance their private practice enabled them to give.—Mr. WYNDHAM replied: Yes, sir; the Secretary of State has decided to make this concession to the medical officers of volunteer corps.

*Death under Anæsthetics.*

Mr. MACALEESE asked the Chief Secretary to the Lord Lieutenant of Ireland whether he could give any particulars to the House regarding the case of a man named George Dover who died at the Belfast Royal Hospital on June 7th under an anæsthetic, and would he explain why no inquest was held in this case to ascertain if the anæsthetic which proved fatal had been properly administered, while on the same day an inquest was held on another hospital case in which the jury returned a verdict of death from natural causes; was he aware that the town clerk of Belfast, at the instance of the Finance Committee of the City Council, asked for an explanation of this matter from the coroner who replied that the only person entitled to demand explanations from him was the Lord Chancellor; and would he take steps to draw the attention of the Lord Chancellor to this case?—Mr. GERALD BALFOUR replied: I understand that the coroner, in the exercise of the discretion vested in him, decided that it was unnecessary to hold an inquest in the case of George Dover, whilst in the second case referred to he found it imperatively necessary to hold an inquest. It is open to any of the parties interested to bring the action of the coroner under the notice of the Lord Chancellor. He is not an officer of the Executive, and the Government see no reason for intervening as suggested in the last paragraph of the question.

*Hospital Orderlies in South Africa.*

In reply to a question on this subject addressed to him by Sir WALTER FOSTER Mr. WYNDHAM said: The number of hospital orderlies employed in South Africa were as follows:—March 17th, 2936, including 560 St. John Ambulance Brigade; April 21st, 3739, including 766 St. John Ambulance Brigade, 84 Militia Medical Staff Corps, and 361 Volunteers; May 19th, 3943, including 986 St. John Ambulance Brigade, 91 Militia Medical Staff Corps, and 492 Volunteers. This does not include the staff of such hospitals as the Yeomanry Hospital, Portland Hospital, &c., the subordinate male staff of which numbers 519, but of which it is not known how many are employed as orderlies. The returns of medical staff raised locally in addition to the above are not furnished to the War Office, but 1200 stretcher bearers are known to have been raised in Natal, thereby releasing orderlies of the Royal Army Medical Corps for duty in the hospitals.

*The Treatment of the Sick and Wounded in South Africa.*

Mr. BALFOUR announced that it was proposed to appoint a commission consisting of Dr. Church, President of the Royal College of Physicians of London; Dr. Daniel John Cunningham, Professor of Anatomy and Surgery in Trinity College, Dublin; and Lord Justice Romer, to report on the arrangements for the care and treatment of the sick and wounded during the South African campaign.—Mr. DILLON asked whether the Government would appoint an independent commission to inquire as to the responsibility of the War Office in connexion with the treatment of the sick and wounded in South Africa and into the organisation and present condition of the Army Medical Department; such commission to sit immediately and conduct its inquiry independently of the commission which it is proposed to send to South Africa.—Mr. BALFOUR replied that two independent and simultaneous commissions whose duties would overlap seemed to him to be very objectionable.

Later in the day there was a long debate on the composition of, and the scope of the reference to, the proposed commission. Many members expressed a strong desire to have the terms of reference extended and the number of commissioners enlarged and some took exception to medical men having a preponderating voice in an inquiry where questions of transport and military organisation were so largely involved and in connexion with which there had been an attack upon the Army Medical Department. At the close of the debate Mr. BALFOUR, while insisting on the superiority of the Government proposal and saying that in his opinion the House was wrong, said he must yield to the opinions expressed and do his best to consult with his colleagues as to how they could increase the number of commissioners from three to five. He declined, however, to enlarge the scope of the reference.

FRIDAY, JULY 6TH.

*Uncertified Deaths in Scotland.*

In Committee of Supply on the Scottish Estimates Mr. WEIR and Sir CHARLES CAMERON called attention to the large number of uncertified deaths in the Highlands and others of the remoter parts of Scotland. The latter suggested that in his return the Registrar-General should record separately the certified and the uncertified deaths, so that it might be seen whether any progress was being made in the matter of certification. He reminded the House that the Select Committee of a few years ago found that in some of the western parts of Scotland 50 per cent. of the deaths were uncertified by a medical man and that in spite of this state of things the recommendations of the Committee had not been carried into effect.—The LORD ADVOCATE, by way of reply, said he would place Sir Charles Cameron's suggestion before the Registrar-General.—Mr. WEIR protested against this reply as altogether inadequate and unsatisfactory. In his own constituency of Ross and Cromarty there were hundreds of uncertified deaths every year—a state of things which he regarded as a public scandal. By way of emphasising his protest Mr. WEIR moved a reduction in the vote under the review.

*The Use of Glycerinated Calf Lymph in Scotland.*

On the vote for the Local Government Board for Scotland Sir CHARLES CAMERON drew attention to the small proportion of glycerinated calf lymph distributed in Scotland as compared with the proportion distributed in England.—The LORD ADVOCATE replied that up to the present the advantages of the lymph had not been brought home to the people so clearly in Scotland as in England. He was glad, however, to be able to assure the hon. member that the demand for it was steadily increasing, and he thought the hon. member and others interested might feel certain that this steady increase would be maintained.

# Appointments.

***Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.***

ABERCROMBIE, PETER H., M.D., C.M., has been appointed Assistant Surgeon to the Central London Throat and Ear Hospital, Gray's Inn-road, W.C.

ASTIN, WILSON, M.B., C.M. Aberd., has been appointed Medical Officer of Health for the Loughton Urban District.

BARFORD, ARTHUR, M.D., has been appointed Assistant Anæsthetist to the Central London Throat and Ear Hospital, Gray's Inn-road, W.C.

BEAUMONT, A. W., B.A. Camb., M.D. Dubl., has been re-appointed Medical Officer of Health by the East Ham Urban Council.

BELLAMY, J. H., junr., L.R.C.P. Lond., M.R.C.S., has been appointed Senior Resident Medical Officer at the Workhouse by the Sheffield Board of Guardians.

BROWNE, G. H., L.R.C.P. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Blaina Sanitary District of the Tredegar Union.

BURGESS, G., M.B., C.M. Aberd., has been appointed Medical Officer of Health for the Great Driffield Urban Sanitary District, vice R. Wood, resigned.

GOLDSMITH, G. H., M.B. Cantab., has been appointed Medical Officer to the Bedford Union Workhouse.

GRAY, W. G., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health for the Holsworthy Urban Sanitary District.

HOWELLS, W., M.B., C.M. Glasg., has been appointed Medical Officer of the Workhouse, Brecknock Union, vice W. M. Parham, resigned.

HULBERT, E. B., M.D. Durh., M.R.C.S., L.R.C.P., has been appointed Second Assistant Medical Officer to the St. Marylebone Infirmary, North Kensington, W., vice E. Worley, resigned.

HUTCHENS, H. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent of the Plague Hospital, Brisbane, Queensland.

LEONARD, NORMAN, has been appointed Analyst for the Borough of Northampton, vice Messrs. Swete and Ross.

MCFARLAND, B., M.D., M.Ch. Irel., has been re-appointed Medical Officer for the Lincoln Workhouse.

MCWALTER, J. C., L.R.C.P., L.R.C.S. Irel., has been elected a Fellow of the Royal Institute of Public Health.

MORICE, C. G. F., M.D. Brux., F.R.C.S. Eng., has been appointed Sanitary Commissioner for Westland and Buller, New Zealand.

NOURSE, W. J. C., F.R.C.S. Edin., has been appointed Assistant Surgeon to the Central London Throat and Ear Hospital, Gray's Inn-road, W.C.

PECK, H., M.D. Edin., D.P.H. Camb., has been re-appointed Medical Officer of Health by the Chesterfield Town Council.

PLATT, J. E., M.S. Lond., F.R.C.S. has been appointed Honorary Assistant Surgeon to the Manchester Royal Infirmary.

WEAVER, J. J., M.R.C.S., has been appointed Medical Officer of Health for the Borough of Southport, vice H. H. Vernon, deceased.

WEBSTER, F. J., M.R.C.S., has been appointed Medical Officer of Health for the Vaynor and Penderyn Rural Sanitary District, vice T. J. Dyke, deceased.

WEIGHTMAN, E. J., M.B., C.M. Edin., has been appointed Medical Officer of the Workhouse and Children's Homes, Middlesbrough Union, vice L. G. Davies, resigned.

WILLIAMS, W. R. E., M.B., M.R.C.S., has been appointed Assistant Resident Medical Officer to the Mill-road Infirmary, Liverpool.

WHITAKER, E. T., M.B., C.M. Edin., B.Sc., D.P.H. Camb., has been appointed Medical Officer of Health for the Wem Urban Sanitary District.

WOODFORD, E. V. R., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the No. 1 Sanitary District and the Workhouse of the Abingdon Union.

WYNNE, WALTER, M.B., C.M. Edin., has been appointed Medical Officer of Health by the Rye Rural District Council.

# Vacancies.

***For further information regarding each vacancy reference should be made to the advertisement (see Index).***

ALTON CAMP. — HOSPITAL AND CONVALESCENT CAMP FOR SICK, WOUNDED, AND CONVALESCENT SOLDIERS (now in course of erection). —Positions on the Medical and Surgical Staff. Applications in the first instance by post, addressed Manager, Absent-minded Beggar Relief Corps, Room 44, Harmsworth-buildings, Tallis-street, London, E.C.

BEDFORD COUNTY HOSPITAL.—Assistant House Physician. Salary £25 for six months, with board, lodging, and washing.

BIRMINGHAM AND MIDLAND EYE HOSPITAL, Church-street, Birmingham.—Assistant House Surgeon. Salary £60 per annum, with apartments and board.

BOROUGH OF BOOTLE HOSPITAL FOR INFECTIOUS DISEASES.—Resident Medical Superintendent, unmarried. Salary £120 per annum, with board, washing, and apartments at the hospital. Apply to the Chairman of the Health Committee, Town Hall, Bootle.

BRADFORD ROYAL INFIRMARY.—House Physician for 12 months, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

CARDIFF INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £50 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY (not provident).—House Surgeon. Salary £150 per annum, with apartments (not board).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Annual re-appointment, but tenable for three years. Honorarium 20 guineas per annum.

CHESTER GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with residence and maintenance in the house.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c. Also Locum Tenens for one month or more. Terms £3 3s. and all found, with second-class return fare.

CORPORATION OF BIRMINGHAM—CITY HOSPITAL, Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125 per annum, with furnished apartments, board, attendance, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DERBYSHIRE ROYAL INFIRMARY, Derby.—Assistant House Surgeon for six months. Salary £30 for that period, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—House Surgeon and Assistant House Surgeon. Salary of House Surgeon £100 per annum, and Assistant House Surgeon £50, with furnished apartments, board, and washing in both cases.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for 12 months, unmarried. Salary £60, with board, lodging, and washing.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Senior House Physician for six months. Salary at the rate of £60 per annum, with board, lodging, and washing in the hospital.

GROVE HALL ASYLUM, Bow, London, E.—Assistant Medical Officers. Salary £175 per annum for Senior and £120 per annum for Junior, with board, furnished apartments, attendance, and washing in each case.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, Bloomsbury, London.—House Physician for six months, unmarried. Salary £20, with board and residence in the hospital.

HULL CITY AND COUNTY LUNATIC ASYLUM.—Second Assistant Medical Officer at the Asylum, Willerby. Salary £120 per annum, rising £5 per annum to £150, with board, apartments, and washing. Applications to the Clerk to the Committee of Visitors, Town Hall, Hull.

LIVERPOOL STANLEY HOSPITAL.—Senior House Surgeon. Salary £80, with board, lodging, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, N.E.—House Physician for six months. Salary at the rate of £30 per annum, with board, residence, and laundry. Also Resident Medical Officer for 12 months. Salary £120, with board, residence, and washing. Applications to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent—House Surgeon. Salary £120 per annum, increasing, conditionally, by £10 a year, with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £125 per annum, rising by annual increments of £10 to £175, with furnished apartments in the Asylum, board, and washing. Applications to the Clerk to the Visiting Committee, Municipal Buildings, Plymouth.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £90 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL INFIRMARY FOR THE SICK AND LAME POOR OF THE COUNTIES OF NEWCASTLE-UPON-TYNE, NORTHUMBERLAND, AND DURHAM.—Honorary Assistant Surgeon. Applications to the Secretary, Royal Infirmary, Newcastle-upon-Tyne.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £80 per annum, with board.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SCARBOROUGH HOSPITAL AND DISPENSARY.—House Surgeon for 12 months. Salary £90, with residence, board, and washing. Also Assistant House Surgeon for six months. Salary at the rate of £75, with residence, board, and washing.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer for the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing. In lieu of stimulants or mineral waters £6 per annum will be given.

TUNBRIDGE WELLS EYE AND EAR HOSPITAL.—House Surgeon. Salary £60 per annum, with board, lodging, and washing.

UNIVERSITY COLLEGE, Cardiff.—Demonstrator and Assistant Lecturer in Anatomy, and Demonstrator and Assistant Lecturer in Physiology. Salary in each case, £120.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75, with board, residence, &c.

WEST KENT GENERAL HOSPITAL, Maidstone.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, with board and residence.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £80, rising £10 annually to £100, with board, residence, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

AUDEN.—On July 5th, at Bootham, York, Constance, the wife of George A. Auden, M.A., M.D. Cantab., of a son.

DONALD.—On July 4th, at Platt Abbey, Rusholme, Manchester, the wife of Archibald Donald, M.D., of a daughter.

FACEY.—On July 7th, at The Lodge, Maldon, Essex, the wife of W. E. Facey, B.A., M.B. Cantab., of a son.

GUTHRIE.—On July 2nd, at Belmont, Tunbridge Wells, the wife of T. C. Guthrie, M.B., of a son.

MILLS.—On July 6th, at Hill-street, Haverfordwest, the wife of Yarnold Mills, M.B. Lond., F.R.C.S. Eng., of a daughter.

WARD.—On July 9th, at Museum-street, Ipswich, the wife of Francis Ward, M.D., of a son.

WHITFIELD.—On July 6th, at Upper Berkeley-street, W., the wife of Arthur Whitfield, M.D., M.R.C.P., of a daughter.

## MARRIAGES.

ADDISON—MOTTRAM.—On July 6th, at St. Bartholomew's, Norwich, Eldred Arthur Addison, M.R.C.S., L.R.C.P., of Coddenham, Suffolk, to Marion Watson, younger daughter of Alfred Mottram, Heigham Hall, Norwich.

BIRLEY—STOWELL.—On July 5th, at the parish church, Chorley, Hugh Kennedy Birley, M.D., of Weaste, Manchester, to Ellin Cecilia Stowell.

DOWDEN—KERANS.—On July 9th, at St. John's, Paddington, Richard Dowden, M.D., to Jessie Allen Kerans, second daughter of T. G. Kerans, of Southwick-place, Hyde-park-square, London.

WHITE—FRASER.—On July 3rd, at St. Michael's Church, Blackheath-park, Finch White, M.R.C.S., L.R.C.P., son of Colonel Finch White, late 85th Light Infantry, to Annie Violet, second daughter of the late James Fraser, of Newfield, Blackheath-park, S.E.

## DEATHS.

HOWARD.—On June 22nd, at Elberon, New Jersey, Benjamin D. Howard, M.A., M.D., M.R.C.S., F.R.C.S.E., of New York, aged 64 years.

JAMES.—On July 9th, at 62, Comeragh-road, West Kensington, Henry James, formerly of Weybridge, Surrey, F.R.C.S., aged 83 years. No flowers by desire.

SQUIRE.—On July 6th, at Maitland-park-villas, Haverstock-hill, N.W., Robert Hemington Squire, B.A., M.R.C.S., aged 57 years.

STEELE.—On the 10th inst., at 33, Via S. Gallo, Florence, after seven years' painful illness unmurmuringly borne, Sarah Louisa, wife of J. P. Steele, B.A., M.D. Edin., and younger daughter of the late Rev. William and Lady Louisa Augusta Anne le Poer Trench.

WATERHOUSE.—On July 10th, at his residence, Croxteth-grove, Sefton-park, Liverpool, Charles Henry Waterhouse, M.D.

*N.B. A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## "THE HONOUR AND DIGNITY OF THE MEDICAL PROFESSION."

OUR correspondent whose letter we printed last week thus continues his jeremiad:—

"Shall I turn to our great hospitals for relief from this intolerable monotony of unwholesome competition which is disastrous in the long run not only for our profession but also for the public? The other day I heard of a tradesman of undoubted veracity in the City of London who was advised to see a distinguished dentist at the West-end who holds the appointment of dental surgeon to one of our large medical schools in London. The fee which this dentist demanded was 30 guineas. When the patient said that this fee was rather more than he expected the dentist at once replied, 'Well, if you do not mind going to *my* hospital *my* assistant will extract five of your teeth, this will save five guineas and reduce my fee to 25 guineas only.' This incident, for which I can vouch, leads me to ask a few more questions. Why should the junior staff of our hospitals work for nothing and their seniors take the credit, and what is more the pay as well, if any? Why should the General Medical Council adjudicate that a medical man who covers an unqualified assistant at a midwifery case is guilty of infamous conduct in a professional respect, although he may be well aware of the abilities of his assistant, as well as being morally, legally, and pecuniarily responsible for the management and result of the case, and then immediately afterwards stultify themselves by bolstering up a Bill to make midwifery conducted by a nurse a legal act? Will a medical man be judged guilty of infamous conduct who covers one of these legal Gamps? Why should the Council of the Royal Colleges of Physicians and Surgeons support the Midwives Bill after selling their diplomas and licences to their members and licentiates and promising to protect them? Most of the censors of the Royal College of Physicians of London do not attend any midwifery and the members of the Council of the Royal College of Surgeons of England especially are debarred from attending any by the tenure of their office as surgeons to the large hospitals. Therefore what can these know of the requirements of the public or the profession so far as midwifery is concerned? Why should the just rights of the juniors in the profession be undermined and bartered away by their seniors? Why do not the heads of our profession constitute themselves as special examining bodies of chiropodists, manicurists, masseurs, and the like? Why do we find the names of medical men on the self-constituted boards of examiners of spectacle-makers, plumbers, &c.? We shall soon have them examiners of the colleges of boot and shoemakers, sanitary clothiers, and wooden leg makers, and this, too, with quite as much reason. Quite recently there has been an appointment of parish infirmary doctor offered for competition to women. There were some dozen candidates for the appointment at the munificent wages of less than £2 a week. Some of these women a few years ago pleaded that they wanted to enter the medical profession in order to attend their suffering sisters out in India. Does this wholesale competition amongst themselves for an appointment to attend paupers in London prove that the way to India is through the workhouse? Why should a medical man or woman accept less remuneration than a professional nurse, or the quill-driver who wrote out the advertisement, or the compositor who sets up the type, less almost than the very printer's devil, now almost extinct, who applies the necessary ink. I was dining out a short time ago when one of the guests said that he had to attend upon a jury, and this was exceedingly annoying and inconvenient, when another guest who did not know me intimately said: 'Why not get a medical certificate?' at the same time adding, '*Any* doctor will give you one for a shilling!' Shall we sigh and say, 'Alack and alas: is it not true?'"

## AXIS TRACTION FORCEPS.

*To the Editors of* THE LANCET.

SIRS,—Would you, or some of your readers, oblige me by advising me as to the best form of axis traction forceps to purchase? Is there any real advantage in having Neville's arrangement attached to the ordinary Barnes-Simpson? I am, Sirs, yours faithfully,

July 11th, 1900. A COUNTRY SURGEON.

## RAILWAY SANITARY ARRANGEMENTS.

A CORRESPONDENT writes:—"Are the water-closet and lavatory arrangements of corridor trains in the interests of public health? It seems to me that they are not. I have to-day travelled 250 odd miles in one such train, not overcrowded, and I had opportunity of noting that from one carriage alone that the visits to the lavatory were numerous, and some were made while the train was at a standstill in important stations. At the end of the journey myself and fellow-passengers, as is generally the case in summer, were very dusty. This dust was from the permanent way and carriage-fittings, I assume, as in this case the water-closet is usually open to deliver direct on to the ground. Thus the permanent way has become a receptacle for years past of human excrement which goes straight on to the line except so much as is driven by the impetus of the wind from the speed of the train on to its under-floor fittings, &c. I strongly suspect, if my surmise is right as to the general absence of receptacles, that if the under-floors, bearers, and wheels of the carriage were submitted to a careful examination they would reveal revelling myriads of microbes ready for revenge. Just fancy the scores of corridor trains which fly over our main trunk lines every day and the hundreds of people in all conditions of health, or otherwise, who use this modern 'convenience.' Surely the permanent ways, even in the stations, and certainly along the whole course of the line must be seething bacterial beds. It occurs to me that some arrangement might be made which, while meeting the needs of long-journey passengers in fast trains, might prevent this broadcast sowing of filth and disease. It is not as though the permanent way were subject to the influence of the plough on a friable soil, but this bacterial distribution falls on to hard rubble to be nourished by the sun and distributed by the wind. It would be an interesting inquiry whether platelayers, &c., and those who dwell in the immediate proximity of railways have any special record in the matter of disease. I may be quite wrong in my assumption that the absence of receptacles is general, and that if so there is death in the carriages. I think, however, you would contribute to the solution of what seems to me a most important national sanitary question if you would open your columns to the discussion of it."

## WHO IS MR. W. HARTLEY AUSTIN?

Two correspondents write asking who is Mr. W. Hartley Austin, from whom they have received the following circular:—

93, Queen Victoria-street, London, E.C., 27th June, 1900.

DEAR SIR,—A large number of prominent gentlemen in your profession have recently been good enough to grant me a brief interview in order that I might explain an entirely new and most interesting investment, specially suitable for a medical man and guaranteed by a wealthy, old-established company with funds exceeding £2,000,000 sterling.

This investment is practically the *only* one under which you can take advantage of the extraordinary rapidity with which money accumulates at *compound* interest. You are, of course, aware that even a small sum will (if set aside each year and allowed to accumulate at *compound* interest) mount with great rapidity to a large total, while the ordinary investment at simple interest does not increase at all.

The investment I refer to enables you to set aside a moderate amount each year (from a £5 note upwards), to accumulate same at *compound* interest for a number of years, drawing the result either in cash or as a yearly addition to your income. Should you unfortunately *die* while the money is accumulating at compound interest your family or other dependents are provided for by life insurance *without further charge*.

I venture to ask if you also would grant me the favour of a few moments' conversation to bring this matter under your notice. If so, I feel confident you would be much interested in what I have to say, and I should not encroach in any way upon your valuable time.

Thanking you in anticipation of your returning the enclosed stamped postcard, I am, yours faithfully,

W. HARTLEY AUSTIN.

The circular encloses a stamped card to be signed by the recipient when making appointments with Mr. Austin, who clearly saves his correspondents as much trouble as possible. We have not the least idea who Mr. Austin is. We do not follow his arguments with regard to the difference between simple and compound interest. Presumably, "most prominent gentlemen" in the medical profession know that money accumulating at compound interest increases more rapidly than money accumulating at simple interest; but no accumulation will take place under either system if all the interest is annually spent, while an "ordinary investment at simple interest" increases by the amount of that simple interest if the simple interest is not spent.

We recommend any of our readers who have received this circular to ask Mr. Austin for the usual banker's reference before entrusting him with money, if not before seeing him. An investment that is "guaranteed by a wealthy, old-established company with funds exceeding £2,000,000 sterling" should have no difficulty in furnishing undeniable credentials.

## "DEATHS UNDER CHLOROFORM."

*To the Editors of* THE LANCET.

SIRS,—"If they hear not Moses and the Prophets," &c., and so I say, if after all that has been advanced against the rule-of-thumb method of administration—no matter by whom the chloroform vapour be administered—then to say more is useless. Nearly every argument has been examined and good and sufficient reasons given by Dr. Edmunds for urging the adoption of the Krohne inhaler, and to designate such an exact method of administering chloroform vapour "the latest fad" in the face of such unanswerable evidence is a curious perversion of

the intellect. I am the last to deny the wonderful safety with which chloroform is administered by very many able men like Dr. Marshall, but the worst of it is that all who administer chloroform can hardly be classed in that list, otherwise we certainly should not have recorded the number of deaths that now unhappily obtain. Dr. Marshall may also be equally competent to dispense strychnine without measuring, but would he be justified in so doing? If not, how about the less competent? All I therefore venture to urge in connexion with this important question is that the safest mode of administering chloroform vapour should be worked out and adopted; that, in the hands of any ordinary practitioner with common sense, could hardly ever result in death. This, Sirs, I venture to think, in the absence of positive proof to the contrary, may be claimed for the "Krohne Inhaler, 1900."

Thanking Dr. Marshall for his reply,

I am, Sirs, yours faithfully,

C. J. HARRIS, M.R.C.S. Eng., &c.

Kilburn Priory, N.W., July 2nd, 1900.

## A PROLIFIC FAMILY.

A PARAGRAPH in the June number of the *Maryland Medical Journal* states that among recent returns of births for the State of Maryland was a birth certificate sent by Dr. J. V. Wallace of Chesapeake City, who reported the birth on Feb. 23rd, 1900, of Warren O——. The grandmother and great-grandmother were present at the birth, while the great-great-grandmother was in a house in the neighbourhood. From this last-named lady, now only 72 years of age, there have sprung 11 children, of whom eight are living, and 50 grandchildren, of whom 18 are living. There are 22 great-grandchildren living, and there have been two great-great-grandchildren, one being the child Warren O——. The record does not give the number of great-grandchildren dead, but the figures given show that there have descended from this very superior mother 85 children, of whom 63 are living. The number of plural births is not given, but the oldest daughter, now 52 years old, had twins four times. This is a very remarkable record.

## THE DUTIES OF A PUBLIC VACCINATOR.

*To the Editors of* THE LANCET.

SIRS,—As a subscriber to THE LANCET I shall be very glad if you will kindly answer the following question. I am a public vaccinator. Several persons in my district are summoned to appear before the magistrate for refusing to have their children vaccinated. I have subpœnas to attend the court and give evidence as to vaccination notices, &c. I want to know whether under the present Vaccination Act it does not come under the vaccination officer's duty to give all the evidence necessary to convict without the public vaccinator appearing in court. Also whether, in case I am bound to appear, I am entitled to a fee (half a guinea) for each case.

I am, Sirs, yours faithfully,

July 5th, 1900. X.

*** The duty of taking proceedings for the enforcement of the law devolves upon the vaccination officer. (See Schedule 4 of the Vaccination Act of 1898.) If, however, our correspondent has been subpœnaed he must attend. We should say that he is entitled to a fee for each case, but perhaps it would be as well for him to consult his legal adviser upon that point.—ED. L.

## LIVING LARVÆ IN THE EAR.

*To the Editors of* THE LANCET.

SIRS,—The following, to myself at least, is an unusual experience and as a case of myiosis may be of interest. To-day a man consulted me with the history that some 10 hours previously he had been awakened from sleep by an unusual sensation in his left ear. He described it "as if he had wheels in his ear" and soon began to suffer pain and discomfort that increased to such an extent that he could bear it no longer and came to seek advice. On examining with a speculum and on inquiry I found that he had suffered many years from middle-ear disease. There were great swelling and inflammation of the tympanum and surrounding parts. On syringing out the ear with water I was astonished to see an animal some one-eighth of an inch in length make its appearance, and on further douching others of a like kind were washed out. I continued syringing till no more appeared and counted 14 larvæ, all alive. I finished syringing the ear with sol. hyd. perchlor., and the patient went away feeling quite relieved and free from pain. I presume these were the larvæ of a species of creophila.—I am, Sirs, yours faithfully,

D. J. DRAKE, M.R.C.S. Eng., L.R.C.P. Lond.,

June 21st, 1900. Medical Officer to the Ray Copper Co., Arizona.

## BOOKS ON PHYSIOLOGICAL CHEMISTRY.

*To the Editors of* THE LANCET.

SIRS,—Will you kindly recommend a reliable work solely upon physiological chemistry? "A Text-book of Physiological Chemistry," by Olof Hammarsten, published for Wiley and Sons by Chapman and Hall, has been recommended. I am, Sirs, yours faithfully,

July 9th, 1900. STUDENT.

*** The book mentioned is a good one. Another admirable work is Halliburton's "Text-book of Chemical Physiology and Pathology," Longmans, Green, and Co. The most complete treatise which, however, is only suitable for advanced students, is Gamgee's "Physiological Chemistry," published by Macmillan and Co.—ED. L.

## "AN APPEAL TO BROTHER PRACTITIONERS."

*To the Editors of* THE LANCET.

SIRS,—Did it ever strike your correspondent, "M.D.," that his pain in his hip-joint might be a neurosis—neuralgia—which, in my experience, is much more developed by climatic changes than "rheumatism," the latter also usually being improved by exercise? All "gout" is atonic nowadays, often showing itself as neuralgia pure and simple, and one constantly finds people calling a pain, especially if near a joint, "rheumatism," and considering the treatment for neuralgia and rheumatism is essentially opposite the mistake is a fatal one as regards curing the pain. I believe "M.D." would not find it to be a dangerous experiment were he to try a tumbler of Guinness's stout at luncheon and dinner—say, for a week—then alternate with the same quantity of champagne. Frequent gentle exercise with light dumb-bells (three pounds each) and a Turkish bath twice a week before dinner might in addition prove useful.

I am, Sirs, yours faithfully,

July 9th, 1900. F. ORTON, M.D. Dub.

## "THE TREATMENT OF MORPHINOMANIA."

*To the Editors of* THE LANCET.

SIRS,—In reply to your correspondent's inquiry in THE LANCET of July 7th I had recently occasion to write to Dr. Emmerich of Baden-Baden *re* his treatment for morphinomania. Dr. Emmerich informed me that the articles he employs are already known pharmacopœial preparations, that he does not provide his material for general use, but retains it solely for his "Heilanstalt" (health resort). I enclose a pamphlet issued by Dr. Emmerich but regret that I cannot supply your correspondent with papers written by Dr. E. I had two which treated on "Morphinismus." From one I abstracted the following note: "The substitute (for morphia) is stated to be a plant decoction without a trace of narcotic, to which a considerable quantity of bodies containing tannin has been added, producing a mixture of acrid taste. This mixture precipitates morphia completely from its solutions."

I am, Sirs, yours faithfully,

W. HARRISON MARTINDALE.

New Cavendish-street, W., July 9th, 1900.

## "A GOOD BICYCLE SADDLE."

SEVERAL correspondents have written in reply to our correspondent "B" in THE LANCET of July 7th, with regard to a bicycle saddle that does not chafe the thighs. Two strongly recommend the "Esmond" saddle, which is so suspended that it has a forward and lateral motion, the saddle moving with the rider. "There is no chafing and perineal pressure is almost abolished," says one of the writers. Another correspondent recommends the "Christie" saddle. Brook's B 90 receives two testimonials, while Dr. Churchward's patent hygienic saddle is said by the inventor not to produce "perineal pressure or friction" and receives the encomiums of an independent rider. Dr. Churchward, whose address is 206, Selhurst-road, South Norwood, writes to say that he will be willing to let any member of the profession have one of his saddles for approval if they will apply to him. One gentleman prefers a lady's saddle and finds the one that suits him best to be a Lycett pneumatic. From the correspondence we extract a hint that may prove useful to riders generally—namely, that by painting a saddle underneath twice a week with soft soap and paraffin the leather will become as soft as a glove.

*A. A. B.*—1. The *Ophthalmic Record*. 2. The Royal Eye Hospital, Southwark, or the Royal Westminster Ophthalmic Hospital, King William-street, Strand. 3. Swanzy's "Handbook of Diseases of the Eye" (Lewis, 12*s.* 6*d.*) for a general knowledge, or Professor Fuchs's "Text-book of Ophthalmology," translated by A. Duane (Lewis, 21*s.*), for more advanced studies.

*Scandal.*—So long as the tenants are orderly and well conducted—and our correspondent says that he has never seen anything to the contrary—we presume he can do nothing, but of course it depends upon the terms of the lease. Our correspondent is not the leaseholder. If he does not like the house he can leave it.

**During the week marked copies of the following newspapers have been received:** *Coventry Standard, Leeds Mercury, Bolton Journal, Sun (London), South Wales News, Southampton Observer, Nottingham Daily Guardian, Blackburn Weekly Standard, Liverpool Daily Post, Manchester Guardian, Bradford Observer, Birmingham Daily Post, Cornishman, Dundee Advertiser, Sussex Daily News, Oldbury Weekly News, Pioneer Mail, Times of India, Architect, Scotsman, Citizen, Builder, Yorkshire Post, Bristol Mercury, Newbury Weekly News, African Times, Devon Gazette, Umpire, British Invention, Kentish Mercury, Derby Mercury, Local Government Chronicle, Bristol Times and Mirror, Hertfordshire Mercury, City Press, Reading Mercury, Catholic Times, Surrey Advertiser, Local Government Journal, Brisbane Courier, Clifton Chronicle, The Telegraph (Brisbane), Nature, Justice, Chatham News, Blackpool Gazette, Leamington News, Dewsbury Reporter, Brighouse News Ashton Herald, Exmouth Chronicle, Goole Weekly Herald, Kettering Guardian, Nuneaton Observer, &c., &c.*

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, July 12th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation Vacuo. | Maximum Temp. Shade. | Min. Temp | Wet Bulb. | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| July 6 | 29·93 | N.W. | ... | 115 | 70 | 58 | 56 | 61 | Cloudy |
| ,, 7 | 30·08 | N.W. | ... | 115 | 66 | 54 | 53 | 58 | Cloudy |
| ,, 8 | 30·23 | N.W. | ... | 108 | 63 | 51 | 53 | 60 | Cloudy |
| ,, 9 | 30·21 | S.W. | ... | 112 | 73 | 58 | 56 | 61 | Cloudy |
| ,, 10 | 30·13 | S.W. | ... | 125 | 88 | 55 | 57 | 62 | Fine |
| ,, 11 | 29·97 | SSW | ... | 129 | 89 | 61 | 64 | 71 | Fine |
| ,, 12 | 29·93 | S.E. | ... | 122 | 82 | 65 | 65 | 69 | Hazy |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (16th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (18th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

**THURSDAY (19th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY (20th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

**SATURDAY (21st).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (16th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Morris: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. Davis: Nasal Obstruction. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. A. Baldwin: The Importance of Methodical Physical Examination.

**TUESDAY (17th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Consultation. (Medical.)

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, W.C.)—3.30 P.M. Dr. Batten: Subacute Combined Degeneration of the Spinal Cord.

**WEDNESDAY (18th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Mr. M. Robson: Clinical Lecture:—Chronic Pancreatitis.

**THURSDAY (19th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Bidwell: The Application of Plaster-of-Paris Splints.

**FRIDAY (20th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Ear.)

## EDITORIAL NOTICES.

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*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

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*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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## Communications, Letters, &c., have been received from—

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N.—National Association for Welfare of the Feeble Minded, Lond., Secretary of; North Staffs Infirmary, Stoke-on-Trent, Secretary of; National Canine Defence League, Lond.

O.—Oldham Infirmary, Hon. Secretary of.

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Y.—Yorkshire College, Leeds, Registrar of.

## Letters, each with enclosure, are also acknowledged from—

A.—Mr. A. Anderson Sunderland; A., Lydney; A. R. M.; A. L.; A. C.; Alpha, Lond.; A. E. P.; Messrs. Allen and Hanburys, American Society for Prevention of Cruelty to Animals New York; Accrington Corporation, Accountant of.

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# Two Clinical Lectures
ON
# MALARIA AND THE MALARIAL PARASITE.

*Delivered at the Medical Graduates' College and Polyclinic,*

BY PATRICK MANSON, M.D., LL.D. ABERD., F.R.C.P. LOND., C.M.G.,

LECTURER ON TROPICAL DISEASES AT ST. GEORGE'S HOSPITAL AND CHARING-CROSS HOSPITAL MEDICAL SCHOOLS AND AT THE LONDON SCHOOL OF TROPICAL MEDICINE.

## LECTURE II.[1]

*Delivered on Feb. 28th, 1900.*

GENTLEMEN,—The morbid anatomy of malaria is fairly constant, consisting principally of enlargement of the spleen, congestion of the liver and portal circulation, and pigmentation of the spleen, liver, brain, and many other viscera. The microscopic anatomy, too, is fairly constant. In sections of all the organs mentioned, in the vessels in every instance, and, in the case of the spleen and bone-marrow, in the parenchyma also, there is to be found a remarkable deposit of the peculiar pigment which is so characteristic of malaria. This pigmentation arises from (*a*) the pigment belonging to and contained in living parasites—those little aggregations of pigment which I described as a feature in all mature malaria parasites—and (*b*) from the same pigment included in leucocytes, in endothelium, and, in the case of the spleen and bone-marrow, in the cells of the parenchyma. If you study sections of brain from cases of fatal malarial fever you will often see the capillaries distinctly outlined by the pigmented malaria organisms which they contain. The whole of the lumen of the capillary network is occupied by corpuscles containing little pigment masses. By carefully focussing you will see that each pigment mass is included in a red blood-corpuscle. Sometimes about the centre of a corpuscle you will see the mass of black pigment and surrounding this a body which you may be able to resolve into a cluster of minute sporules. This crowding of the vessels of the brain with parasites affords ample explanation of many of the phenomena of that type of malaria known as pernicious cerebral malaria. In sections of liver you will see a similar arrangement—pigmented parasites, and, much more abundantly than in the case of the brain, masses of pigment in leucocytes and here and there in endothelium. In the case of the spleen in one of the preparations which I show this afternoon you can see, besides the small parasites, each with its little mass of melanin in the capillaries, and besides small pigment-laden splenic cells, huge cells filled apparently with large block-like masses as of charcoal. The bone-marrow specimen exhibits similar appearances. Like the spleen, it contains the malarial pigment outside as well as inside the vessels. In the preparation of mesentery also you can trace a delicate capillary dotted here and there with pigmented sporulating parasites. In chronic malarial conditions you have secondary changes, fibrotic and so forth. These, of course, are not peculiar to malarial disease.

In addition to the black pigment, particularly in those cases of malaria which are accompanied with extensive rapid destruction of blood-corpuscles, you will find another type of pigment—a yellow pigment. This pigment is present in all conditions, accompanied by acute blood destruction. It is not peculiar to malaria; it is found in the hæmolysis attending extensive burns, in poisoning by chlorate of potash or arseniuretted hydrogen, in paroxysmal hæmoglobinuria, and so forth. This pigment is deposited hæmoglobin.

Another and important feature in the pathological anatomy of malaria, and one which you will discover by a careful examination of the blood in the living subject, is anæmia—an intense and, in acute cases, generally a rapidly advancing anæmia. If you examine a patient from time to time after successive malarial paroxysms you will find that the drop in the number of blood-corpuscles per cubic millimetre is very great indeed. In the course of a severe untreated attack the patient is reduced to a condition of intense pallor with a rapidity hardly equalled in any other disease. It is not so, of course, in every case, but in bad types you will find that this holds true. The cause of this excessive anæmia is not very obvious if we rely simply on examination of the blood from the finger for an explanation. If you place finger-blood from a case of malaria under the microscope you may find one or two parasites perhaps in each field. In many cases of severe malaria you will not find so many as that even; sometimes you will have to search through three, four, or five fields before you find one parasite.

How, you may ask, could so small a number of blood-destroying parasites account for anæmia so pronounced and so rapidly evolved? The reason is that the malaria parasite is not especially, or even ordinarily, a parasite of the peripheral circulation. It is a parasite of the blood of the central organs, as evidenced by the specimens shown this afternoon under the microscope. In a case of comatose pernicious malarial fever, with perhaps only three or four or five parasites in every field of finger-blood, you will find post mortem almost every blood-corpuscle in the capillaries of the brain carrying its own parasite. That is the reason why blood destruction is so prominent a feature in severe malarial attacks. The blood is not destroyed by the few straggling parasites seen in the peripheral circulation, but by the myriads of parasites in the blood of the viscera—the brain, the liver, the spleen, the bone-marrow, and so forth.

The behaviour of the leucocytes also is an interesting feature in the pathology of malaria. The polynuclear leucocytes decrease notably in number during the acute stages of malarial attacks; sometimes you may have a difficulty in finding them in the peripheral blood. The large mono-nuclear white cells increase as a rule and often contain malarial pigment. These large mononuclear corpuscles, as well as a certain number of the polynuclear corpuscles, carry the pigment to the spleen and there deposit their burden, which is taken up by the cells of this organ, producing the greater part of that enormous deposit of pigment so clearly illustrated by one of the sections under the microscope.

A peculiar feature clinically about malarial disease is its periodicity. This periodicity is accounted for by the periodicity and simultaneity of development of the parasites; they all seem to keep together as a swarm. At a particular time of the malarial clinical cycle you will find a certain form of parasite in the blood. Just before the explosion of the fever you will find a predominance of the rosette bodies; after the fever has subsided you will find the small form of the parasite as the predominant feature. and so on. Why should this be? Why should there be a conspiracy, as it were, among the different parasites all to mature at a certain time and all at the same stage? This simultaneity of maturation, so to speak, is the reason for the intermittence and regular periodicity of malarial fever. But what is the reason for the parasites observing this periodicity? The question is a very difficult one to answer. I believe the reason is twofold: first, the habit of the parasite to live a more or less definite number of hours; and, secondly, the diurnal rhythm in the periodicity of the physiological processes of the human body. At a certain time of the day in health the body temperature begins to rise and at a certain time it begins to fall; so with the tendency to sleep, to eat, to secrete, and to excrete particular substances there is a definite diurnal periodicity in the normal physiological cycle. This diurnal physiological periodicity, combined with the tendency of the parasite to live for a definite time impresses, I would suggest, the periodicity on the parasite of malaria which is so very characteristic of it and of the disease it produces.

So far as is known the lower animals are absolutely immune as regards the human forms of malarial disease. If you inject human malarial blood into a monkey there is no subsequent proliferation of the parasite and no fever. The same is the case with the dog or horse or other animals. Therefore in the lower animals there is complete immunity as regards the malarial parasite. We also know that certain human beings, very few it is true, enjoy a similar absolute immunity as regards this parasite. Some people coming into a malarial district contract the disease within a week or ten days of their arrival, others resist the disease for months, and a very few resist it permanently. That fact shows that *qua* the malarial parasite there is a varying degree of immunity in the same human body and in different individuals. I believe that this immunity possessed by the human body, like other physiological properties, has, as regards its amount a diurnal rhythm. At one time of the day the resistive power against a malaria parasite is greater

[1] Lecture I. was published in THE LANCET of May 19th, 1900, p. 1417.

than at another time of the day. I think that any malaria parasite which might enter or be set free in the blood when the immunising power of the body is at its height is likely to be destroyed by the resistive power. Should it happen that the power of resistance is at its minimum, then the parasite would survive, enter a blood-corpuscle, mature, and propagate its kind. In that way, it may be, the periodicity of malaria is caused—viz., by the combination of physiological conditions and the properties, so to speak, of the parasites.

We know when the new-comer arrives in a malarial country his first attack of malaria is usually a very severe one; it is usually either a continued or a remittent fever; that is to say, the fever does not exhibit in any marked way the definite periodicity which we are accustomed to associate with malaria. Apparently the parasites are permitted to enter the blood-corpuscles and mature at all times of the 24 hours. After a time, however, the body seems to become educated to a certain extent, so that by-and-by a definite periodicity is impressed upon the parasite and the continued fever after a time becomes remittent and by-and-by intermittent. I would interpret this by supposing that the body gradually acquires a certain degree of immunity and reaches at some time in the 24 hours the standard of absolute immunity and that in this way the parasite and the symptoms it gives rise to get a definite periodicity impressed upon them.

It is almost useless for me to attempt to describe the manifold clinical forms of malarial disease. We know that malarial fevers tend to assume a quotidian, a tertian, or a quartan type. We also know that in certain cases the quotidian becomes a remittent or continued fever. We also know that if we examine the blood in remittent or in continued malarial fevers we sometimes find in it the type of parasite characteristic of tertian, sometimes of quartan, sometimes of the æstivo-autumnal infection, and sometimes a mixture of two or even of all the types of parasites. At first it seems difficult to understand how a tertian or a quartan parasite could give rise to a quotidian fever. But such is the case and there can be no doubt that it can be explained. If you look at the blood of a patient with quotidian fever in very few instances will you find a quotidian parasite, which is amongst the rarest of malarial infections, if, indeed, it exists at all. You will find generally either a tertian, a quartan, or an æstivo-autumnal, which is also tertian in its periodicity. In the case of a quotidian fever arising from a tertian infection there are two generations of parasites, one which is half-matured and one which is practically matured. The half-matured parasites will produce the fever of to-morrow and of three days hence, the fully-matured will produce the fever of to-day and that of the day after to-morrow, and so on. A double quartan infection will produce a double quartan fever. You get fever to-day and to-morrow but no fever the day after to-morrow. A treble quartan infection, in the same way, will produce a quotidian fever. If the three forms of parasites concur you will have a corresponding mixture of clinical symptoms. You will easily understand how confused the resulting clinical manifestation will be from this fusion of forms, but with the microscope and the temperature chart you can unravel the clinical puzzle and read, so to speak, the writing in the blood.

Disregarding the ordinary intermittents, I will say a word about pernicious malarial fevers, a type which has been very much neglected by English writers and which is better understood by our French colleagues—at all events it is more dwelt on by them.

In the course of what appears to be an ordinary ague, and which we do not ordinarily associate with any particular danger, there is suddenly developed some alarming symptom which if it be not properly appreciated may prove fatal, and that in the course of a very few hours. These are called pernicious attacks (*accés pernicieuses*), and are classified under two headings, one conveniently called "cerebral" and the other "algid," the latter being associated with adynamic conditions, the former with manifest implications of the central nervous system.

The most common type of pernicious attack is known as "pernicious comatose malaria." The patient in the course of what apparently is an ordinary malarial attack suddenly becomes comatose; he cannot be roused, he has stertorous breathing, and unless skilfully treated he may die. Occasionally he comes out of this condition and temporarily recovers, but possibly at the next paroxysm of the fever he will fall into the same condition and die. Often these sudden attacks of insensibility are put down to apoplexy and very often a prognosis of hemiplegia is given. Fortunately for the patient this prognosis is sometimes upset by his coming out of the comatose condition without showing any evidence of hemiplegia.

Another type of pernicious cerebral fever, often mistaken for, and generally called, sunstroke, is hyperpyrexia. The patient has an attack of apparently ordinary ague, in the course of which, instead of his bursting out into perspiration and the symptoms subsiding when the thermometer reaches 105° F., the temperature may go on rising to 107° or 110° or even higher. Wild delirium merges into coma and death. Hyperpyrexial attacks are terrible things to witness. I have seen a good many and at first was prone to fall into the ordinary mistake of diagnosing heat-stroke. They occur very often during oppressive weather and are common in intemperate people. The diagnosis of heat-stroke, under the circumstances, is a somewhat natural one to make. On more careful consideration, particularly if the patient's blood is examined or a post-mortem examination is made, you will find, either from the presence of parasites or from pigmentation in the viscera, that the patient died not from heat-stroke but from malarial poisoning. Thus malarial coma and malarial hyperpyrexia are the most frequent and important of the cerebral pernicious types. But there are other forms: a not unusual one, particularly in children, is the epileptiform seizure.

In tropical countries it often happens that the first intimation of malarial infection in a child is an epileptiform seizure. Perhaps two days later there is a similar attack. You are inclined to give a gloomy prognosis; you tell the mother that the child is possibly an epileptic and you prescribe bromide. If you wait for 48 hours longer there is a third seizure and then if you use the microscope and the thermometer you will find that the child is not suffering from true epilepsy but from malarial fever. In adults also you sometimes have strange periodic seizures. One is a suddenly developed aphasia. I have seen this on more than one occasion. You are asked to visit a patient and you find him in bed exhibiting all the peculiarity of some form of aphasia, unable to speak, or using wrong words, misplacing them, and so on, and you are prone to diagnose grave cerebral disease. Occasionally the extrinsic muscles of the eyes are affected with some form of paresis. These cases are more common than is supposed but they are very frequently overlooked.

An explanation of these and similar conditions — the comatose cerebral attacks, the hyperpyrexial attacks, the epileptic seizures, the paretic conditions—is supplied by the brain sections shown under the microscope. You will see that the capillaries of the brain are crowded with malarial parasites. Should one particular centre of the brain be specially affected by the parasites, as, for instance, Broca's convolution, then you have a corresponding symptom. Should the heat-regulating centre—if there be such a centre—be selected then you may have hyperpyretic conditions. The algid attacks are somewhat rarer but they are equally important. It is necessary that one should be aware that such attacks do occur. A malarial fever very like cholera is not an unusual thing in certain districts. The patient, instead of getting an ordinary malarial attack, is suddenly seized with choleraic symptoms—vomiting, purging, rice-water stools, cramps, vox cholerica, and all the other signs of epidemic cholera. If you inquire into the history you may learn that he had malarial attacks perhaps only one or two days before. You examine the blood and you find malarial parasites, and if you treat the patient for malaria you will cure his cholera It is well to recollect the possibility of such attacks in tropical countries. Dangerous syncopal attacks may occur in association with the symptom which we usually hail as heralding relief in a malarial paroxysm. Profuse perspiration occurs till the bedding is drenched; if the patient gets up and tries to stand he has, it may be, a fatal syncopal attack. Sometimes profuse sweating occurs at the very commencement of the fever paroxysm; the patient is cold and algid and the profuse sweatings may end perhaps in collapse. In other forms vomiting, dysenteric conditions, and so on occur. Indeed, the variety of clinical features exhibited in malarial infections is too great for me to fully discuss on this occasion.

A practitioner in tropical countries ought always to suspect that any sudden and inexplicable attack may be attributable to malaria. I would emphasise the word *may* because I do not wish it to be understood that such an attack *must* be malarial. We should not conclude, as is so often done, that every case of disease connected with the tropics which we

cannot diagnose is malaria; still, we ought to suspect it. There is one important type of what is believed to be malarial disease which has of late come into prominent notice, partly in consequence of the opening up of Africa and partly in consequence of the utterances of a well-known pioneer in pathology—Professor Koch. I refer to blackwater fever. This is a disease which, strange to say, has not been recognised till within the last 30 or 40 years. If you search the writings of the old Indian physicians you will find no mention of blackwater fever or of any corresponding disease. Some time in the "fifties" certain French physicians first drew attention to its occurrence in one island off the coast of Madagascar, and since that time the disease has been recognised in the West Indies, in South America, in the southern parts of the United States, and in the Malay Archipelago. It is known to be the most common cause of mortality among Europeans on the West Coast of Africa. It exhibits all degrees of intensity. A patient resident in one of the endemic districts who perhaps has had many attacks of ordinary malarial fever develops what at first he considers as one of his usual malarial attacks and he does not think much of it. Suddenly he is seized with severe rigor. (Strange to say, rigor, so prominent a symptom of agues and intermittent fevers in the temperate zones, is singularly rare in the tropical zones. In those countries in which malarial fever is a really dangerous item in the pathology rigor is not as a rule a prominent malarial symptom. In blackwater fever it is different in this respect—violent shivering is a usual initial symptom.) The patient may then be seized with the desire to pass urine; he is astonished to find that his urine is black. He goes on urinating frequently and the urine continues to have this peculiar colour. He looks at himself in the mirror and finds that his face has become as yellow as saffron. This condition is associated very generally with fever, vomiting of biliary material, pain about the loins and back, and severe hepatalgia and intense prostration. Often as the case advances the patient exhibits all the symptoms of sudden profuse hæmorrhage (doubtless associated with the great discharge of hæmoglobin), giddiness, sweating, sighing, restlessness, and syncope. In many cases fortunately the hæmoglobinuria—for such is the symptom—gradually disappears with the fever, the urine becoming less dark and after a time natural in colour, but the patient is left intensely anæmic and jaundiced and only slowly recovers. Very likely there is no relapse. In some cases, however, the symptoms do not subside, the hæmoglobinuria persists, and the patient may die from syncope or exhaustion; or, the hæmoglobinuria persisting, the urine gradually gets smaller in quantity and becomes thicker and almost glutinous, being reduced to two or three ounces in the 24 hours. It may be entirely suppressed and the patient may die with uræmic symptoms, or he may recover temporarily and the discharge of urine may be re established, but in two or three days or weeks he may die with symptoms of acute nephritis. Blackwater fever is a terrible disease; the mortality from it is enormous, amounting in some epidemics to as much as 50 per cent., in others to 25 per cent. Occasionally the mortality is as low as 10 or 15 per cent. The disease, however, is always a dangerous one, and it is one that is almost sure sooner or later, if the patient remains in the endemic area, to recur. The liability to recurrence unfortunately does not cease when the patient has left the endemic area, for, as with other malarial disease (if it be a malarial disease), symptoms are liable to return or even to appear for the first time after the patient has returned to Europe. I have seen a good many cases in England. Only three weeks ago I saw a young Englishman die from this disease in London. I do not know how long the liability to recurrence persists after return to temperate climates, but certainly it persists for five months. I have known of such cases.

There are certain popular fallacies about the diagnosis of malaria which it is well to bear in mind. The principal of these is that everybody who has passed through the Suez Canal, or who has visited Rome, or has lived in a tropical country, is the subject of malarial infection. That is about the commonest and the most vicious fallacy among practitioners in this country. Fortunately many tropical lands are absolutely free, or relatively free, from malaria; it is only in certain places even in tropical countries that malaria exists. Do not, therefore, when a patient comes from a tropical country complaining of some more or less obscure symptoms, jump to the conclusion that those symptoms are the outcome of a malarial infection. One sees curious mistakes in connexion with this popular fallacy. I recollect reading some time ago in one of the medical papers two cases of what was called "malarial neuritis." I was very much struck with the evidence for founding his diagnosis of malarial neuritis with which the writer appeared to be satisfied. One patient was a sailor, and doubtless in the course of his life as a sailor he had visited malarial countries—*ergo*, his neuritis was malarial; that was all the evidence for the diagnosis. The other case was very much the same, the patient being a sailor who at one time—many years ago—had had malaria; and that was all the evidence which the writer had for diagnosing the case as one of malarial neuritis. This is typical of the diagnosis one often finds of obscure disease in patients from tropical countries.

Few diseases are so easily diagnosed as malaria. We have three pathognomonic tests which, intelligently applied, are absolutely infallible. There is the clinical test of periodicity, but diurnal periodicity is of no value in the diagnosis of malaria. A periodicity of 24 hours is shared with malaria by many diseases, but it is otherwise with a periodicity of 48 hours or 72 hours. Only one pathological condition exhibits this feature and that is the malarial infection. Any disease exhibiting a tertian or quartan periodicity is certainly malarial. But I strongly dissuade you from putting any reliance upon quotidian periodicity in the diagnosis of malaria; it is most misleading and constantly gives rise to mistake. If a patient has well-marked rigor followed by pyrexia, and that by profuse perspiration, and if this occurs day after day, do not jump to the conclusion that the case must be malarial because of the periodicity and because the patient is from a tropical country. In diagnosis quotidian periodicity should be absolutely ignored. I have seen a patient with well-marked abscess of the liver, the patient himself being a medical man, and yet because he had rigor, pyrexia, and perspiration day after day he was sure that he was suffering from malarial fever, and he was taking quinine in consequence. Nearly all suppurative processes are attended by a fever with a quotidian periodicity more or less marked. Osler says that he never sees a case of abscess of liver that has not been drenched with quinine, the diagnosis of malaria having been made doubtless in consequence of the quotidian recurrent pyrexia. Many diseases—ulcerative endocarditis, surgical kidney, gallstones, syphilis, tubercle, almost every disease with febrile associations—may exhibit quotidian periodicity. But it is otherwise with tertian and quartan periodicity; these are both absolutely pathognomonic of malaria. Then we have the therapeutic test—the test by quinine. Quinine properly administered in a case of malarial disease in 48 hours is in my experience invariably followed by abatement of the symptoms. If you give a patient quinine for 72 hours and there is no abatement of fever you should revise your diagnosis; the patient is not suffering from malaria. There is no use in persisting with quinine for days and weeks on the supposition that the case is malaria. You can poison the malaria parasite with quinine as certainly as you can poison a man with arsenic.

It is not sufficient, however, to rely on the therapeutic test, because in many instances we have no time to wait for its application, as in grave cerebral attacks. In such cases you cannot wait to see the effect of quinine before making the diagnosis. By the time the diagnosis is established the patient might be dead. It is necessary to have some more rapid means of arriving at the conclusion of what is the matter with the patient. That is supplied by the microscope; it is an immediate and invaluable test for malaria. Practitioners in tropical countries fail in their duty to their patients if they do not acquaint themselves with the application of the microscope in the diagnosis of malaria. For the practitioner nowadays to undertake the care of life in tropical countries and to be ignorant of the use of the microscope in malarial diagnosis is positively culpable. I think that the practitioner who visits a tropical country and pretends to take care of patients there and who cannot use his microscope is like a physician in England who is ignorant of the use of the stethoscope. Of the two instruments by far the more valuable in tropical practice is the microscope. The microscopic test is easily applied. All that is required is a high-power lens, a $\frac{1}{12}$ objective, a fair illumination and two or three slides, some cover slips, and a patient. In five minutes you can tell whether the patient is suffering from malaria or not. Anyone who ignores

this simple method is not only foolish but I say he is also sinful.

One word in conclusion about the treatment of malaria. This resolves itself into one word, the use of quinine. We have in quinine really a specific (about the only real specific in the Pharmacopœia), and if we can properly apply the specific in 99 cases out of 100 we can save the patient from the effects of the parasite. It is one thing, however, to possess the specific and it is another to be able to apply it. In cases of violent remittent fever and grave cerebral attacks the patient may be vomiting and unable to absorb the drug, or he may be insensible and unable to swallow it. You must have recourse to other means and give five or ten grains of a soluble salt of quinine hypodermically or rather intra-muscularly. This may save the patient; he may die without it. At one time this method of using quinine got out of favour because in several instances the hypodermic injection had been followed by tetanus and the death of the patient. Now, tetanus is not caused by quinine; it is caused by the tetanus bacillus. Death from tetanus following on the hypodermic injection of quinine is caused by the culpable carelessness of the physician who, in ignorance of course, has used an injection containing the tetanus bacillus. The hypodermic injection of quinine, though painful and often objected to by the patient, is free from risk provided that ordinary precautions are taken to render the syringe, the skin, and the solution aseptic.

A certain number of patients appear to have peculiar sensibilities as regards the action of quinine. In some it gives rise to urticaria, in some to peculiar toxic effects, and therefore to some patients it cannot be given at all. In these cases methylene blue is of service. I have not much experience of its use; I have not the same faith in it as I have in quinine. Professor Koch is one authority for its use. It is given in doses of from three to five grains three or four times a day. Another and graver accusation against quinine is that it is apt to give rise to hæmoglobinuria. Professor Koch's utterances in regard to this have been somewhat misunderstood. Many people suppose that Koch said that quinine gave rise to—is the cause or virus, as it were, of—hæmoglobinuria. What he did say was that quinine under certain conditions brought on hæmoglobinuric symptoms, and what he said is in my opinion, true, only he has expressed himself somewhat vaguely. A man is responsible not for his words only but also for the effect which they produce, and Koch's words have had a most prejudicial effect in this matter. In consequence of what he has said quinine is looked upon with suspicion, if it be not absolutely tabooed, in some tropical countries. This is unfortunate, for even if quinine is a danger in certain cases, if it does tend to produce hæmoglobinuria in some cases, it is not a one-hundredth part so dangerous in this respect as the malaria parasite. Of the two evils the parasite is infinitely the greater one, and therefore the withholding of quinine from a patient in whom the parasite is circulating is more apt to be followed by blackwater symptoms than if the drug be given.

In cases of blackwater fever examine the blood and if you find in it the fever forms of the malarial parasite give quinine; if you do not find the parasite withhold the quinine. This is a good rule. It is a fortunate circumstance that hæmoglobinuria frequently kills the parasite in the circulation. If you look at preparations of blood made just before the appearance of hæmoglobinuric symptoms you will often find the malarial parasite; if you examine the blood of the same patient just after the appearance of the hæmoglobinuric symptoms you may find a very few parasites; and if you examine it a little later, say 12 hours after, you may fail to find any parasites at all. Apparently there is a process of natural cure caused by the parasite itself when it brings about hæmoglobinuria. That should encourage us to withhold quinine in many cases of blackwater fever, especially when the parasite cannot be detected by patient and competent observation with the microscope.

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INSPECTION OF COWS TO DETECT TUBERCULOSIS.—The Dartford Urban Council, after communication with the urban district councils of Bexley, Erith, and Dartford Rural Council have jointly appointed for one year Mr. A. Edgar, F.R.C.V.S., on terms agreed upon, to undertake the duties of periodically inspecting cows in the respective districts under their control.

# A Clinical Lecture

ON

# MODERN METHODS OF AMPUTATING AT THE HIP-JOINT,

WITH A TABLE OF 15 CASES.

*Delivered at the General Hospital, Birmingham, on March 1st, 1900,*

BY THOMAS F. CHAVASSE, M.D., M.C. EDIN., F.R.C.S. EDIN. & ENG.,

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GENTLEMEN,—The patient here presented is rather an unusual case, for you will see that she has had both her lower limbs removed at the hip-joint. The clinical history is briefly this. Her age at present is 27 years and for some years she had suffered from tuberculous caries of the tarsal bones of the right foot, so that in October, 1895, it was necessary to perform a Symes's amputation at the ankle-joint. Some months later tuberculous osteitis manifested itself at the end of the tibia, and in October, 1896, Stephen Smith's amputation was performed at the knee joint. The stump never properly healed, and, becoming the site of another tuberculous deposit, she was re-admitted into hospital in May, 1897, and on the 29th of that month I removed the femur at the hip-joint. Healing was extremely protracted, and it was six months before the stump was sound. She was then lost sight of for some time, but she re-appeared at the hospital in April, 1899. The left foot and ankle were found to be much swollen and œdematous and there were signs of fluctuation on the outer side of the ankle-joint. On the lower third of the leg was a large tuberculous ulcer which had existed for three months; the knee-joint was filled with fluid and presented the usual symptoms of tuberculous disease. In the middle of the quadriceps extensor was a large caseating mass of the size of a clenched fist. The patient was emaciated and hectic. After a consultation with my colleague, Mr. Haslam, it was deemed desirable on April 20th to remove the left limb at the hip-joint. The healing of the stump was again protracted, but, as you now see, only two minute spots at the top of the external incision remain unhealed. The general health of the patient seems good, she has gained flesh and she takes her food and digests it well. At present there are no signs of any tuberculous deposit in any of the other joints of the body or in the internal organs.

I have now performed 15 amputations at the hip-joint upon 14 different individuals and herewith is presented in tabular form the sex and age of each patient, the disease for which the operation was undertaken, the plans adopted for restraining the hæmorrhage, the method of operating, and the results. On looking at the table you will see that in the series only two methods of operating have been practised. In the first anterior and posterior skin-flaps have been shaped from without inwards, and the muscles and vessels divided high up as close as possible to the pelvic bones by a circular incision. This method has been adopted in three cases (Cases 1, 2, and 9), each time with success, and theoretically it is the best method to be adopted when a malignant neoplasm has to be dealt with. Its drawbacks are that it undoubtedly increases somewhat the shock attendant upon the operation and the high division of the muscles necessitates the direct compression of the aorta for the restraint of hæmorrhage.

The second method is for practical purposes that known as the external racket operation and is really a combination of the vertical and circular incisions. The names of many eminent surgeons are associated with this plan of operation, notably, Furneaux Jordan, Lister, Esmarch, &c.; but I have preferred to speak of it as the external racket method as thereby the general principle of the operation is more likely to be impressed upon your minds than if it be associated with the name of any distinguished surgeon of the present or past generation. The precise steps will differ somewhat in a case in which the operation is undertaken for malignant disease from those taken when it is performed for the disease

of the hip joint. In the latter condition the lower the mass of muscles of the thigh are divided the less the shock to the patient, and the bone can be readily shelled out, subperiosteally or otherwise, especially when excision of the head has previously been performed, without interfering materially with the muscles on the inside of the thigh. For drawing special attention to these facts and demonstrating their utility in actual practice Mr. Furneaux Jordan, of this city, deserves all praise. In case of a malignant growth it is obvious that the further all the soft structures are divided from the growth the better are the prospects of success as far as recurrence in the stump is concerned. In such instances a circular incision may be made round the limb at about six inches from Poupart's ligament, merely dividing the skin and subcutaneous tissues; a vertical incision is then made commencing just above the great trochanter and carried downwards on the outer aspect of the limb until it meets the circular cut previously made. The skin is then reflected upwards all round as high as the lesser trochanter. At this point all the muscles and other soft parts are cut through by a circular incision reaching the bone, the femoral vessels are at once seized and ligatured, and steps are taken for the disarticulation of the head of the femur. For this purpose it is better to change the amputating knife for a large scalpel, as with this the joint is more readily entered, the ligamentum teres divided, and the head of the bone dislocated. A few cuts with the knife behind the head of the femur enable the removal of the limb to be completed. The remaining known vessels are then secured and the wound is closed in the usual manner as expeditiously as possible, after the tourniquet has been removed and any spouting arteries ligatured. It is better to drain the acetabulum either with a fair-sized drainage tube or with an iodoform gauze drain.

There is another method to which I should like to direct your attention and which might be especially serviceable when the operation is undertaken for an emergency and skilled assistance is not attainable. Personally I have had no experience of the operation, but it is described by Dr. W. L. Estes[1] as the "gradual dissection method" and is practically a modification of the German operation suggested by Professor Rose. The first step of the operation is the ligation of the common femoral vessels at Poupart's ligament and division of the same between double ligatures; short anterior and posterior skin flaps are then formed from without inwards, and the soft parts are divided by gradual dissection close up to the pelvis, all known vessels being secured before they are divided, the smaller ones being clipped immediately afterwards. It is at once apparent that the method takes more time for its accomplishment than the other plans, but it can be carried out with one assistant, who need not be a very highly trained one, and the surgical apparatus required is simple and slight.

The two main risks of the operation for amputating at the hip-joint to which I propose shortly to direct your attention are hæmorrhage and shock.

*Hæmorrhage.*—Many ingenious inventions have been introduced to obviate hæmorrhage, such as tourniquets, a rectal staff, clamps, &c.; but until a few years ago most practical surgeons relied mainly upon rapid execution and the dexterity of an assistant in digitally compressing the vessels before and after division. I may at once say that owing to a plan advocated by Professor Wyeth of New York City any fears as regards profuse hæmorrhage during this operation exist no longer. Professor Wyeth's idea is directed to the prevention of the slipping of the elastic tourniquet which is applied over the femoral vessels at the moment when the disarticulation of the limb is effected. This is accomplished by means of two steel skewers or pins, which have a head, and are rounded and sharp-pointed at the other end, ten inches in length and three-sixteenths of an inch in diameter. They may seem rather formidable instruments at first sight, but for an adult in actual practice they are none too strongly made, as the strain upon them to keep the elastic tourniquet *in situ* during the necessary manipulations is severe. I show you two pins that I have used in three operations upon adults and you will perceive that they are considerably bent, this being accomplished by the tourniquet pressure. The elastic tourniquet employed should be half an inch in diameter and long enough to encircle the top of the thigh four or five times. In young children, however, a tourniquet of very much smaller calibre will suffice and instead of Wyeth's pins I employ two much smaller steel skewers such as a cook uses for trussing game or chickens for cooking purposes and which can be procured at any ironmongers, and I find that they answer very well. They are not, however, trustworthy for an adult, and on one occasion, when using them on a full-grown person, the outer one snapped off short and becoming useless had to be replaced in the middle of the operation. Fortunately the main vessels had been secured before the mishap occurred. The accompanying illustration will show the use of the pins. It is taken from Professor Wyeth's paper.[2] The outer needle is introduced a quarter of an inch below the anterior superior iliac spine and somewhat to its inner side, passing through the muscles to the outer side of the hip, and is made to emerge three or four inches from its point of entrance. Its direction should be a little backwards so as to keep it as far as possible from the great trochanter of the femur. The inner needle is inserted through the skin and the adductor longus muscle half an inch below the fork in the male and is brought out one inch in front of the tuberosity of the ischium. To protect the operator's hands a piece of cork is applied to the sharpened end of each needle as soon as it is in position. The limb is then emptied of its blood by elevation and the elastic tourniquet is wound tightly round the limb above the pins. Wyeth recommends that a compress four inches square and two inches thick be laid over the femoral vessels as they cross the brim of the pelvis before the tourniquet is applied. I have not, however, carried out this detail in any of my own cases. By applying the tourniquet effectively in the above manner hæmorrhage both from the anterior and posterior vessels is absolutely prevented, but the limb becomes very tense, and I have found that it takes a little more time to complete the disarticulation, as the free movements of the operator are somewhat hampered by the presence of the tourniquet and the pins, but this is quite a small matter as compared with the advantages obtained by immunity from bleeding. Before the pins and tourniquet are removed practically all the known arteries can be secured, and although there may be some general oozing subsequently it can be readily restrained by a good-sized flat sponge. On looking at the table you will see that eight cases out of the 15 have been treated in this manner and with, I think, such marked success that I have no hesitation in saying that at the present time it is the best method which we have at our disposal.

The second plan I have employed to restrain hæmorrhage is by directly compressing the abdominal aorta by placing a fair-sized pincushion or pad over it and protecting the spine and flanks of the patient with pads of lint, then encircling the abdomen with a thick elastic tourniquet. It is a very effective method, especially in children, but it is not so desirable in adults because the cushion is more apt to slip and the tight constriction necessary to stop the arterial circulation compresses also the intestines and may also embarrass the breathing of the patients. It has the advantage of not interfering in any way with the part to be operated on and permits the unimpeded formation of anterior and posterior skin flaps and the high division of the muscles attached to the pelvis, whilst the manipulations of the hip joint can be freely effected. It has been employed four times in the series (in Cases 1, 2, 4, and 9), and invariably with success as far as loss of blood is concerned.

The third method employed in the series is digital compression by a skilled assistant, and although in the three cases (Cases 3, 5, and 6) this has been carried out and the femoral vessels have been secured at an early stage of the operation, and I have also had the great advantage of the skilled fingers of my colleagues, yet I am bound to say that all three patients lost more blood during the operation than those subjected to the other two methods and that most of the blood so lost came from the vessels posterior to the joint.

*Shock.*—The shock will generally be severe, but its dangers can, I think, be reduced by certain routine observances. In the first place, the theatre or room in which the operation is conducted should be well warmed; 65°F. is a good temperature. Then a hot water table or a water bed filled with hot water for the patient to lie upon should be provided,

[1] Lehigh Valley Medical Magazine, January, 1894, and Philadelphia *Polyclinic*, March 24th, 1894.

[2] Annals of Surgery, vol. xxv., 1897.

and the extremities, excepting that to be removed, and the trunk should be enveloped in cotton-wool. The apparatus should be at hand for the intravenous injection of normal saline fluid and it is as well if the basilic vein of the arm on the opposite side to which the removal of the lower extremity is to be effected is dissected out by an assistant before the operator actually commences. I say on the opposite side because it is advisable to undertake the injection when the closure and dressing of the wound are being performed and the manipulations of the injector will thus not be impeded by the chief operator and his other assistant. I have now carried out the injection of saline fluid in my last eight cases and the effects have been so marked, and I believe so beneficial, that in my judgment it ought to form part of the routine of the operation in every case. One cannot say that it will invariably save life, still, it may be the means of tiding the patient over the most critical time and so allow the opportunity for the administration of liquid foods and the exhibition of other remedies.

The most prominent symptoms of the shock following the operation are cold clammy sweating of the body, cold extremities, extreme restlessness, small rapid pulse, and constant efforts at vomiting.

All the cases in the series, excepting Case 6, have been hospital cases, and in this class of patient it is often extremely difficult to make the patients or their friends realise the necessity for the removal of the limb. Cases 3, 10, and 13 are examples. Case 3 was that of a man, aged 32 years, who had had excision of the left femur performed and a large portion of his acetabulum removed for long-standing hip-disease. Osteitis of the shaft of the bone ensued and the amount of pus discharged daily was more than a pint, yet for more than nine months after he had been informed that it was impossible to save the limb he refused to have amputation performed. The patient in Case 10, a girl aged 14 years, had her hip-joint explored in June, 1896, and it was found that the acetabulum was perforated and the tuber ischii carious, yet her parents declined to have the major operation carried out until January, 1897. She recovered well from the shock of the operation but she gradually sank and died on the evening of the third day exhausted. In Case 13, that of a girl aged eight years, the head of the left femur was excised on Feb. 26th, 1897. By the beginning of 1898 the cicatrix broke down and disease of the acetabulum and shaft of the femur were detected, but the parents refused to have amputation performed for 14 months, by which time there was amyloid disease of the liver, the edge of the organ being readily detected below the ribs, and the urine contained albumin and waxy casts, besides being increased in quantity. When she was admitted into hospital in April, 1899, there were no fewer than 12 discharging sinuses round the hip-joint, the pus being of the most offensive description, yet after the operation the health of the child immediately began to improve, the size of her liver gradually diminished, the polyuria and albuminuria disappeared, and she is to-day alive and well, although in September last it was necessary to remove a loose piece of the pelvis and to scrape out several unhealed sinuses.[3]

Age is an important factor to be considered when a successful issue is sought for, and at one time I thought that in those patients much over 20 years of age who had to undergo this operation each added year of life increased the risk in a disproportionate degree. But the certain restraint of hæmorrhage and the injection of normal saline fluid before the patient is removed from the table has modified this idea. Eight of the patients in the tabulated cases were well over this age and of these six recovered. The oldest patient was 56 years of age, and he had been an inmate of the hospital in November, 1898, but then declined to undergo amputation. Nearly three months afterwards, when the sarcoma had increased very much in size, he was going upstairs at his own house and slipping on a step he felt his femur break in the situation of the neoplasm. This induced him to return to the hospital to have the limb removed and although convalescence was slow the stump was soundly healed in two months. Perhaps, therefore, we are justified in concluding that modern methods of performing the operation have considerably reduced the age mortality.

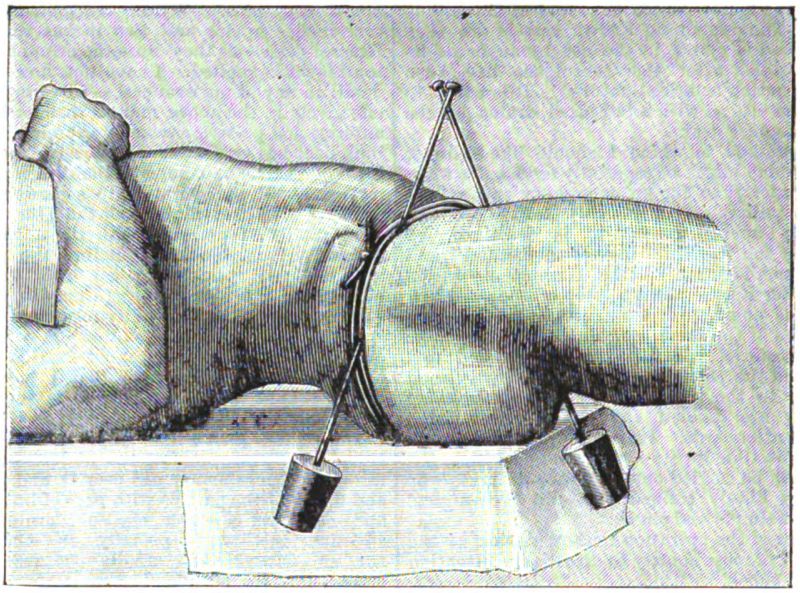

Illustration showing tourniquet and pins in position.

Pregnancy need not be considered to be a bar to the operation. In Case 8 the woman was 29 years of age and was six months pregnant, yet she bore the operation well and did not miscarry until a month afterwards, when the stump was practically healed. She survived the operation long enough to give birth to a healthy child after leaving the hospital. Case 15 was a woman, aged 23 years, whom I saw in the Rugeley Cottage Hospital with Mr. H. D. Chapman. She was over eight months pregnant with her first child and had a fungating sarcoma originating in the head of the tibia and implicating the right knee-joint and the belly of the semimembranosus muscle. We decided in consultation to induce premature labour and ten days later, a healthy living child having been born, the physical pain was so great that with the assistance of Mr. George Heaton and Mr. H. D. Chapman I thought it desirable to remove the entire

[3] The patient now (July, 1900) shows signs of caries of the second lumbar vertebra.

TABLE OF 15 CASES OF AMPUTATION AT THE HIP JOINT.

| No. | Sex and age. | Date of operation. | Disease. | Restraint of hæmorrhage. | Operation. | Result. | Remarks. |
|---|---|---|---|---|---|---|---|
| 1 | F., 15 years. | June 3rd, 1882. | Periosteal sarcoma of the lower third of the left femur. | Compression of the abdominal aorta by pin-cushion and elastic tourniquet. | Anterior and posterior skin-flaps and circular division of the remaining soft parts close to the pelvis. | Healed in six weeks. Recurrence in the right lung and death in six months. | Recorded in Brit. Med. Jour., vol. i., 1884. |
| 2 | M., 5 years. | Oct. 13th, 1882. | Morbus coxæ with necrosis and fracture of the lower third of the right femur. | Compression of the abdominal aorta by pin-cushion and elastic tourniquet. | Anterior and posterior skin-flaps. | Healed by Dec. 3rd, 1882. | The patient is still alive. Recorded in Brit. Med. Jour., vol. i., 1884. |
| 3 | M., 32 years. | Feb. 27th, 1883. | Left morbus coxæ of long standing. Head of the femur and part of the acetabulum removed in 1882. | Digital compression of the common femoral artery. | External racket method. | Death from shock on March 1st. | Large white kidneys were found post mortem. Brit. Med. Jour., vol. i., 1884. |
| 4 | M., 5 years. | July 1st, 1890. | Right morbus coxæ. | Compression of the abdominal aorta by pin-cushion and elastic tourniquet. | External racket method (sub-periosteal). | Sent to a convalescent home on August 22nd. | The patient is still alive; anterior excision was performed on April 26th, 1890. The acetabulum was diseased. |
| 5 | M., 16 years. | Oct. 17th, 1890. | Left morbus coxæ. | Digital compression of the common femoral artery. | External racket method. | Death from shock nine hours afterwards. | The patient was much emaciated from prolonged suppuration. At various times he had spent many months in hospitals. |
| 6 | M., 26 years. | May 31st, 1892. | Purulent osteo-myelitis of the right femur. | Digital compression of the common femoral artery. | External racket method. | Healed by June 8th. | The lower third of the thigh was amputated by Carden's method in November, 1891, for ununited fracture through the head of the tibia affecting the knee-joint. The patient fell on the stump a month before the last operation. There was a family history of tuberculosis. |
| 7 | F., 39 years. | Feb. 20th, 1896. | Endosteal sarcoma of the lower third of the left femur. | Pin method (Wyeth). | External racket method. | Death from shock in 10 hours. | The patient had sustained a fracture of the lower third of the femur six months previously. |
| 8 | F., 29 years. | March 26th, 1896. | Endosteal sarcoma of the lower third of the right femur. | Pin method (Wyeth). | External racket method. Intravenous injection of 15 ounces of saline fluid. | Healed by June 5th. Died on May 25th, 1897, from recurrence in the left lung. | The patient was six months pregnant at the time of the operation. Abortion took place on April 26th. The fœtus was dead. |
| 9 | M., 10 years. | Nov. 13th, 1896. | Periosteal sarcoma of the lower third of the right femur implicating the knee-joint. | Compression of the abdominal aorta by pin-cushion and elastic tourniquet. | Anterior-posterior skin-flaps and circular division of the soft parts close to the pelvis. Intravenous injection of half a pint of saline fluid. | The wound healed in three weeks except a small sinus. | The patient was alive 18 months after the operation. |
| 10 | F., 14 years. | Jan. 1st, 1897. | Right morbus coxæ. The acetabulum was perforated and the tuber ischii was carious. | Pin method (Wyeth). | External racket method. Sub-periosteal enucleation. Intravenous injection of half a pint of saline fluid. | Death from exhaustion on Jan. 4th. | The joint had been explored in June, 1896, but amputation was delayed at the request of the relatives of the patient. |
| 11 | F., 24 years. | May 29th, 1897. | Tuberculous osteitis of the stump following amputation at the right knee-joint. | Pin method (Wyeth). | External racket method. Intravenous injection of one pint of saline fluid. | Healed. | Syme's amputation at the ankle-joint for tarsal caries was performed on Oct. 8th, 1895, and Stephen Smith's amputation at the knee-joint on Oct. 9th, 1896, for osteitis of the tibia. |
| 12 | M., 56 years. | Jan. 26th, 1899. | Periosteal sarcoma of the lower third of the left femur. | Pin method (Wyeth). | External racket method. Rectus muscle infiltrated with new growth and divided high up close to the acetabulum. Intravenous injection of saline fluid (one pint). | Healed by March 27th. | The patient fractured his femur when walking upstairs on Jan. 23rd, 1899. |
| 13 | F, 8 years. | April 6th, 1899. | Left morbus coxæ. (Amyloid degeneration of the liver and kidneys.) | Pin method (Wyeth). | External racket method; intravenous injection of saline fluid (half a pint). | Sent to a convalescent home on June 6th. Sequestrum removed from the pelvis on Sept. 14th, 1899. | The head of the bone was excised on Feb. 26th, 1897, and scraping was done on Oct. 30th, 1897. The parents refused amputation in December, 1897. |
| 14 | F., 26 years. | April 20th, 1899. | Tuberculous disease of the left knee-joint and ankle-joint; caseating mass infiltrating the anterior muscles of the thigh. Tuberculous ulcer of the middle third of the leg. | Pin method (Wyeth). | External racket method; intravenous injection of saline fluid (one pint). | Healed. | This was the same patient as in Case 11. |
| 15 | F., 23 years. | Nov. 19th, 1899. | Endosteal sarcoma of the head of the right tibia, implicating the knee-joint and infiltrating the belly of the semi-membranosus muscle. | Pin method (Wyeth). | External racket method. Saline fluid injected into the cellular tissue of the axilla (12 ounces). | Healed. | The patient was over eight months pregnant with her first child and premature labour was induced 10 days before operation. Convalescence was retarded by a mammary abcess. |

lower extremity. Convalescence, as might be expected, was tedious and was also complicated by a mammary abscess, yet with care and good nursing the patient has at length made a satisfactory recovery.

Of the 15 tabulated operations performed on 14 patients 11 of the patients recovered and four died, a mortality of 26·6 per cent. These cases were taken just as they occurred in practice and there was no selection of patients. In six instances the operation was performed for sarcomatous growths (four women and two men) and of these one died from shock. In the remaining nine the removal of the limb was undertaken for bone disease. The malignant cases were: Case 1, periosteal origin, round-celled growth; Case 7, endosteal, mixed celled with a preponderance of round cells; Case 8, endosteal, round-celled; Case 9, periosteal, mixed celled with a preponderance of round cells; Case 12, periosteal, mixed celled (round and spindle cells about equally distributed); and Case 15, periosteal, mixed celled with a preponderance of round cells. In three of the fatal cases the cause of death was shock pure and simple (Cases 3, 5, and 7), and it was after the death of the patient in Case 7 that I began systematically to inject saline fluid at the conclusion of the operation and since then no patient has succumbed from this cause. The patient in Case 10 rallied well from the immediate effects of the operation and did not cause anxiety until the third day when she began to sink slowly without any assignable cause except that apparently she had no rallying power. You will note that in this case as well as in Cases 3 and 5 permission to amputate was not obtained until a long time after the patient and the friends had been warned that the limb must be sacrificed. In fact, in three out of the four fatalities this prolonged wait was, I believe, the factor that caused the operation to be unsuccessful. Yet it is not to be wondered at that patients or their friends procrastinate in these instances, for a surgeon will generally find that assent to perform an operation is obtained readily enough when a really good prospect of recovery can be promised, whilst waiting is preferred if only a *dernier ressort* can be offered.

The tables of Dr. Sheppard of Philadelphia published in Ashhurst's "International Encyclopædia of Surgery"[4] show that 245 cases undertaken in civil practice give a mortality of 41·1 per cent. Mr. Frederick Page[5] gives 16 cases in which the operation was undertaken for disease in the Royal Infirmary, Newcastle-on-Tyne, with 10 recoveries and six deaths—mortality of 37·5 per cent. Dr. John Erdmann[6] of New York, collecting the figures of eight hospitals in that city, shows 18 cases with eight deaths, or a mortality of 44·4 per cent., but it is quite possible and probable that cases operated upon by a variety of surgeons will show a larger mortality-rate than if one particular surgeon had had the entire experience. Hence Dr. Estes[7] in his own tables had seven cases with one death, or a mortality of 14·2 per cent. But the most remarkable and most successful number of cases that have yet been collected are those of Professor Wyeth[8] who has brought together 69 cases in which hæmorrhage has been restrained by the application of his pin method. Four of these were primary cases and cannot fairly be included in the series as test cases. Their exclusion reduces the number to 65 in which the operation was performed for disease, with eight deaths, a mortality of 12 3 per cent. Of these eight one died from pneumonia on the thirty-second day when the patient was getting about, and one from tuberculous peritonitis on the eleventh day. If these be omitted as not being directly attributable to the operation we have 63 cases and six deaths, a mortality of 9·5 per cent., and one of these was due to a preventable cause, septicæmia.

From these figures I think that we are justified in concluding that an improved modern technique of operating, which includes the antiseptic and aseptic methods, has reduced the mortality of a formidable procedure to such really small dimensions that in suitable cases there is no longer any actual excuse for procrastination and that we are justified in urging operation in cases in which up to now we have been content merely to recommend it. If we can do this the immediate mortality of the operation will in future be possibly reduced even below Wyeth's figures.

[4] Vol. i., 1882.
[5] THE LANCET, March 5th, 1892, p. 523.
[6] Annals of Surgery, vol. xxii., 1895.
[7] New York Medical Record, Nov. 3rd, 1894.
[8] Annals of Surgery, vol. xxv., 1897.

# ON RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS.[1]

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CASES of the above occurrence are rare—so rare that having lately observed one I have thought it well to collect the others which have been recorded and endeavour to present as accurate a picture as possible of this hitherto invariably fatal accident. The occurrence seems worthy of attention, not only on account of the interest attaching to its rarity and the peculiar and alarming symptoms with which it is attended, but also because the cases resemble each other so closely in previous history, signs, and symptoms that a correct diagnosis is quite within the bounds of possibility and modern advances in the surgery of the mediastinum seem to warrant a hope in the feasibility of successful intervention in some future case. I shall first detail particulars of a case under my own observation.

A man, aged 40 years (Case 17 in the table) was admitted to the Mater Misericordiæ Hospital at 1 P.M. on Nov. 18th, 1899, complaining of pain, not very intense, in the lower part of the chest and of swelling of the neck. His face was deeply cyanosed, he seemed to be gasping for breath, the pulse was quick and weak, and his general condition was somewhat collapsed. The neck and face were much swollen on both sides and palpation at once revealed the fact that the swelling was due to subcutaneous emphysema. His voice was low and hoarse and he spoke little and that with much difficulty. No treatment had any effect and the dyspnœa became more intense, the pulse weaker, and the emphysema meanwhile crept up to the eyelids and down the thorax. Death occurred at 8 P.M. His friends stated that he was of alcoholic habits and that he "had been more or less drunk every night for the last 20 years." He used to vomit every morning and was much given to "dry retching." On the evening before his death he had had tinned salmon for dinner and the following morning had retched worse than usual. Nevertheless he went to his work and whilst there noticed that his neck was swollen so that his collar became uncomfortably tight. His breathing became difficult and he felt a good deal of pain in the lower part of the chest. The exact period of onset of the symptoms could not, however, be certainly determined. At about noon he left his work and went home, whence his friends took him to the hospital.

*Necropsy.*—At the necropsy, which was performed by me 40 hours after death, the body was found to be that of a muscular middle-aged man. Post-mortem lividity was extensive and the features were almost obliterated from emphysema which extended from the eyelids to the mammary level. A brownish frothy fluid flowed from the mouth and nose. Post-mortem rigidity was well marked in the legs and elbow-joints, but was absent from the shoulders. On removing the sternum the cellular tissue of the anterior mediastinum was seen to be emphysematous. The left pleural cavity was partly obliterated by adhesions in front and behind it was filled with brown pultaceous fluid in which were bubbles of gas. The left lung was collapsed so far as the adherent pleura would allow and was almost solid with œdema. On removing the lung and sponging out the pleural cavity a slit-like aperture was seen at its lower and back part leading into the œsophagus. The right pleural cavity, almost obliterated by adhesions, contained a little brownish fluid, whilst the lung was covered behind with a layer of discoloured fibrinous exudate which felt greasy. It was intensely œdematous and almost airless. The pericardium contained four ounces of pink serum in which gas-bubbles appeared when the heart was raised up. These were seen detaching themselves from the point of entrance of the pulmonary vessels into the pericardium. The size and weight of the heart were normal, but it was very flabby; there were atheroma of the commencement of the aorta and some

[1] A paper read before the Pathological Section of the Royal Academy of Medicine in Ireland on May 4th, 1900.

fatty degeneration of the left ventricle was noticed. On removal of the heart and the lungs the whole contents of the mediastinum from the root of the neck to the diaphragm were seen coated with brown pultaceous material mingled with bubbles of gas. The matter was seen issuing from a slit-like aperture nearly 1·5 centimetres long in the anterior surface of the œsophagus immediately above the diaphragm. The opening was quite clean cut, with sharp edges from which a few small blood-clots projected—evidently thrombosed veins. The opening extended down quite to the level of the diaphragm and from its lower end a linear tear in the mucous membrane ran some distance into the cardia. There was no trace of ulceration and the wall of the gullet was fully as thick as normal. The wall of the gullet on each side of the rupture felt somewhat softened, but there was no discolouration of the mucous membrane. The mucosa of the stomach was, however, distinctly discoloured—blackened—with hæmorrhagic erosions at the cardiac end, and was streaked with dark lines corresponding to the veins. It was decidedly softer than normal, but could not be said to have been digested. It contained a good deal of brownish fluid identical with that found in the pleural cavities and mediastinum. The abdominal organs seemed healthy, except the liver, which was enlarged and fatty, but, contrary to expectation, not in the least cirrhotic. The omentum was much infiltrated with fat and the pelvis contained a few ounces of serum.

*Morbid histology.*—The specimen was dissected out and placed in 20 per cent. solution of formalin. The removal from the side of the rent of pieces of tissue comprising the entire thickness of the gullet wall could of course not be practised without materially injuring the macroscopic appearance of the specimen. This drawback was, however, the more readily put up with, because, so far as could be ascertained, no detailed microscopic examination of such a case had ever been published. Three pieces of tissue were therefore removed from different levels at one side of the laceration, comprising the edge of the actual rent and imbedded in paraffin, whilst a much larger piece, comprising a nearly complete transverse slice of the œsophagus, was taken from a point below the lower end of the rupture, so as to include the above-mentioned tear in the mucous membrane, and imbedded in celloidin. This gave the best results as the formalin fixation proved a little too "light" for the best class of paraffin work. 1. The *epithelium* at the level of the rupture was well preserved except on the top of the folds that projected into the lumen. In the crypt-like spaces between the folds it was particularly well preserved and the prickle-junctions of the cells were quite distinct; about 0·1 millimetre from the edge of the rupture it ceased quite suddenly. The tear above mentioned as prolonging the rupture proper down into the stomach was found to be in reality a deep groove between two projecting folds of mucous membrane. The sides of this fold were partly stripped of epithelium, and its floor was broken through so as to lead into a minute cavity in the sub-mucosa crammed with leucocytes and containing clusters of cocci. On the surface of the epithelium there were but few micro-organisms. 2. The *sub-epithelial tissue* near the rupture and below it was much damaged and had to some extent lost its staining power. It consisted for the most part of unstriped muscle in a markedly dissociated state, with a few compound racemose glands, and numerous veins which were strikingly large and for the most part collapsed and empty. Here and there, however, one was seen to contain an organised thrombus containing round mononuclear elements and fibroblasts. There was also diffuse leucocytic infiltration. 3. The muscular coats, longitudinal and circular, were quite thick and well developed. The individual bundles were somewhat loosely compacted, as though they had undergone partial dissociation. Towards the edge of the rupture their outlines became less distinct and faded away amidst masses of multifarious micro-organisms. In both the muscular layers were sinuous tracks crammed with polynuclear elements amongst which spherical and elongated masses of cocci were readily demonstrated in preparations stained by Gram's method (Czaplewski's modification), after previous treatment with lithiocarmine and differentiation in acidulated alcohol. In the bundles of circular muscle, which were of course divided longitudinally on the transverse section of the gullet, patches free from nuclei and presenting a hyaline-degenerate appearance, were here and there detected. 4. The outer fibrous coat contained adipose tissue in small amount, whilst a few nerve-fibres and an occasional ganglionic cell were seen. Its outer surface where it had been in contact with the extravasated gastric contents was quite necrotic and swarmed with various bacterial forms. The nuclei had lost their staining power. The inner part adjacent to the longitudinal muscle coat was in a state of intense leucocytic infiltration and contained numerous colonies of cocci. Other forms of bacteria were not seen. Here were also many large veins, most of them quite solidly thrombosed, the process being of recent date, as was evidenced by the outline of the red discs being still visible. Organisation was, however, in progress, as was evidenced by the presence of mononuclear elements and fibroblasts. Immediately outside these veins were numerous polynuclear leucocytes and cocci. The general impression produced by a study of these sections was that whilst the outside of the gullet and the sides of the rupture were gangrenous and swarmed with the multifarious organisms derived from the gastric contents with which they had been in contact, the deeper parts of the gullet wall were in a state of purulent inflammation owing to their invasion by pus-cocci. There was also a thrombo-phlebitis of the œsophageal veins which, however, could not have been septic in the first instance. Had it been so organisation would hardly have occurred. I cannot look upon either the thrombo-phlebitis or the purulent infiltration as having developed during the few hours that elapsed between the occurrence of rupture and the termination of life. The loss of epithelium and of staining-power and the dissociation of the submucous structures may be interpreted as evidence of a process of intra-vital digestion. Considering, however, the fact that 40 hours elapsed before the necropsy was made, it would not perhaps be justifiable to attribute these changes to other than post-mortem alteration.

## PREVIOUS RECORDS.

In searching the records it is important to exclude cases in which the œsophagus has been perforated—(*a*) from within by foreign bodies, such as bones, false teeth, &c., or by bougies, probangs, and the like introduced for diagnostic or therapeutic purposes, or by ulceration,[2] malignant or otherwise; and (*b*) from without, by the erosion of aneurysms, adherent masses of caseous glands, tumours, and the like. The possibility of the occurrence of post-mortem digestion and of agonal œsophago-malacia has also to be borne in mind, and the appearances so produced carefully distinguished from the results of sudden rupture taking place *intra vitam*. Failure to appreciate this distinction is responsible for several erroneous records.[3] Eliminating these faulty observations, there remain 17 indubitable and more or less carefully observed cases of rupture of an apparently healthy gullet. In the appended table I have endeavoured to bring out the salient features of these 17 cases, so far as I have been able to collate them.

The first of these observations, and in some respects the most interesting, was made by the illustrious Boerhaave, who published a full account of it in Latin. His patient was the celebrated Dutch Admiral Baron Wassenaer, and the following is an abstract of Boerhaave's description, which from its fulness and scientific minuteness may well be looked upon as classical. (Case 1 in table.) The baron, a man about 50 years of age, moved in the best society of Holland, and was a diner-out and a large eater, though not a heavy drinker. After meals he used to feel a disagreeable sensation in the cardiac region of the stomach and obtained relief by the use of emetics. On the day of his attack, being in the best of health, the baron partook at his early dinner of the following substantial repast: Veal soup with herbs, boiled lamb with cabbage, fried sweetbread and spinach, a duck, two larks, and a compôte of apples. For dessert he had pears and grapes, followed by sweetmeats. His beverages were beer and moselle. Afterwards he went out riding and on his return, feeling uncomfortable in the epigastrium, he took three cups of hot *thistle tea* to induce vomiting; but with poor success. He then drank four cups more of the same decoction, and whilst straining violently in his efforts to vomit he was suddenly seized with a terrible pain and shrieked aloud so that his servants rushed to his assistance. He exclaimed that something had given way in his stomach and

[2] In excluding cases of ulcer it is important to remember that the mere solution of continuity due to rupture is liable to be described as an "ulcer." Compare the case of Lindemann and that of Lindsay and Lorrain-Smith.

[3] Kade: De Morbis Ventriculi, Halæ, 1798, p. 16. Guersent: Bulletin de la Faculté de Médecine de Paris, 1812, tome i., p. 73. Bouillaud: Archives Générales de Médecine, 1823, tome i., p. 531.

TABLE OF 17 CASES OF RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS.

| No. of case. | Sex and age. | Alcoholic. | Previous history. | Onset. | Symptoms. | Emphysema. | Duration of life in hours. | Shape and position of rupture. | Results as determined by necropsy. | Authority and date. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Male, over 50. | ? | Gouty; heavy eater; accustomed to use emetics. | Sudden, whilst retching. | Felt something give way; intense pain; collapse; typical situs; dyspnœa. | Yes. | 18 | Complete transverse rent three fingers' breadth above the diaphragm. | Collapse of the lungs; air and gastric contents (104 oz.) in both pleural cavities. | Boerhaave,[1] 1724. |
| 2 | Male, ? age. | Yes. | "Debauch" the previous night. | Sudden, after drinking hot water to induce vomiting. | Felt something give way; slight hæmatemesis; severe pain; dyspnœa; collapse. | " | About 12 | Longitudinal slit just above the diaphragm big enough to admit two fingers. | Double pneumothorax; gastric contents in both pleural cavities. | Dryden,[2] 1787. |
| 3 | Male, 24. | " | Severe epigastric pain and vomiting for several months. | Sudden, after public dinner, during vomiting. | Slight vomiting; severe epigastric pain; typical situs. | " | 14 | Large rent just above the diaphragm. | "Portions of food in the lower part of the chest." | Wilkinson King,[3] 1843. |
| 4 | Male, 38. | " | "Took lye when a child and since then food has stuck near pit of stomach." | Sudden, after attempting to swallow a sausage which became impacted and caused straining. | After striving to vomit, some bæmatemesis; pain; oppression; dyspnœa; typical situs. | " | 50 | Gaping rent one and a quarter inches long by three-eighths of an inch wide three inches above the cardia; edges sharply defined. | Gangrenous cavity in the posterior mediastinum; "exudation" in both pleural cavities. | Meyer,[4] 1858. |
| 5 | Male, 35. | " | Gastric disturbance six weeks previously when a bone was thought to have been swallowed. | Sudden, after carouse. | Vomiting at first, then pain; dyspnœa; collapse; typical situs. | " | 11½ | Longitudinal tear five centimetres long, encroaching on the stomach. | Double pneumothorax; six to eight ounces of reddish fluid containing solids and fat in each pleural cavity; gangrenous cavity in the mediastinum. | Gramatzki,[5] 1867. |
| 6 | Male, 49. | ? Probably. | — | Sudden, after meal of ducks, green peas, and plum-pudding. | Felt something give way during vomiting; pain; dyspnœa; collapse; died asphyxiated. | " | 16 | Longitudinal slit one inch long just above the diaphragm. | Three quarts of fluid containing food in the left pleural cavity; lung collapsed. | Griffin,[6] 1869. |
| 7 | Male, 35. | Yes. | Drinking hard for several days before onset; from infancy had some dysphagia. | Sudden, after vomiting and whilst exercising a horse. | Felt something give way; pain; dyspnœa; intense thirst; collapse. | Not stated. | 7½ | Slit one and a half inches long in the left side of the lowest part of the gullet, extending further in the mucous than in the other coats; edges well defined above; irregular and softened below. | Gangrenous cavity in the posterior mediastinum opening into the left pleural cavity, which contained two quarts of fluid containing starch and oil; lung collapsed. | Charles,[7] 1870. |
| 8 | Male, 31. | " | Repeated attacks of gastritis; delirium tremens; hæmatemesis. | Sudden, during violent efforts to dislodge a piece of meat impacted in œsophagus. | Pain and dyspnœa, not very prominent at first; fever. | Yes. | 180 | Rent two inches long at the level of the bifurcation of the trachea. | Cavity in the right side of the posterior mediastinum crossed by fibrous bands and filled with clot; overlying pleura adherent. | Fitz,[8] 1877. |
| 9 | Male, 17. | No. | Attack of blood-poisoning a short time previously. | Sudden, during vomiting. | Hæmatemesis; intense feeling of suffocation; pain; collapse. | Stated to have been present before date of rupture; but? | 4 | Rent 1·5 centimetres long at one inch above the cardia. | Opened into the left pleural cavity, which contained gastric contents. | Taendler,[9] 1878. |
| 10 | Male, 53. | " | Dyspeptic for many years with occasional vomiting. | Sudden, after feeling unwell for two hours after dinner. | Severe pain in the left side and shoulder; collapse. | Not stated. | 7 | In posterior wall of the gullet one and a half inches long just above the diaphragm; through the mucous and submucous coats only above. | — | Adams,[10] 1878. |

TABLE OF 17 CASES OF RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS—(*Continued*).

| No. of case. | Sex and age. | Alcoholic. | Previous history. | Onset. | Symptoms. | Emphysema. | Duration of life in hours. | Shape and position of rupture. | Results as determined by necropsy. | Authority and date. |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | Male, 48. | ? | Chronic gastric ulcer. | Sudden. | Vomiting, followed by pain and collapse. | No. | 15 | "Ulcer" two centimetres long by one centimetre wide in the posterior wall of the gullet two centimetres above the cardia and a little to the right; edges thickened, somewhat funnel-shaped. | Double pneumothorax; food in both pleural cavities; infiltration of the posterior mediastinum with gastric contents. | Lindemann,[11] 1887. |
| 12 | Male, 32. | No. | "Good eater; drank little." | Sudden attack of nausea causing the patient to tickle the fauces with his finger; during retching agonising pain and sensation of something having given way. | Pain; collapse; cyanosis. | Yes. | "A few." | Clean tear one centimetre long just above the cardia. | Left pleural cavity full of gas and food. | Wolff,[12] 1894. |
| 13 | Male, 47. | No. | Vomiting; dyspeptic. | Sudden, whilst vomiting. | Pain; collapse; dyspnœa; voice higher pitched than usual; disappearance of cardiac dulness. | Yes. | 13½ | Sharply defined rent one and a half inches long immediately above the cardia. | Left pneumothorax; in each pleural cavity was a pint of grumous fluid like gastric contents. | Harrison,[13] 1893. |
| 14 | Male, 59. | Yes. | Drinking hard for a week previously to admission. | Sudden. | Pain; dyspnœa; effusion into the left pleural cavity. | Yes. | 37 | Sharply defined "ulcer" one and a half inches long two inches above the cardia, involving the mucous membrane only below. | Accumulation in the posterior mediastinum, bursting into the lung but not communicating with the pleural cavity; gas in the mediastinum; acute pleurisy on both sides. | Lindsay and Lorrain Smith,[14] 1899. |
| 15 | Male, 43. | ? | "Quite healthy." | Sudden; illness and vomiting after eating. | Collapse. | ? | 6 | Rent two centimetres long in the gullet six centimetres above the cardia. | Food in the left pleural cavity. | Heintze,[15] 1900. |
| 16 | Female, 62. | No. | ? | Sudden, after vomiting induced by salt and water. | Intense epigastric pain aggravated by swallowing; dyspnœa; collapse. | Yes. | 22½ | Rent five-eighths of an inch long one and a half inches above the diaphragm. | Lower part of the gullet was much softened; brownish fluid in the posterior mediastinum and the left pleural cavity; collapse of the left lung. | Bowles and Turner,[16] 1900. |
| 17 | Male, 40. | Yes. | "Drunk every night for 20 years," much addicted to retching. | Sudden, probably during retching. | Pain not the most prominent symptom; intense dyspnœa; cyanosis; collapse. | Yes. | About 10 | Slit-like rent 1·5 centimetres long in the anterior surface of the gullet just above the diaphragm, prolonged into the stomach by a fissure in the mucosa. | Contents of the stomach in the posterior mediastinum and the left pleural cavity; collapse of the left lung; acute pleurisy of the back of the right lung; gas in the mediastinum and the pericardium. | McWeeney, 1900. |

[1] **Atrocis nec descripti prius Morbi Historia secundum medicæ Artis Leges Conscripta, Lugd. Batav.**, 1724.

[2] **Medical Commentaries**, Edinburgh, 1788, Dec. ii., vol. iii., p. 308.

[3] **Guy's Hospital Reports**, 1843, second series, vol. i., p. 113.

[4] **Medicinische Vereinszeitung** in Preussen, 1858, No. 39, No. 40, and No. 41.

[5] **Ueber die Rupturen** der Speiseröhre, Inaugural Dissertation, Königsberg, 1867.

[6] **THE LANCET**, Sept. 4th, 1869, p. 337.

[7] **Dublin Quarterly Journal of Medical Science**, 1870, vol. i., p. 311 gives literature).

[8] **American Journal of the Medical Sciences**, 1877, p. 17 (gives literature).

[9] Deutsche Zeitschrift für praktische Medicin, 1878, No. 52.

[10] **Transactions of the Pathological Society of London**, vol. xxix., p. 113.

[11] Münchener Medicinische Wochenschrift, 1887, No. 26.

[12] **Medical News**, 1894, No. 19.

[13] **THE LANCET**, April 8th, 1894, p. 784.

[14] **Lindsay**: Transactions of the Royal Academy of Medicine in Ireland, 1899, vol. xvii., p. 53.

[15] Freie Vereinigung der Chirurgen Berlins, Sitzung vom 12 Feb., 1900, abstracted in the Medicinische Woche, 1900, No. 7, p. 63.

[16] **Brit. Med. Jour.**, 1900, vol. i., p. 763.

that he felt sure he must die at once. In a cold perspiration and ghastly pale he was taken to bed and the nearest medical man was sent for who resorted to friction with warm cloths, administration of mucilaginous drinks, olive oil, and poultices. There was no more vomiting and everything taken was retained. Boerhaave, who then came on the scene, found the patient complaining only of an intense pain in the epigastrium much increased by eructation and by movements of the spinal column. He was sitting up in bed with his body bent forward almost doubled in two. There was no nausea, no difficulty in swallowing, no hiccough, and no abdominal tenderness. The patient's mind was quite clear, and he assured Boerhaave that some change must have taken place in the position of parts within the chest. Diagnosis was impossible, and the measures resorted to—hot fomentations, venesection, &c. — were unavailing to give the slightest relief. Very little urine was passed despite the large amount of fluids swallowed. After a night of the most intense agony, dyspnœa began to come on; the pulse began to fail about 3 o'clock in the following afternoon, and death supervened at 5 o'clock. 24 hours afterwards Boerhaave made the necropsy. He found extensive subcutaneous emphysema, the heart normal, and both lungs collapsed. The pleural cavities contained 104 ounces of fluid, consisting for the most part of what had been taken by the patient during the last hours of life. The material smelt of roast duck. On the pleura covering the œsophagus was a flabby blackish spot about three inches in diameter in the centre of which was a rent one and a half inches long by about a third of an inch wide, from which fluid similar to that in the pleural cavities could be squeezed, and which communicated with the lumen of the gullet. This was found to have been ruptured and the two ends retracted in opposite directions. The most careful examination failed to reveal the existence of any ulcerative or other morbid process in the coats of the gullet which appeared quite healthy, The stomach and intestines were distended with gas but otherwise normal.

This case recorded by Boerhaave is unique in presenting a complete transverse division of the gullet. Its rapid course and severe symptoms are in harmony with what is usually observed. Fitz's case (Case 8 in the table), on the other hand, lasted no less than seven and a half days, and as the observation has been very carefully and fully recorded by its author, who was at that time assistant professor of pathology at Harvard, it may properly be abstracted in this place. The patient, a merchant, aged 31 years, was in a debilitated condition from over-indulgence in alcohol, and suffered from gastritis and hæmatemesis. For years he was in the habit of cutting his food into small pieces, and he ate slowly, but never complained of pain or difficulty in swallowing. Whilst at supper a morsel of food lodged in his gullet, and it was only after an hour of great discomfort that he succeeded in ejecting the substance, which proved to be a piece of gristly meat nearly circular in shape, about an inch in length and rather more than half an inch in diameter. It came from his mouth with noise and force as if propelled from a popgun; he sank back exhausted and ejected a moderate quantity of clotted and liquid blood. A swelling was then noticed at the angle of the lower jaw on each side (emphysema). In the subsequent progress of the case but little pain was complained of till the sixth day, when it became sharp and excruciating and was accompanied by tonic spasms of the flexor muscles of the limbs. Swallowing and vomiting could both be quite well performed. Respiration was likewise not interfered with until the last day of life. Emphysema was extremely pronounced; the whole subcutaneous tissue of the body appeared to be undergoing a process of inflation. The face, the eyelids, the upper part of the chest in front, and the entire back were swollen; the scrotum was enormously distended and the inflation extended to the middle of the thighs. At the necropsy Dr. Fitz found the anterior mediastinum to be emphysematous, independently of the conditions produced on removal of the sternum. The left pleural cavity was obliterated by old adhesions which were emphysematous and the costal pleura contained numerous bullæ distended with air. The lungs were œdematous and the lower lobes were moderately collapsed. In front and to the right, at and below the bifurcation of the trachea was found a longitudinal rupture of the œsophagus two inches in length extending through all its coats. Its edges were sharply defined and gave no evidence microscopically or otherwise of a pre-existing ulcerative or degenerative process. A communication was thus established between the œsophagus and mediastinum in all directions and behind the former to a limited extent. This cavity was of the volume of a small lemon, was crossed by fibrous trabeculæ, and was filled with clotted blood. Its walls, neither soft nor pulpy, were of greenish hue, and the thickened and reddened left pneumogastric nerve could be seen projecting behind. The tissues of the posterior mediastinum on the left side were spongy and stained with blood. The pleura covering the cavity mentioned on the right side was adherent to the opposed upper lobe of the lung, the adhesions being recent, discoloured, and offensive. The inner surface of the œsophagus, from the bifurcation of the trachea to the cardiac orifice of the stomach, was of a greenish colour. Its epithelium was slightly flocculent, occasionally thickened in patches, and was entirely absent over a space an inch in diameter below the rent, the exposed surface being smooth and shining; its walls were of normal consistence. The appearances presented by the stomach were those of chronic gastritis and there was no indication of post-mortem softening.

To the cases of undoubted rupture of the œsophagus (17 in number) which have been sufficiently recorded for inclusion in the table, there must be added, as almost certainly belonging to this category yet not recounted in sufficient detail for tabulation, the cases of Williams[4] (1848), Oppolzer[5] (1851), Bailey[6] (1873), and Heyfelder.[7] A case recorded as rupture of the œsophagus by Colegrove,[8] the account of which is not accessible to me, seems to have escaped the notice of Fitz, who, writing in America, might have been expected to have come across it in his review of the literature.

The subject has been discussed and the literature up to date collected by my friend and colleague on the examining board of the Royal University, Professor Charles of Queen's College, Cork, in 1870. This was in connexion with a study of the case that came under his own notice. In 1877 Fitz published the case above abstracted, which was under the care of Dr. Adams of Baltimore. Fitz also took occasion to collect the literature up to date and discussed it very ably, though I cannot agree with him in his exclusion of several records which appear to me to be genuine cases of intra-vital rupture, such as those of Boerhaave (Case 1 in table), Dryden (Case 2), King (Case 3), and Charles (Case 7). Dr. John Knott of Dublin has also treated of the subject in a very admirable way in an "Essay on the Pathology of the Œsophagus," which gained the gold medal of the Dublin Pathological Society at the close of the session of 1877. There is, further, a full notice of the accident and a discussion of its distinction from agonal and post-mortem œsophago-malacia in Zenker and von Ziemssen's "Cyclopædia of Medicine."[9] Finally, Sir Morell Mackenzie has dealt with the subject in his work on "Diseases of the Nose and Throat," and extended our knowledge by a series of experiments the outcome of which I shall return to later.

A number of cases described or quoted as examples of this condition prove on examination to be examples of agonal or post-mortem œsophago-malacia. Details of such up to 1877 will be found in the work of Fitz and that of Zenker and von Ziemssen, and references to some of these have already been given here. In collating the records I have considered it necessary to eliminate two cases published by Stanley Boyd.[10] One was that of a child, aged four months, who had been suffering from high fever and quick pulse, with an erysipelatous rash. Difficulty in breathing came on two hours before death. There was no emphysema. At the necropsy an aperture two millimetres in diameter was found midway between the bifurcation of the trachea and the cardia. For a short distance above and below it the circular muscle fibres were exposed between two separated longitudinal bands. Except for several narrow clots about an inch long, lying in furrows between the longitudinal folds, no morbid change was detected in the

[4] Transactions of the Pathological Society of London, 1848, vol. i., p. 151.

[5] Wiener Medicinische Wochenschrift, 1851, p. 65. (The patient in this case was presumably a female who strained herself during ironing.)

[6] New York Medical Journal, May 1873. (The patient in this case was a robust negro. There was a longitudinal rent three-quarters of an inch long one inch above the cardia. He lived 24 hours. ? emphysema.)

[7] Sanitätsbericht ueber das Fürstenthum Hohenzollern-Sigmaringen, 1837. (The patient was a male drunkard. There was a very large rent of the size of a threepenny piece close to the cardia.)

[8] Buffalo Medical Journal, 1849 and 1850.

[9] English edition, 1878, p. 90, et seq.

[10] Transactions of the Pathological Society of London, vol. xxxiii., p. 123.

gullet. At the necropsy extravasation of gastric contents is not mentioned. The left pleural cavity was normal; the right contained an ounce of bloody fluid; the lungs were not collapsed. The committee (Dr. J. F. Goodhart and Mr. H. T. Butlin) to which the specimen was referred reported on it as a case of "gastric solution," and from the age of the patient, her previous illness, and the absence of emphysema and of extravasation of gastric contents, I have little doubt that the case was an example of agonal œsophago-malacia.

Boyd's second case was that of a girl, aged 18 years, who was the subject of Addison's disease and who had suffered from persistent vomiting for several months. There was no sudden pain, no pneumothorax, no emphysema, and no dyspnœa. At the necropsy there was a longitudinal rent five centimetres long in the left side of the œsophagus immediately above the cardia; part of the overlying pleura had disappeared, and "this must have been due to digestion." The stomach showed some deep circular erosions and black lines marking the course of the vessels. The same committee reported on this specimen also and found that "the mucous membrane at the level of the opening was dark and thickened as if from pre-existing disease, but the slit-like character of the opening and an uneven furrow between the longitudinal rugæ parallel to it are suggestive of gastric solution. But it seems probable that the œsophagus had been weakened by pre-existing disease and gastric solution, or both together, and had given way during the last few hours of life, and we think the specimen may serve to call attention to the occurrence of gastric solution during the enfeeblement immediately preceding death—an occurrence which is probably not very uncommon, which has never yet been adequately described, and which has produced within our knowledge most puzzling appearances." These reports manifestly place the cases in question outside the category of spontaneous rupture of the apparently healthy œsophagus. On the other hand one meets with cases described under the name of ulcer which undoubtedly belong to the category now under notice. Lindemann's (Case 11 in table) is one of these, and the case reported by Professor J. A. Lindsay and Professor Lorrain Smith (Case 14) is another. To the courtesy of Dr. Lorrain Smith I am indebted for an opportunity of examining the specimen, which is preserved in the pathological collection at the Queen's College, Belfast, and have been able to convince myself that it is of a similar nature to my own. A solution of continuity in the wall of any tubular viscus is by many pathologists termed an "ulcer," especially when gaping of the sides of the rent suggests loss of substance.

### GENERAL FEATURES OF THE CASES.

*Sex.*—Of the 17 cases 16 were those of men: one of the non-tabulated cases (Oppolzer's) was that of a woman.

*Age.*—The subjects were mostly men in the prime of life, the average age of those of whom it is recorded being 42 years.

*Alcoholism.*—This seems to be a pre-disposing cause, and in eight of the 17 cases there is a distinct history of excessive drinking.

*Vomiting.*—In eight of the cases this was of frequent occurrence, whether the result of excessive eating or drinking or induced by emetics. It is, however, as an exciting cause that vomiting is especially prominent in connexion with rupture of the œsophagus, for in every one of the cases tabulated the accident seems to have occurred either during vomiting or whilst the patient was straining to accomplish the act (retching).

*Symptoms.*—In a number of the cases there was a distinct feeling that something had given way within, and in all there was pain, usually of the most agonising character, speedily followed by collapse and nearly always associated with dyspnœa. The position adopted by the sufferer was characteristic—sitting up with the trunk stooped forward as much as possible. The pain was usually aggravated by swallowing and sometimes by eructation. The most striking of all the symptoms and one of the most constant is emphysema. It appears first in the neck spreading up to the face, causing more or less obliteration of the features, and downwards over the trunk, reaching to the scrotum and thighs. The symptom was present in 12 of the cases and probably in several of the others, but the records of some of these are imperfect [Adams (Case 10 in table), Taendler (Case 9), and Heintze (Case 15.] These characters make up an extremely well-marked and very unusual clinical picture, which, once seen, is indelibly imprinted on the recollection.

*Duration of life.*—Fitz's case (Case 8 in table) survived by far the longest—seven and a half days. The other 15 cases in which the duration is stated lasted on an average only 17 hours.

*Position and shape of rupture.*—In all the cases save that of Fitz, the opening was immediately above the diaphragm, and was often prolonged upwards or downwards by a sort of fissure in the mucous membrane. This feature was especially well marked in my case. Save in the case of Boerhaave (Case 1 in table) the shape of the rupture was a longitudinal slit opening usually into the left pleural cavity, sometimes into both, occasionally (Lindsay and Lorrain Smith, Case 14 in table) into neither.

*Etiology.*—Charles in his very able paper[11] considers that "the rupture followed softening which may have resulted from chronic inflammation of the stomach and lower third of the œsophagus. The continued ingestion of alcohol probably induced a chronic gastritis or gastro-enteritis, the inflammation involving also the lower third of the œsophagus. Softening of the mucous membrane occurred as a consequence. ..... Immediately preceding or accompanying the vomiting there may have been temporary spasm of this tube resembling the 'hour-glass' contraction of the uterus, and under these circumstances the contents would be impelled against its parietes close to the cardiac orifice." This view is practically identical with that subsequently adopted by Zenker and von Ziemssen. Fitz[12] considers that "two factors are essential—the impaction of a foreign body in the œsophagus and the exercise of great muscular force in the attempts to remove it." This opinion is manifestly incorrect, inasmuch as the factors in question were present only in two of the cases—that of Meyer (Case 4 in table) and his own.

A much better grounded opinion is that of Zenker and von Ziemssen[13] who look upon rupture as the consequence of a digestive softening of the œsophagus occurring *intra vitam* in persons who are quite well otherwise. They lay down the following conditions as pre-requisite for the production of the softening: (1) regurgitation of stomach contents rich in pepsin and acid; (2) protracted retention of regurgitated food in the œsophagus; and (3) cessation or great weakness of the circulation. The first of these conditions occurs when the stomach is over-distended, or in association with attempts at vomiting. The protracted retention would be realised if there were diminished muscular energy in the œsophagus such as might readily be occasioned by the exhaustion due to continuous and violent vomiting. The local circulatory disturbance is harder to account for. Zenker and von Ziemssen think that the œsophagus, on account of its much less abundant blood-supply, is proportionally less protected against the gastric juice than the stomach, and, as regards the nature of the disturbance the authors reject infarction and embolism, curiously enough omitting to mention thrombosis, which, in view of the frequency of varicose veins in the lower part of the gullet, seems the most probable cause. They speak of a "spastic ischæmia" and conclude as follows: "And hence, accepting Andral's witty remark that in consequence of varied emotions the stomach, quite as well as the skin, may now turn pale and now be suffused, we shall certainly ask whether the striking pallor of the face and lips during vomiting does not extend to the stomach and œsophagus. This ischæmia may not ordinarily extend to a degree where the tissues would be exposed to the action of the gastric juice, but an unwonted increase in the same would open the door for a catastrophe. After all we have said we hold that the view is well founded that all cases of spontaneous rupture of the œsophagus may be referred to an intra-vital œsophago-malacia."

Mackenzie considers that the immediate cause of rupture is vomiting, and that "vomiting only causes rupture when the contents of the stomach cannot be expelled through the gullet at the same rate that they leave the viscus. ..... It is probable that some temporary obstruction near the upper end of the gullet preventing the flow of fluid matters from the stomach is the essential feature in rupture." He then points out that "to determine the cause of this obstruction is not always possible. In two cases, as already remarked, a foreign body was impacted in the œsophagus, but these were

[11] Loc. cit. [12] Loc. cit. p. 34.
[13] Loc. cit., vol. viii., p. 106.

exceptions. In all the others the obstruction, if present, must have been due to something inherent in the tube itself. This is probably to be found in strong contraction of the circular fibres of the gullet at the upper part of the œsophagus. In two cases—those of Fitz (Case 8 in table), and of Wilkinson King (Case 3)—there was tetanic spasm, affecting in the one the flexors of the limbs and in the other the abdominal muscles; and it need hardly be pointed out that if such a condition existed at the same time in the muscular walls of the gullet rupture would be likely to take place." In writing the above Mackenzie must have forgotten that the cramp did not come on till long after the occurrence of the rupture—on the seventh day of the illness in Fitz's case, and after the onset of pain and dyspnœa in that of Wilkinson King. Mackenzie endeavoured to found his view on a basis of experiment by testing a number of normal gullets removed post mortem in order to find out at what point and in what manner they underwent rupture when overstrained by excessive pressure from within. He concluded (1) that rupture by direct pressure applied within the œsophagus always takes place in a longitudinal direction; (2) that the rent never occurs in the upper part of the tube and in most cases is confined to the lower third; and (3) that the mucous membrane offers greater resistance to strain than the muscular covering.

Before dismissing from our attention the valuable work of Mackenzie on this subject, it is only right to say that, in rejecting the auto-digestion theory of Zenker and von Ziemssen, he has quite failed to grasp the exact nature of their position. He quotes them as considering that the accident results chiefly from "intra-mortem œsophageal malacia," or softening of the coats from peptic solution in the last hours of life. But the German authors distinctly lay down[14] "that œsophago-malacia may be developed in rare cases *intra vitam* in a patient who is perfectly well, without any connexion with any preceding serious disease, and form the basis of the so-called spontaneous rupture of the œsophagus."

That intra-vital digestion is not the sole cause is clearly proved by the uniformly longitudinal form of the aperture and its sharply-defined edges—characters which are just the opposite of those met with in gastro-malacia. That pressure from within cannot be the sole cause is, I think, evident from the exceeding rarity of the accident despite the frequency with which the œsophagus is distended by relatively enormous foreign bodies.

The conclusion to which I have arrived as the result of a careful study of existing data is, that the two main factors that are operative in causing rupture of the macroscopically normal gullet are (*a*) softening of the coats and (*b*) sudden increase of pressure from within. The softening is due partly to intra-vital digestion, and partly (at least in the case which I observed) to inflammatory infiltration. The intra-vital digestion is to be accounted for by (*a*) circulatory disturbance, which in my case took the form of venous thrombosis, and (*b*) prolonged sojourn of peptic matters in the gullet from prolonged retching. The increased pressure from within is doubtless ascribable to the violent propulsion of the gastric contents into the lower part of the gullet whilst its upper outlet is obstructed by the contracted state of the muscle—in other words to want of coördination of the muscular action of the tube, probably due to exhaustion from prolonged over-activity. Whether a localised phlegmonous œsophagitis—for that is the condition which existed in the case now recorded—is a constant factor in these cases, it is of course impossible to assert in the absence of microscopical details of the other cases. I believe I may lay claim to be the first to establish the existence of this condition as a possible cause of rupture of the apparently healthy gullet.

Dublin.

[14] Loc. cit., p. 105.

BATH MINERAL WATER HOSPITAL.—At the meeting of the committee of this institution held last week it was decided to make alterations and improvements in the hospital at a cost of upwards of £5000. Our commissioner's strictures seem to have had a good effect.

THE Professor of Physiology in Tübingen, Dr. Willy Kühne, who died last month, left directions that his body was to be cremated and that during the process the first movement of Beethoven's Ninth Symphony was to be performed; also that no memorial festival should be held.

# A CASE OF PERNICIOUS ANÆMIA FOLLOWING ON TRAUMATIC STRICTURE OF THE SMALL INTESTINE.

BY ARTHUR E. BARKER, F.R.C.S. ENG. & IREL.,
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*(With Pathological Report by W. Hunter, M.D.)*

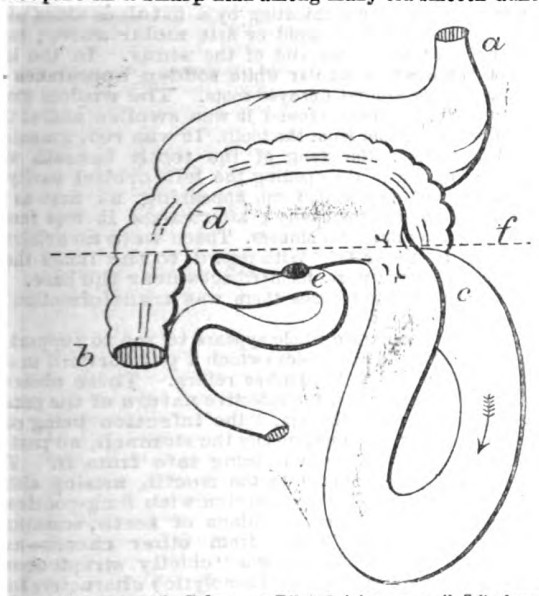
A CAREFUL perusal of Dr. William Hunter's most suggestive essays on pernicious anæmia has convinced me that the following case ought to be put on record. I do not feel competent to pronounce on the general questions which this writer so ably raises, but the case appears to me to lend strong support to his views as far as it goes. It has also some points of intrinsic surgical interest and especially the effect of cart-wheel accidents upon the intestine short of actual rupture. The notes and observations on the blood, &c., were accurately kept by my house surgeon, Dr. F. H. Thiele, whose abstract of them forms the basis of this record. Dr. Hunter has also kindly added a report on his study of specimens obtained at the post-mortem examination which adds great interest to the case.

A man, aged 28 years, a sawyer, was admitted into University College Hospital on Feb. 5th, 1900. He had always enjoyed good health until seven years ago when he was run over by a loaded wagon. The two near wheels, which were broad, passed over the lower part of the thorax, breaking, it is stated, five ribs and splintering another. This was followed by "pleurisy and inflammation." He was ill for 14 weeks, and after this began to have the attacks now complained of. There was no history of syphilis, rheumatic fever, or tumours, but the patient had always suffered from "heartburn," which had been worse since the accident. The patient had always been quite temperate. He had been well fed and had lived among healthy surroundings.

On admission he was noted as being very well nourished, inclining to fat, but extremely anæmic. This was most marked in the conjunctivæ, lips, and finger-nails. An examination of the abdomen revealed no abnormality of the internal organs and only a slight tenderness and increased resistance midway between the right iliac spine and the navel. Nothing unusual could be felt from or in the rectum. His reason for seeking treatment now was extreme weakness and anæmia with periodic attacks of pain and vomiting which set in soon after the accident seven years ago. These had occurred at intervals of from a week to a month and lasted from a week to a fortnight. During these attacks pain and swelling began about two inches to the right and below the umbilicus and spread from there all over the abdomen. At the same time the patient had vomiting and diarrhœa. The vomit consisted of food and green fluid which tasted bitter and sour. The motions during these attacks were much lighter in colour than usual, and sometimes very pale indeed. The pain was much relieved by change of posture in any direction. The great pallor was first noticed in the summer of 1899, and since September, 1899, the patient had suffered from shortness of breath on exertion accompanied by palpitations. During and after September, 1899, the patient was prevented from working for about 10 weeks by vomiting and diarrhœa. On admission the temperature was 99·4° F. and the pulse was 112. This was about the average for nearly a week, when the fever slightly increased to about 100° or a little over this. He then (Feb. 17th) had the first attack of pain since admission. It began at the point described and spread all over the abdomen, lasting about one and a half hours. He vomited at this time both food and bile, and had a loose stool without any undigested food or fat and not offensive. Dr. Thiele's analysis of the blood showed red corpuscles 2,000,000, white 54,000, and hæmoglobin 30 per cent. The optic discs were now examined and were found to be normal. On Feb. 16th the stomach was washed out, but showed nothing abnormal. On the 17th a hæmorrhage was noticed in the left eye above and to the outer side of the optic disc. Pain and vomiting occurred on the previous night. The vomited matter was bile-stained with very little undigested food. It contained free hydrochloric acid. Reduced iron was now

given. The diet was full and was eaten with appetite except in the morning. The patient was growing paler. On the 21st he vomited twice with but little pain. The urine had been free from albumin since admission. It was acid and of normal colour with an excess of indican. Urea 2·5 per cent. There had been no loss of flesh, but the pallor was increasing very much and severe headache had been complained of for some days. On the same day (the 21st) an examination of the blood showed red corpuscles 1,000,000, hæmoglobin 20 per cent., and white corpuscles 1 : 450. The blood itself to the naked eye was very thin and watery; megalocytes and microcytes, but no nucleated red corpuscles, were seen. Feeling now satisfied that there was some serious lesion high up in the small bowel, probably of the nature of a stricture, I decided to explore the abdomen.

Operation was performed on Feb. 22nd. The abdomen was opened in the mid-line above the umbilicus. The first thing noticed was a coil of enormously distended and thickened small intestine of white colour, which for the moment was taken to be the stomach. It was seen, however, on nearer inspection to lie below the colon, but to overlap it above. The distension terminated to the right of the spine in a sharp kink among many old smooth adhesions,




*a*, Stomach. *b*, Colon. *c*, Dilated jejunum, coil 7 ft. long. *d*, Dilated jejunum above stricture. *e*, Anastomosis between dilated and healthy jejunum. *f*, Obvious course of cart-wheel.

and below this the intestine was normal and empty. On pushing the finger into the distended coil so as to invaginate it a narrow stricture could be felt at the kinked spot. To the left the dilated coil was held down to the spine by adhesions which led me to the conclusion that I was dealing with the first part of the jejunum as it emerged from under the plica. These adhesions, too, were all smooth and evidently old. I now anastomosed the distended loop with the empty portion below the kink and stricture. This was done by a double row of silk sutures in the usual way. In making the openings in the contiguous loops the contrast between the thick-walled upper portion and the thin-walled normal viscus below was very striking. The abdomen was now closed in with silk sutures. The operation lasted 50 minutes and towards the end the condition of the patient was not very good. On this account a pint of normal saline solution was injected hypodermically during its concluding stages. After the operation there was a good deal of pain which was relieved by morphia, after which the patient fell asleep. The pulse was 116, the temperature was 102·2°, and the respiration was 38. The next morning he was not so well. The temperature was 102·8° and the pulse was 136. Death took place at 5.15 on the 24th.

The condition of things at the post-mortem examination was most instructive. The anastomosis left nothing to be desired as to water-tightness. Union was sound as tested in various ways and there was no peritonitis. The point of anastomosis lay in front of the spine nearly in the middle line. It united an enormously distended and thick-walled loop of small intestine with an empty coil lying below it. The cause of the distension was seen to be a tight stricture of the gut lying just to the right of the spinal column below the transverse colon, where the small intestine was kinked on itself as well. This kink was glued to the spinal column by many adhesions of old date. To the left of the spine the dilated coil was similarly held down by adhesions close to the termination of the duodenum. This had given the wrong impression at the operation that the distended coil was the first foot or so of the jejunum as it emerged from under the fold containing the mesenteric artery. On further examination now it was seen that the point glued by adhesions to the spine corresponded to a spot about seven feet below the commencement of the jejunum and that the whole of the left side of the abdomen was filled by a very much dilated and thick-walled coil of the latter some seven feet long. This coil was distended to about the size of an adult forearm with pale yellow fluid which was only escaping slowly through the anastomosis into the healthy bowel below (*vide* diagram). The crushing injury from the cart-wheel had also caused adhesions between the transverse colon and adjacent small intestine and had destroyed the upper end of the right kidney which was converted into a fibrous mass. The second part of the duodenum had also been damaged by the wheel. Its serous coat had been cracked in places, leaving the muscular coat exposed. These patches were glazed over and healed but stood out clearly against the normal bowel. The cracks reminded one of what is seen in cases of intussusception where the serous coat gives way, but I had never before had an opportunity of seeing such a crack healed. It was seen in this case that such a lesion could be repaired without the muscular coat adhering to any surrounding organ. The liver as tested by Dr. W. Hunter, who was present, contained a large excess of iron. On opening the distended bowel the stricture was found to be due to the contraction of an ulcer produced by the crushing of the mucous membrane where the cartwheel caught it against the spine. It was annular and the lumen was only about the size of a cedar pencil. Other healed ulcers were seen above it and some partially healed. The seven feet of bowel between the stricture and the duodenum were enormously dilated and full of pale yellow fluid like thin custard. This was taken away by Dr. Hunter for analysis. On examining the mouth and nose the ethmoidal sinuses were found to be full of pus. In all these factors the conditions were present which Dr. Hunter believes to be at the root of pernicious anæmia—suppuration connected with the mouth, a stricture of the intestine retaining the contents long enough to ensure their decomposition, and the formation of a specific poison.

The cause of death was probably the escape of the poison through the anastomosis and its rapid absorption by the previously healthy and empty intestine as indicated by high temperature and rapid pulse. One can only regret that no opportunity had been given for the performance of the same operation some months earlier before the patient had become so profoundly overcome by the disease.

### *Pathological Report.*

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I am indebted to Mr. Barker for the opportunity of seeing the case above described, which has proved to be one of especial interest in relation to the pathology of pernicious anæmia. I only saw the patient a few hours before his death when he was too ill to be thoroughly examined. Nevertheless, from the account of his illness, his appearance, the degree of oligocythæmia (far greater than any ever caused by ordinary malnutrition or wasting disease however profound), and the character of his gastro-intestinal symptoms, I regarded the case as one of pernicious anæmia. This view was fully confirmed by the result of the necropsy, and still further by the subsequent investigation, both microscopic and chemical, which, thanks to Mr. Barker's courtesy, I was enabled to make on the material obtained from the case.

*Nature of examination.*—I was afforded the opportunity of being present at the necropsy, and I append the notes which I then made. I have subsequently examined microscopically the following tissues and organs—viz., blood, spleen, lymph

glands (gastric and mesenteric), liver, kidney, tongue, gums, teeth, stomach, small intestine, and colon; also chemically the liver, spleen, and kidney for iron; and, lastly, both microscopically and chemically the stomach contents. The number of sections so far microscopically examined has been close on 200.

*Summary of results.*—1. There were characteristic pigment changes with large excess of iron in the liver and kidney and intensely deep colour of bile denoting excessive hæmolysis. 2. The ordinary blood changes of pernicious anæmia, including the presence of nucleated red corpuscles in the blood, spleen, and glands. 3. Dental decay and necrosis with pus sacs at the roots of the teeth, collection of pus in the ethmoidal sinuses, and foul granulations around a necrotic tooth. 4. Stomach: fatty infiltration, degeneration, catarrh, and desquamation of the glandular cells; presence of cocci (oxyntic cells least affected) in the perivascular lymphatics of the submucosa at certain parts. 5. Intestine: there were no post-mortem changes. There were a number of ulcers in various stages (active, healing, and healed) above the constricted portion of the gut. At other parts there was thinning of the mucosa; the cells of the glands generally were normal; at parts there was superficial inflammatory necrosis of the mucosa due to the presence of organisms, at others replacement of glands by cicatricial tissue amidst which streptococcal organisms were numerous, and at others the presence of cocci in the perivascular lymphatics of the submucosa. 6. Colon: there were no post-mortem changes. The lymphoid elements of the mucosa were well preserved and staining was normal. (*a*) There was intense degeneration and necrosis of the glandular cells, hardly a normal cell remaining. The cells represented by granular detritus were crowded with organisms, most of them cocci, only a few bacilli; (*b*) cocci, both single and in chains, were very abundant in the deeper parts of the mucosa around the base of the glands (they were absent from the superficial mucosa) and at parts they were very numerous in the lymphatics of the submucosa. Their streptococcal nature in parts was very obvious. 7. Pus of ethmoidal sinus: "Staphylococcus pyogenes aureus and bacillus coli communis, the latter being probably a post-mortem contamination" (Dr. Eyre, Bacteriologist, Charing-cross Hospital). 8. Stomach contents: chemically there was neither free hydrochloric acid nor butyric acid. Lactic acid was present. Microscopically there were numerous organisms, including mouth bacilli. All of them were decolourised by Gram's method with the exception of a streptococcus form (streptococcus longus). The contents were deeply bile-stained, resembling closely in appearance and character the contents of the jejunum. No cultures were obtainable owing to excess of formalin. 9. The percentage of iron in the liver was 0·360; in the spleen, 0·069; and in the kidney, 0·330. To show the notable increase of iron in the liver and kidney I append for purposes of comparison the results of a similar analysis recently made in a case of gastric cancer—a case which resembled pernicious anæmia in the high degree of lemon colour and in the absence of any notable emaciation. Percentage of iron in the liver, spleen, and kideny in the gastric cancer: liver, 0·022; spleen, 0·013; and kidney 0·003.

*Necropsy.*—The necropsy was performed 12 or 15 hours after death. The weather was cold. There were no post-mortem changes. The body was fairly nourished. The blood was watery. The liver weighed 4 lb. 10 oz. and was fatty; the centre of the lobules was pale and the periphery was rust-coloured. A piece of liver placed in sulphide of ammonium gave marked iron reaction (blackening). The gall-bladder was filled with extremely deep golden-yellow-coloured bile. The mucosa was normal. As to the kidney, the right weighed four and a half ounces and showed a cicatrix at the lower end, the result of an old crush. The left weighed seven ounces. It was comparatively enlarged. The spleen weighed five ounces; it was red and firm, not soft. The stomach contained 120 cubic centimetres of bile-stained contents with food. There was no cadaveric softening. The mucosa showed punctiform hæmorrhages; there was considerable increase of mucus. The duodenum and intestine contents were fluid and very deeply bile-stained. The jejunum was much dilated and the walls were considerably hypertrophied above the point of narrowing (from six to seven feet below the stomach). The mucosa above the stricture showed a number of irregular ulcers, some of them cicatricial, others partially healed, and others still showing hyperæmic edges. Elsewhere the mucosa of the intestine, colon, and rectum showed nothing obviously abnormal. In the gastric and mesenteric glands there was no trace of hæmorrhages. Microscopically there was no pigment. The heart muscle was red and hyaline; there was no tabby-cat striation. The musculi papillares of the left ventricle were hypertrophied. There were a few punctiform hæmorrhages under the epicardium. The tongue was very soft on the sides; there were no ulcers. There were compound papillæ on the back part of the dorsum in front of the epiglottis slightly red and prominent. The tonsils were red. The œsophagus was normal in appearance. With regard to the teeth the incisors and canines were small, regular, and pearly white, looking quite normal. The bicuspids and molars were very bad, represented for the most part by necrotic atrophied-looking stumps, the gums around which presented a peculiar whitish sodden appearance. In the right upper jaw the first bicuspid was represented by a black stump, very small and atrophied (10 millimetres long by five millimetres wide), with a small abscess sac of about the size of a pea at its apex. The fang at the apex was dead and necrosed. The second bicuspid and first molar were represented by black fangs, the second molar had a black carious cavity in the crown, and the third molar a dark carious cavity on the outer side of the crown. In the jaw beneath these teeth was a large abscess sac 13 millimetres in diameter communicating by a fistulous sinus with the root of the second bicuspid or first molar above; bare bone was felt at the upper end of the sinus. In the left upper jaw there was a similar white sodden appearance of gums immediately around decayed roots. The wisdom tooth alone remained; the gum around it was swollen and at the back part was detached from the tooth. It was red, granulating, and inflamed; the fang of the tooth beneath was exposed and carious. On opening the left orbital cavity a large quantity of pus welled up, appearing at first as if coming from the orbital cavity; afterwards it was found to come from the ethmoidal sinuses. There were no subdural hæmorrhages in the brain. With regard to the lungs there were subpleural, punctiform hæmorrhages near the base. In the marrow of the long bones there was transformation of yellow into red marrow.

*Remarks.*—The case as a whole appears to me to support in a striking manner the conclusions which I put forward in the recent studies to which Mr. Barker refers. These observations denoted, I concluded, the infective nature of the condition termed pernicious anæmia, "the infection being confined to the alimentary tract, chiefly the stomach, no part of that tract from mouth to anus being safe from it." The source of infection I traced to the mouth, arising either within the mouth itself "in connexion with long-continued and neglected cario-necrotic conditions of teeth, sometimes possibly from stomatitis arising from other causes—e.g., drain poisons." The infection was "chiefly streptococcal, probably deriving its special (i.e. hæmolytic) characters from being of a 'mixed' character, the infection the more readily occurring if the stomach or intestine were already from any cause the seat of disease."

The anæmia was not due to any mere disturbances of nutrition arising from the stomatitis, glossitis, or any conditions of gastritis or enteritis which might be, and often were, found, but to the destruction of blood occasioned by the special infection. The whole group of conditions in the alimentary tract "were the local lesions of an infection, chiefly cæcal, the anæmia being the result of the destructive action of the poisons absorbed into the blood." Mr. Barker's case appears to me to present points of special interest in relation to the foregoing conclusions.

1. *Nature of the anæmia.*—That the case was one of pernicious anæmia is, I consider, conclusively established by the results of chemical analysis, showing a characteristic increase in the percentage of iron in the liver (also in the kidney). Microscopically the pigment was found within the liver cells in the outer zone of the hepatic lobule, with characteristic fatty changes in the centre of the lobule. The anæmia was thus hæmolytic in its nature.

2. *Mode of development.*—The patient suffered from more or less abdominal discomfort from the time of his accident seven years before without the development of any special degree of anæmia till the previous summer—i.e., seven months—before his death. His great pallor then became noticeable and he soon after began to suffer from shortness of breath and palpitation—i.e., five months before death. The conclusion which I form, then, is that at the time of his death he was in his first year of illness from pernicious anæmia. In his case the unhealthy conditions

of some part or other of the alimentary canal which according to my studies always precede and are necessary to successful infection, were created in the intestine above the point of stricture. As shown by the character and severity of his gastro-intestinal symptoms (pain and vomiting) these unhealthy conditions had existed from the time of his accident seven years before and it is, I consider, exceedingly probable that some of the healed ulcers found post-mortem above the seat of stricture were remains of lesions resulting therefrom. With comparative suddenness there was superadded to his general abdominal discomfort the feature of intense pallor with all the symptoms—e.g., palpitation, breathlessness, diarrhœa, and vomiting, varying febrile attacks (see Mr. Barker's account of the illness in September, 1899)—which are so characteristic of pernicious anæmia, and from that time forward what troubled him most—what he sought admission into hospital for—was his extreme weakness and anæmia complicated by periodical attacks of pain and vomiting connected with his intestinal condition. This relation of events—a history of antecedent gastric or intestinal trouble extending usually over many years, more or less suddenly followed by a rapidly developing anæmia out of all proportion to the actual extent or severity of lesion existing in the stomach or intestine—I find in my experience of the disease to be the typical mode of development of pernicious anæmia. And this more or less suddenness of development, with the extraordinarily high degree of anæmia (exceeding anything ever met with even in the severest forms of wasting anæmia) are the clinical features which I have come to regard as denoting the supervention of a new factor—viz., successful infection of some part or other of the alimentary canal.

3. *Evidences of infection.*—In the present case the evidences of infection of the mucosa, to a slight extent of the stomach and to a still greater extent of the intestine and colon were undoubted—notably (1) the small areas of the superficial ulceration and necrosis with inflammatory changes in certain parts of the mucosa of the small intestine, with presence of organisms confined to these areas and to the lymphatics of the submucosa; and (2) the very striking degeneration and necrosis of the cells of the tubules in the colon associated with presence of organisms also confined to the tubules and to the subjacent lymphatics of the mucosa and submucosa.

That the invasion of the mucosa was no mere post-mortem phenomenon is, I consider, clear from the following: (*a*) In the case of the stomach only in one part microscoped was there slight superficial post-mortem change in the mucosa, and at this point no organisms at all were found. On the other hand, the organisms were found in the lymphatics of the mucosa at prolated parts where no post-mortem changes were shown. (*b*) In the case of the small intestine the cells of the tubules generally showed no change and no organisms were present in them. On the other hand, where the organisms were present they were surrounded by evidences of inflammatory reaction—viz., nuclear fragmentation and necrosis. (*c*) In the case of the colon the organisms were confined to the degenerated and necrosed cells of the glands and to the lymphatics underlying them. They were not present amidst the lymphoid tissue of the general mucosa.

4. *Nature of infection.*—As regards the nature of the organisms present and their relative importance any decision from their microscopical characters alone is naturally impossible. The contents of stomach and intestine were much alike in character and both were bile-stained, so that it is certain that the ordinary intestinal organisms (bacillus coli) were present in the stomach no less than in the intestine. In the mucosa, and especially within the lymphatics, however, the organisms present were not bacilli but cocci, and especially streptococci (Zeiss, $\frac{1}{12}$ oil immersion), and a streptococcus was also present in the stomach contents. As this organism is undoubtedly pathogenic I am disposed to attach to it the chief importance. The infection of the mucosa was chiefly coccal and streptococcal.

5. *Source of infection.*—On this point—the one to which my recent observations more especially referred—no information was forthcoming from the history of the patient. He was too ill to be questioned. He had been well fed and had lived among healthy surroundings. With regard to any dental or oral trouble his wife informed me in reply to inquiry that he had not suffered in that respect. The examination, cursory in character, which I made at the time I saw him a few hours before his death, when he was already sinking, seemed to bear out this statement, for the front teeth which he showed me on opening his mouth seemed exceptionally good and healthy, so much so that I mentally registered the case as one affording no support to the recent conclusions regarding the prevalence of decayed teeth and their importance as a possible source of pyogenic infection in pernicious anæmia.

As it turns out, I cannot but regard the case as a most remarkable one in this relation, for I found at the necropsy that the front teeth were the only good ones. The remainder were for the most part represented by black roots lying in sodden white gums. At the roots of these, in one side of the jaw alone, were two abscess sacs, the larger being of the size of a small hazel nut. Moreover, on opening the left orbital cavity pus welled out in quantity from the ethmoidal sinuses. Of this condition of mouth or nose there was not, be it noted, the slightest suspicion during life and not the slightest symptom. This was one of the points to which I drew special attention in the observations recently recorded. I considered it "all-important in all cases of commencing anæmia that special attention should be directed to the condition of the teeth ..... by removal not only of old stumps, but also of all black teeth, and of teeth showing commencing cario-necrosis ..... these precautionary measures being necessary, irrespective of any statements made by the patient as to the degree of discomfort his teeth are causing. For in no single case observed, however bad I found the teeth to be, was my attention drawn to the teeth by the patient or any complaint made of them by him. There is a stage in pyogenic conditions as in other forms of infection when local reaction—e.g., pain or inflammation—is absent or insignificant at the very time when the general septic effects are most marked."

The case just recorded bears out—if possible even more fully than I had anticipated—the correctness of these statements. Without occasioning the slightest local discomfort there existed a profoundly septic condition both of jaw and ethmoidal sinuses. How long these decayed teeth had existed I have no means of knowing. But I note with interest the statement in his history that "he had always suffered from 'heartburn' worse since the accident," a symptom denoting existence of chronic gastric catarrh. The close relationship between dental cario-necrosis and gastric catarrh is the point which I have recently had occasion to elucidate. The two conditions are precisely those most favourable to infection of the mucosa of the stomach, and ultimately, if the conditions be favourable, as in the present case, to infection of the intestine lower down. For on the one hand there is diminished resistance on the part of the stomach from the diminished acidity of gastric secretion consequent on the catarrh; while on the other hand there is increase of dose from continuous swallowing of pus organisms from the necrotic teeth. In the present case both these conditions were met. The patient had infection of the mouth, and the gastric contents contained no free hydrochloric acid.

### SUMMARY.

The relations of events in the case I would then summarise as follows:—

1. A man, temperate, well fed, and living in healthy surroundings.
2. Bad teeth causing alternately alveolar and ethmoidal suppuration without at any time occasioning local discomfort.
3. Always suffered from "heartburn" (denoting chronic gastric catarrh with diminished acidity of gastric juice).
4. Accident causing stricture of jejunum.
5. More or less severe abdominal and gastric symptoms lasting six years.
6. More or less rapid supervention of the features of pernicious anæmia nine months before death.
7. Post mortem (1) dental decay with local complications—e.g., alveolar and ethmoidal suppuration; and (2) definite infection (coccal and streptococcal) of the mucosa of the intestine and colon, with definite catarrhal, inflammatory, and necrotic changes—to a less extent of the stomach.

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THE LATE MR. J. FLINT SOUTH, F.R.C.S.—Mrs. C. Stuart Andreae and Miss Mary F. South have forwarded to the treasurer of St. Thomas's Hospital a donation of £1000 to endow, in perpetuity, the "South Bed, as a memorial of the late Mr. J. F. South, who was for some years surgeon to that institution."

# A CASE OF ULCERATIVE ENDOCARDITIS, WITH RECOVERY UNDER THE USE OF ANTI-STREPTOCOCCIC SERUM.

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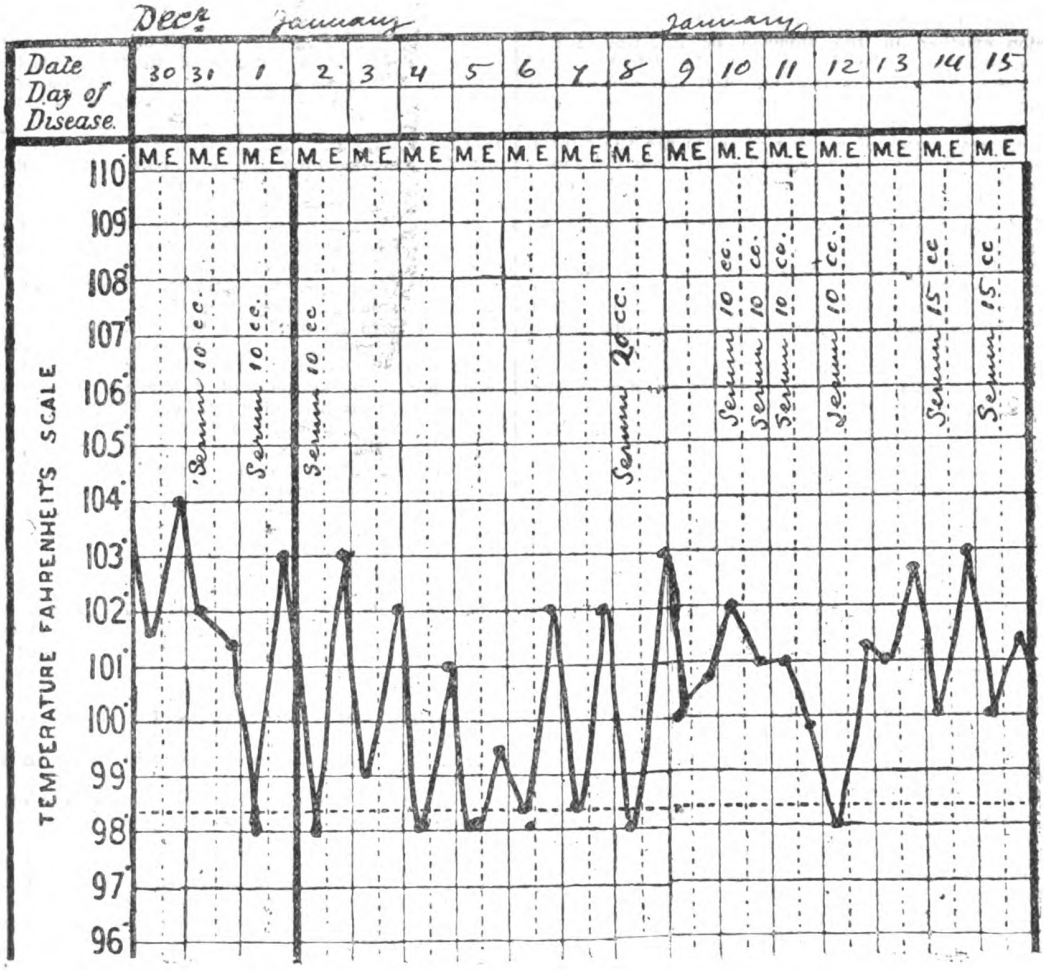
As the employment of anti-streptococcic serum in ulcerative endocarditis is still on its trial I have thought it worth while to report the following case in which it was successfully used. The patient was a single woman, 22 years of age. She had enjoyed good health until the age of 18 years, when she had what was called an attack of muscular rheumatism which laid her up in bed for six weeks. She then improved and was able to get about for two weeks, but developed pleurisy with effusion on the left side. She recovered from this and subsequently remained fairly well, but was delicate and liable to suffer from cough and from shortness of breath on exertion. She came to me on Nov. 14th, 1899, complaining of weakness, shortness of breath, pain in the præcordial region, and slight swelling of the ankles. She also said that during the previous fortnight she had felt hot in bed at night and had had two attacks of slight shivering accompanied by blueness of the lips and pallor of the face. She was tall, thin, and anæmic. The temperature was normal and the pulse was 110 and weak. The lower part of the left side of the chest was slightly contracted as a result of the attack of pleurisy. The heart's apex gave a forcible impulse in the nipple line in the left fifth space; dulness extended transversely from the nipple line to the right border of the sternum and upwards into the second left intercostal space; and a loud systolic murmur was present at the apex and right base and was audible at the angle of the left scapula. The liver was slightly enlarged. The urine contained no albumin.

The patient was kept in bed; the temperature rose two or three times in the evening to 100° or 101° F., and she appeared to be doing well, when on Dec. 6th she had a rigor and the temperature rose to 103°. On the 7th a small patch of broncho-pneumonia developed just below the angle of the right scapula and she expectorated a little blood-stained sputum. In the light of the subsequent progress of the illness this attack was probably due to an infarct into the lung. The temperature remained at from 102° to 103° for three or four days and then fell to normal and remained so for about a week when it began to rise again in an irregular fashion. The subsequent course of the temperature was as follows from the 19th to the 28th, 1899, inclusive:—

FIG. 1.

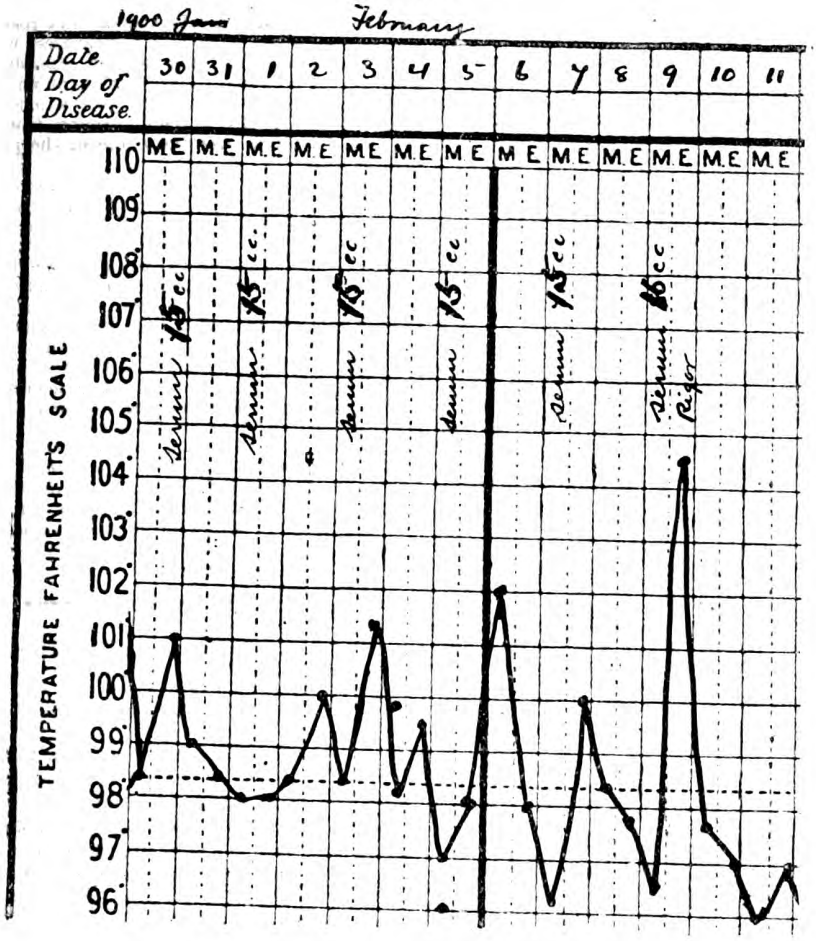



| Date. | Morning. | Evening. | Date. | Morning. | Evening. |
|---|---|---|---|---|---|
| Dec. 19th ... | — ... | 102·0° F. | Dec. 24th ... | 97·0° F. ... | 104·0° F. |
| ,, 20th ... | 98·0° F. ... | 102·6° | ,, 25th ... | 98·0° ... | 103·0° |
| ,, 21st ... | 97·4° ... | 102·0° | ,, 26th ... | 99·0° ... | 101·6° |
| ,, 22nd ... | 96·8° ... | 103·0° | ,, 27th ... | 97·0° ... | 101·4° |
| ,, 23rd ... | 97·6° ... | 102·6° | ,, 28th ... | 98·0° ... | 100·0° |

From the 29th to Jan. 15th, 1900, inclusive, the course of the temperature is shown in the accompanying chart (Fig. 1).

On Dec. 23rd the patient felt weak and she was anæmic; there was a peculiar deep-red, at times almost livid, flush on the cheeks. No spots were seen, no hæmorrhages occurred, she took food well, and there was no vomiting or headache. Except for a few râles at the bases the lungs were normal. The heart's apex was forcible and slapping in the nipple line; there were dulness, some bulging, and forcible pulsation in the second and third intercostal spaces close to the left border of the sternum. In addition to a systolic murmur at the apex a loud systolic murmur had appeared over the pulmonary area and a faint diastolic murmur at the right base. The pulse was 120, weak, and collapsing in character; the respirations were 26 to the minute. The edge of the liver could be felt and the spleen was not enlarged. There was no albuminuria. On Dec. 28th and again on the 31st a hypodermic syringeful of blood was withdrawn from the median basilic vein. Dr. D. S. Davies kindly undertook the bacteriological examination of the specimens, which proved to be free from micro-organisms. On the 31st treatment with anti-streptococcic serum was begun. Previously to this the patient had been treated with full doses of sodium salicylate, salicin, and salol, but without any effect on the irregular rises of temperature. On Jan. 6th, 1900, the systolic and diastolic murmurs at the base resembled a friction sound; the latter, however, was conducted down the left sternal border and was audible over the ensiform cartilage. Dr. Shingleton Smith saw her with me about this time and he agreed in the diagnosis of ulcerative endocarditis. On Jan. 12th the patient seemed weak; the pulse was 96, weak, and collapsing; the respirations were 24. 40 ounces of urine were passed, of specific gravity 1022; it was acid and was loaded with urates, but was free from albumin. The appetite was poor; there were no spots and there was no headache or sickness; the cheeks were still deeply flushed. There was no cyanosis; the veins in the neck were rather full. The heart's apex was now half an inch outside the nipple line; dulness extended upwards to the second rib and one inch beyond the right border of the sternum. The systolic murmur was now loudest in the second left intercostal space and less distinct at the apex and the aortic area. The to-and-fro systolic and diastolic murmur was still audible over the sternum; this murmur varied much in intensity from day to day, sometimes being loud and at other times almost inaudible. A systolic murmur was now generally audible to the right of the sternum in the fourth and fifth spaces. All the murmurs showed much variation on different days. The course of the temperature from Jan. 16th to Jan. 29th inclusive was as follows:—

FIG. 2.




| Date. | Morning. | Evening. | Date. | Morning. | Even |
|---|---|---|---|---|---|
| Jan. 16th | 99·8° F. | 103·0° F. | Jan. 23rd | 98·4° F. | 99·8° F. |
| ,, 17th | 97·0° | 100·8° | ,, 24th | 98·0° | 100·2° |
| ,, 18th | 98·4° | 101·0° | ,, 25th | 98·0° | 101·0° |
| ,, 19th | 98·4° | 100·2° | ,, 26th | 98·0° | 101·0° |
| ,, 20th | 98·4° | 101·4° | ,, 27th | 98·0° | 101·6° |
| ,, 21st | 98·0° | 102·0° | ,, 28th | 97·0° | 101·0° |
| ,, 22nd | 97·8° | 101·4° | ,, 29th | 99·6° | 101·4 |

On Jan. 21st the heart sounds at the apex had an approach to a galloping rhythm with a double second sound.

From about Jan. 20th the patient began to improve; she gained strength and was cheerful and anxious to get up; her colour improved and the flush left her cheeks, her appetite returned, and her temperature took a lower level. The pulse varied from 84 to 96 and the respiration rate was 22. From Jan. 28th she was carefully lifted on to a couch for some hours each day. From Jan. 30th to Feb. 11th inclusive the course of the temperature is shown in the accompanying chart (Fig. 2). On Feb. 3rd the chief murmur was a soft to-and-fro systolic and diastolic murmur at the base, loudest over the pulmonary area. No thrill was ever felt over any part of the area of cardiac dulness. The lungs were normal. She improved all through February, the temperature remaining subnormal after Feb. 9th. By Feb. 21st the cardiac dulness was much diminished in size; it still extended to half an inch outside the nipple line to the left, but above it stopped at the upper border of the third costal cartilage, and to the right it did not go beyond the right border of the sternum. The diastolic murmur had disappeared and there was only a long churning or grinding systolic murmur, loudest at the left base.

After this time it is sufficient to say that the patient steadily improved. On account of anæmia she was now given 10 minims of tincture of perchloride of iron three times a day. On March 4th she was allowed to walk about in her room and on the 11th to walk downstairs. On the 18th she was able to walk upstairs and downstairs without difficulty or shortness of breath, and after being up the greater part of the day there was no œdema of the ankles at night. The temperature was generally a little subnormal, the pulse-rate was 84 and regular, the respiration rate was 20, and the lungs were normal. The heart's apex had returned to the nipple line, the area of dulness had diminished, and the only murmur present was a quiet systolic murmur loudest over the aortic orifice, but also plainly audible at the apex and angle of the left scapula. The aortic second sound was accentuated.

The catamenia, which had been absent since October, returned at this time. The patient remained well for another three weeks and then went to the seaside. The anti-streptococcic serum used was obtained from the Jenner Institute. Mr. George Dean, bacteriologist in charge of the antitoxin department, kindly wrote to say that this serum "was derived from four horses. I used several races of streptococci in immunising these horses; the serum therefore was a polyvalent one. These streptococci were derived from cases of (1) acute abscess; (2) ulcerative endocarditis; and (3) puerperal septicæmia. Two of the races had been exalted to a very high virulence by passage through rabbits." 232 cubic centimetres of the serum were used. 10 cubic centimetres were given at each injection at first; the first injections were followed by a great deal of pain and acute tenderness at the site of inoculation, which became red, swollen, and infiltrated, this swelling and tenderness lasting for a period of from 36 to 48 hours. To secure sleep 15 minims of liquor morphinæ were sometimes given on the night following the injection. After the first five or six injections the patient was troubled with general urticaria which came on three or four hours after each injection. This urticaria was very pronounced and caused intense irritation; it invariably disappeared in the most remarkable way about half an hour after the administration of 15 grains of calcium chloride. The same serum was used throughout.

It will be seen from the chart (Fig. 1) that after the first three injections the temperature fell steadily (by lysis) for four days. As it began to rise again I thought it advisable to give a larger dose and I injected 20 cubic centimetres on Jan. 8th. For some hours after this the patient seemed very poorly, faint, and weak, with a feeble pulse. I did not think it advisable to give so large a dose at one time again, and after giving a dose of 10 cubic centimetres twice a day for two days I administered a dose of 15 cubic centimetres, which seemed to be the proper one in her case. From the 15th to the 28th the improvement in her general condition was so marked that I stopped the injection of serum. So far the injections had always given her much local pain and discomfort, as above stated, and this upset her and kept her back, so that partly on this account I was glad to give her an interval of rest. But on the 28th, as the temperature, though lower in range, was still oscillating in character and above normal, I recommenced the injections. From this time they gave rise to no local pain, urticaria, or red blush at the site of injection, and very slight swelling, but now to constitutional symptoms, consisting of headache and a feeling of malaise for some hours. The same serum was used throughout. On Feb. 9th, at 10 P.M., on the occasion of the sixth injection of the second series, a few minutes after injecting 16 cubic centimetres the patient said that she felt very ill; the respiration became rapid, there was well-marked cyanosis, the pulse was 120 and very weak, and she seemed very ill. She took a teaspoonful of sal volatile and in a little time she was better. The cyanosis lasted about 10 minutes. About noon she had a slight rigor and the temperature rose to 104·6°. She felt ill all day but improved towards evening, the temperature falling to 101° by 9.30 P.M. It is remarkable that after this injection her temperature never rose again but remained for some time subnormal, and her pulse varied from 72 to 80. This seemed the turning-point of her illness, which thus appeared to end by a sort of crisis. Interesting points are the pronounced local effects of the first injections, their disappearance with later ones, and the occurence of constitutional (general) effects. I may add that no changes were found in the urine after the injections and that the punctures all remained aseptic.

I saw the patient on May 3rd after she had spent a month at the seaside and she looked fat and rosy. At first there had been some œdema of the ankles, but this had now passed off and her only trouble was slight shortness of breath on exertion. The heart's apex was in the fifth space in the nipple line, and there was a loud blowing systolic murmur accompanying the first sound, loudest in the aortic area, but audible over the whole of the præcordium and in the back.

Since recovery from ulcerative endocarditis is very rare it may be objected that this was not a case of that disease, but should rather be considered one of rheumatism with pericarditis. But in favour of the former diagnosis are (1) the presence of a chronic valvular lesion on which an infective process is apt to graft itself; (2) the fact that the illness did not yield to the several salicylic compounds which were tried in full doses without effect; (3) the occurrence of a pulmonary infarct; and (4) the steady progress of the patient from bad to worse until treatment by serum was begun, which treatment again would have had no influence on acute rheumatism. I may also mention as possibly of importance in etiology that the patient's house adjoined a large graveyard, now, however, only occasionally opened, that there were several large trees in front of it, and that the first symptoms began in the autumn. These facts are interesting in connexion with Sir T. Lauder Brunton's suggestion that endocarditis is more liable to come on at the time when the leaf falls.[1] I think it also of importance that the serum treatment was begun early.

Clifton, Bristol.

## THE VARIETIES OF ACUTE PNEUMONIA.[2]

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THIS subject is far too large for me to deal with exhaustively. I will confine myself to two points — varieties in symptoms and physical signs and varieties in causation. I am speaking only of lobar pneumonia and not at all of lobular or broncho-pneumonia. In an ordinary typical case no difficulty in diagnosis can arise, but exceptional cases may puzzle the most experienced. A physician so expert in physical diagnosis as Dr. Samuel Gee[3] writes: "A physician well read in the book of nature knows that he cannot *always* distinguish between pleurisy and pneumonia. ..... It much more often happens that a small pleural effusion is mistaken for pneumonia. The physical signs of the two diseases may be the same and even puncture is not always decisive."

A rare but somewhat puzzling symptom is low temperature. The following was a serious case of pneumonia where the temperature never exceeded 100·5° F. It occurred in the person of a stout, active man, aged about 56 years, vigorous both in mind and body. One morning, feeling

[1] On Endocarditis and the Use of the Thermometer in its Diagnosis, Edinburgh Medical Journal, May, 1897.

[2] A paper read before the Nottingham Medico-Chirurgical Society on Feb. 21st.

[3] Allbutt's System of Medicine, vol. v., p. 369.

upset, he remained in bed and in the evening had a temperature of 100·5°, cough, and signs of bronchitis. On the following morning—the second of his illness—his temperature was 99·8°, his respiration was 32, and his pulse was 104. He had a frequent irritable cough, which was increased by any movement; his tongue was coated with a yellow fur and there was general prostration. He was coughing up abundant, sticky, fibrinous sputa which adhered to the vessel and did not move when the vessel was inverted. The sputa were abundantly stained with bright blood. On examination impaired percussion resonance was discovered in the left axilla and at the left base, where also there was distinct tubular breathing and bronchophony. Pleuritic friction was audible over a limited area at the lower and back part of the axilla. He was given three grains of calomel and a mixture containing carbonate of ammonia and ipecacuanha. Notwithstanding the moderate temperature he was very ill and prostrate and seemed more likely to die than recover. On the third day his temperature in the morning was 99·8°, his pulse was 104, and his respiration was 28; and in the evening his temperature was 100·1°, his pulse was 108, and his respiration was 30. He was still spitting blood but was decidedly improved. On the fourth day his temperature in the morning was 97°, his respiration was 24, and his pulse was 96. His midday temperature was 98·4°. In the evening his temperature was 97·6°, his respiration was 24, and his pulse was 83. He was improved. The sputum was still fibrinous and it adhered to the vessel but it was less blood-stained. There was pleuritic pain on coughing. Dulness and tubular breathing were still quite distinct. On the fifth day his morning temperature was 97·8°, his respiration was 24, and his pulse was 80. There was now no pain on coughing. For the first time he could lie on the left side. The sputa were barely blood-stained and were becoming frothy. Tubular breathing was still distinctly audible at the left base but was quite gone from the axilla. On the seventh day his morning temperature was 99·2° and his pulse was 100. His evening temperature was 100°. There were occasional râles at the back and a rub in the axilla. He was over-fatigued by having several business interviews in bed. On the ninth day his temperature was 99·0° and his pulse was 88. The pleuritic rub and tubular breathing were quite gone. On the tenth day and afterwards his temperature remained normal and he was convalescent, but it was a fortnight before he regained strength sufficiently to walk out of doors and to go away from home.

In this case the patient's age, stoutness, and habits all tended to make an attack of pneumonia unusually dangerous; but by the fourth day all immediate danger had subsided, although the physical signs remained typical. From the amount of sputa and the area of dulness the extent of lung consolidation could not have been very small and yet there was never high fever. Wilson Fox[4] says: "A few rare and exceptional cases of pneumonia existing without fever have been recorded, but it must be remembered that the pyrexia of pneumonia may last in some cases for only a few hours while the consolidation persists after the fever has disappeared. The occasional apyrexial character of pneumonia is supported by the high authority of Wunderlich. Lebert observed a case where the temperature only reached 100° F. on the sixth day." As a marked contrast to this may be mentioned cases recorded by first-rate observers where the symptoms, both general and special, are well-marked and undoubted, but physical signs are scanty or absent. Some of these it has been proposed to explain by suggesting that the area of lung affected is near the root and does not reach the surface. In other cases it has been suggested that the general symptoms of pneumonia are caused by the products (toxins) of the pneumococcus which may be growing in other organs or places than the lung. As has been recently written:[5] "Most physicians have seen cases of acute pleurisy the clinical course of which has been indistinguishable from that of a pneumonia, but in which post mortem the lung is not found hepatised. In these it is not surprising to learn that the pneumococcus has been found in the pleural lymph by Dr. Washbourn."

This leads me to the second part of my subject—namely, varieties in causation. I hope it will be agreed that it is not sufficient nowadays merely to diagnose pneumonia, but that an attempt should be made to ascertain the cause. Much, both in prognosis and in treatment, may depend upon the cause. Many years ago Skoda,[6] in Vienna, taught that pneumonia was a specific *general* disease, and, pointing to a patient with the general symptoms of pneumonia but with no physical signs in his lungs, argued that this proved that there was a general infection of the blood before the local changes occurred. Some years ago, too, Wilson Fox in his monograph on Pneumonia came to the conclusion that the causes of acute pneumonia were not one but varied.

Of recent years more precision has been given to the question by bacteriology, but much remains to be done, and the subject is by no means worked out. Weichselbaum,[7] in Vienna, in 129 cases of pneumonia discovered the pneumococcus (Fränkel's diplococcus) in 94, Friedländer's bacillus in nine, streptococcus pyogenes in 21, and staphylococcus pyogenes aureus in five. There is also the rod-shaped microbe which was found by Dr. Klein in the epidemic pneumonia of Middlesbrough. Thus the theory of a variety in causation is supported by the variety of micro-organisms found. Moreover, the pneumococcus, which is the micro-organism most commonly found in pneumonia, is sometimes found in lobular pneumonia, sometimes in pleurisy without pneumonia, sometimes in endocarditis and in epidemic cerebro-spinal meningitis, and sometimes in healthy saliva.

It is hardly necessary to point out that the symptoms of pneumonia are not entirely due to the local inflammation of the lung tissue, but in great part to the specific nature of the poison. Not infrequently the symptoms precede the physical signs by several days; the temperature and even the number of respirations fall when the crisis comes, long before the solidified lung has cleared up; and the violence of the fever is not in proportion to the extent of the local lesions. There is much reason to think that the wide variations in symptoms, course, and fatality may coincide with differences in the micro-organisms which predominate in the diseased lung. No one could expect a plague pneumonia, a typhoid pneumonia, and an influenza pneumonia to run the same course.

One of the best examples of specific pneumonia is influenza pneumonia. This usually follows an attack of evident influenza, but in some cases it is the only manifestation of the disease. Probably the latter group accounts for most of the instances of *infection in pneumonia*.

Although the question of infection has been occasionally mooted for many years past its exact position is hardly yet accurately defined. In an experience of over 20 years I have never seen a case of pneumonia in the general hospital give rise to a second case in the same ward or building, neither have I ever known a nurse or medical man to be infected from a patient. We may therefore take it that under hospital conditions, with good sanitation and free ventilation, pneumonia does not ordinarily spread to patients in adjoining beds or to attendants. But in spite of this experience and of the long-established tradition that pneumonia is not an infectious disease cases do occasionally arise which clearly show that under less favourable circumstances pneumonia does spread by direct infection. Wilson Fox[8] quotes Hardwick to the effect that "(1) a priest attacked by pneumonia communicated it to a relation who visited him, and who again communicated it to another relative; and (2) an old man at the point of death from pneumonia sent for his relatives, each of whom was subsequently attacked." It may very well be that some kinds of pneumonia are more infectious than others, especially the pneumonia of influenza. It is highly probable that the six cases which I am about to describe were of this nature. Although influenza was not prevalent at the time in that neighbourhood there were no other signs of influenza and there were no cases of simple influenza or other illness in the house. The first two cases I saw in consultation with Dr. J. J Bingham of Alfreton, the other four were less severe and were kindly communicated to me by Dr. Bingham. The cases occurred in January and February, 1899, in the members of one well-to-do family and in one house.

On Jan. 7th, 1899, a little girl, aged 6 years, was taken ill with symptoms of pneumonia and very soon there were signs

[4] Diseases of the Lungs, 1891, p. 314
[5] Albutt's System of Medicine, vol. i., p. 674.
[6] Brit. Med. Jour., Nov. 4th, 1899, p. 1268.
[7] Allbutt's System of Medicine, vol. v., p. 113.
[8] Diseases of the Lungs, 1891, p. 262.

of consolidation of the right base with a temperature of 104° F. Four days later the left base became affected. On Jan. 16th, the ninth day of illness, I was asked to see her and found her with a frequent, distressing cough. Her temperature was 101° F., her respiration was 64 per minute, and her pulse-rate was 140. There were Skodaic resonance at the left apex, dulness to percussion in the axilla and lower three-quarters of the left back, increased vocal resonance with loud tubular breathing, and râles over the dull areas. The heart was not displaced. The right base had nearly cleared up. She was nursed chiefly by her mother and spent many hours lying in her mother's arms. I saw her again nine days later—i.e., the eighteenth day—when she was approaching convalescence with a nearly normal temperature and greatly improved general condition, but the dulness and whiffing tubular breathing still remained. She ultimately got quite well.

On Jan. 20th, four days after my first visit to the preceding patient, the mother had a severe rigor and a temperature of 104° F. on the following morning. At my second visit on Jan. 25th her temperature was 102° F., her respiration was 64, her pulse was 160, and she was constantly delirious. There was pneumonic consolidation of the right base and of almost the whole of the left lung. She died early on the following morning, the sixth day of her illness.

A week later, Feb. 2nd, the elder girl, aged eight years, was taken ill with pneumonia. Four days later, on Feb. 6th, a brother, aged 12 years, was seized; and on the next day another brother aged 14 years. Again, one day later, on Feb. 8th, the father was affected. With the exception of the mother, who died, all the patients were ill in bed at the same time suffering from pneumonia and they recovered.

In April, 1900, I was asked to see in consultation with Dr. Buckley of this city a child, aged one year and three months, who was suffering from well-marked lobar pneumonia of both bases. Her temperature was 103·6°, her pulse was 150, and her respiration was 60. The child died. I ascertained that the child's aunt, living in the same house, had only just recovered from a very severe attack of pneumonia in which the temperature had reached 104·6° and in which resolution was by crisis.

There is no doubt that pneumonia does not occur uniformly distributed throughout the year, but is frequently met with in groups of cases not necessarily directly connected, or in small local epidemics. Most of the numerous recorded epidemics have occurred in prisons, workhouses, or ships, and have been associated with overcrowding and bad sanitation. That has not, however, always been the case. I have a letter from Dr. Cardno Still of Shepshed, dated June 15th, 1894, in which he writes: "From a scientific point of view I thought you might be interested to know that we have an epidemic of pneumonia. It has been going on since the end of January. There have been 28 cases and eight deaths. It seems to be almost entirely lobar. The epidemic is confined to the parish—not the village alone—and the surrounding villages are exempt. We have nothing in common here except the atmosphere, for the water-supply is from wells, the sewerage is limited, and the milk is from 20 or more sources. Those following indoor and outdoor occupations are alike attacked. It affects both sexes, but chiefly males, and with few exceptions all are adults." In a subsequent letter he writes: "In 1896, between Dec. 11th and 31st, we had 11 cases and one death."

I had neither the time nor the opportunity to make any local investigation and I believe the cause was never ascertained, but it reminds one somewhat of the Middlesbrough epidemic. That was an example of the next group I come to—namely, *food pneumonias*—that is to say, pneumonia produced by eating poisonous food. "The Middlesbrough epidemic of pleuro-pneumonia was clearly traced by the late Dr. Ballard to the use of American bacon which was made by soaking in water and then only slightly drying salted pork. This bacon was proved to be poisonous to animals fed with it and lung lesions were produced. ..... The Middlesbrough epidemic of food poisoning is to be looked upon as the result of the ingestion of a pneumonia-producing micro-organism."[9] In this instance a pulmonary lesion was caused by infection through the alimentary canal, lacteals, mesenteric glands, thoracic duct, subclavian vein, right side of the heart, and pulmonary arteries, just as no doubt many cases of pulmonary tuberculosis arise through the alimentary canal from the ingestion of the tubercle bacillus in milk.

Another form of pneumonia of which we have seen nothing in modern times in this country is *plague pneumonia*, but the experiences of Vienna as well as of India show that in this exceptional form of plague the resemblance to ordinary (croupous) pneumonia is so close that the first cases are seldom diagnosed. Bubonic plague, as is known, specially implicates the lymphatic system and glands, and it is conceivable that the early infection of the lung is due to the failure of the glands to check the course of the poison on its way to the veins and right side of the heart.

The last form of pneumonia of which I propose to speak is *typhoid pneumonia*. I do not allude to the pulmonary catarrh, or broncho-pneumonia, which is found in some degree in a large majority of the severe cases of enteric fever. I refer to a very much more restricted but sharply defined class of cases, of which I have seen several. They commence with an attack of acute lobar pneumonia displaying the usual symptoms and physical signs, and it is only by the prolonged duration and after-course of the illness that enteric fever is suspected. In three cases at present in my mind the pneumonia attack was typical and was the commencement of the illness. In one the presence of enteric fever was proved by finding well-marked intestinal lesions post mortem. In a second the presence of spots, intestinal distension, and copious intestinal hæmorrhages established the diagnosis beyond doubt. This patient recovered. The third occurred in a lad, aged about 15 years, who was admitted into the Nottingham General Hospital with a sharp attack of acute pneumonia. By the seventh or eighth day the temperature fell to about 100° F., but after a few days it began to rise again. He then went through a well-marked attack of enteric fever and recovered. In this case, although the temperature did not reach normal between the two illnesses, there was more of an interval than in the other two. Dietl thought that "the poison of typhoid might attack the lungs instead of the intestines, and Sturges has also expressed the opinion that pneumonia may be only another localisation of typhoid." Wilson Fox[10] writes: "There are, it is true, a certain number of cases where pneumonia commences early in typhoid fever and where it is liable to be mistaken for the primary disease. Such cases are very rare; they do not show critical symptoms and with the further progress of the case the character of the typhoid fever become marked." Bonnemaison relates how in one house a man and his wife died from malignant pneumonia; soon after a son and daughter suffered from typhoid fever.

I do not know whether the typhoid bacillus was present in the lung in the cases which I have mentioned. They occurred several years ago when the micro-organisms associated with pneumonia were less well known. I was inclined at the time to consider them as instances of double infection, the pneumonia organism developing more quickly in the lung than the enteric organism in the intestine, but I have been led to think that there may have been only one poison and one channel of infection. We have seen that the infection of pneumonia may enter the lung through the intestine (e.g., Middlesbrough food epidemic); and I am equally convinced that the poison of enteric fever may enter through the air passages. I am aware that this is denied, but until comparatively recently it had been erroneously taught for one or two generations that there was an absence of direct infection in typhoid fever.

One further point and I have done, and that is the influence of bad sanitation in producing pneumonia. To quote Wilson Fox[11] again: "Many isolated cases of pneumonia orginate in insanitary conditions of house drainage." Out of 1065 cases of pneumonia from the Collective Investigation Record in 47·5 per cent. the sanitary state of the house was bad, doubtful, or indifferent.

In conclusion, I think I have now given some reason for the opinion with which I commenced, that the causes of pneumonia are various, and have offered some explanation, however inadequate, of the fact that several micro-organisms have been found associated with the same disease.

Nottingham.

[9] Report of the Medical Officer to the Local Government Board for 1888.

[10] Diseases of the Lungs, p. 268.

[11] Ibid., p. 265.

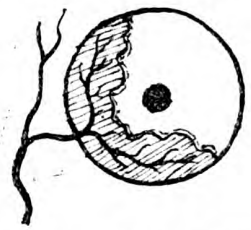
# RODENT CANCER OF THE CORNEA; OPERATION; RECOVERY WITH RETENTION OF GOOD SIGHT.

BY SYDNEY STEPHENSON, M.B. EDIN.,
OPHTHALMIC SURGEON TO THE EVELINA HOSPITAL FOR SICK CHILDREN, ETC.

RODENT cancer of the cornea is undoubtedly one of the rarest affections of the eye. Indeed, so far as I know, not a single case has yet been reported in periodical English literature. Since the malady was described by Mooren in 1867[1] several excellent papers upon the subject have been published abroad. One of the latest, by Schmidt-Rimpler of Göttingen, is especially valuable. It contains the first account of the pathological examination of an eye affected with rodent ulcer. It may be found by those interested in the *Bericht der Ophthalmologischen Gesellschaft*, Heidelberg, 1898, p. 114. The rarity of rodent corneal cancer renders it almost unnecessary to offer any apology for recording a case which I was enabled to follow rather closely and to operate upon with success.

The patient, a female, 60 years of age, was seen by me on May 17th, 1897, in consultation with Mr. Frederick E. Fenton of Ealing. It appeared from the history of the case that the left cornea had become ulcerated in the previous March, but under Mr. Fenton's treatment that soon subsided, only to be followed by redness of the right eye. The patient, a hale and hearty person of determined character, had herself never suffered from definite gout or rheumatism, although her maternal grandfather had died at an advanced age from the former affection. The patient regarded herself as extremely subject to "colds." Upon examination the right eye showed several of the curious violet elevations or nodules characteristic of scleritis. Two months later (July 16th) the condition was as follows: Right eye.—A large, somewhat elevated patch of episcleritis lay on the outer side of the eyeball, its central parts being rusty and soft-looking and its peripheral parts pinkish-red. The nodule was not tender. There was a little photophobia, but tension was normal and there was no iritis. The lower outer quadrant of the cornea was rather hazy and a few vessels ran into it from the neighbouring sclero-corneal margin. There had been some pain, chiefly nocturnal, in the right temple. Left eye.—A corneal haze was present in the lower inner quadrant of the cornea. A change to the seaside was recommended and the patient was not seen again until Sept. 16th. On that date the outer side of the right eyeball showed a large patch the centre of which was slate-coloured and the periphery dull-red. Its central, dark-coloured area looked almost pulpy in consistence. Neither tenderness nor pain existed. The general condition was good.

The patient was not seen again until May 10th, 1898, when Mr. Fenton asked me again to examine her. The episcleritis from which she suffered was said to have made slow though satisfactory progress until April 24th when the cornea was slightly injured whilst taking off her glasses. The eye since then had watered, been sensitive to light, and had felt generally uncomfortable. Right eye. — The episcleritis had left behind it a slightly depressed, lenticular patch of slaty hue. An oval ulcer of singular appearance now involved a limited portion of the outer side of the cornea below the horizontal meridian. Towards the sclera it was bounded by a vascular area and enlarged conjunctival vessels, and its cavity appeared to be filled with some kind of gelatinous material. The palpebral conjunctiva was slightly reddened. The iris was active and not discoloured. There was no lacrymal mischief. Tension was normal. Vision, $\frac{6}{18}$. Left eye.—There was a haze over the cornea, as mentioned previously. Tension was normal. Vision, $\frac{6}{12}$. The treatment advised included (*a*) the application of iodoform to the ulcer; (*b*) the wearing of dark, protective goggles; and (*c*) the administration of a pill of carbonate of iron twice a day. By June 2nd the ulcer of the right cornea had increased in size, its advancing edge had become irregular, and small vessels were present at its base. There was no actual pain, although the affected eye felt uneasy from time to time. On June 30th there was slight photophobia and watering of the right eye, but no pain. The ulcerated spot in the right cornea was larger, and now presented a raised, sinuous edge, advancing towards the central region. My suspicions with regard to the malignant character of the ulcer were hinted to the patient and explained fully to the medical attendant, Mr. Fenton. On August 4th, the patient complained of an occasional sensation as of a foreign body in the eye; there was, however, little actual pain. Some photophobia was present, but there was no especial redness. The outer and lower part of the right cornea was occupied by a grey, depressed, and uneven ulceration, the advancing edge of which was grey, sinuous, and rather raised. A number of fine vessels, derived from a large trunk in the conjunctiva, ramified over the base of the ulcer. The appearance of the parts is shown in the appended diagram. The lesion, it will



Diagrammatic representation of cornea, showing ulcerated portion and vessels derived from trunk in conjunctiva. Right cornea, August 4th, 1898.

be observed, did not encroach upon the pupillary region of the cornea. The pupil was small and active and there were no signs of iritis. The fundus was in its normal state. Tension was normal. Vision, $\frac{6}{12}$ + 1·5 D. spherical = $\frac{6}{12}$. The glands were not involved. A definite diagnosis was made of rodent cancer on the cornea and operation was advised.

On the following day, under cocaine anæsthesia, the ulcer was thoroughly burnt with the galvano-cautery, special attention being paid to the aggressive margin. The operation (at which Mr. Fenton assisted) was of a somewhat delicate character owing to the care that had to be exercised not to interfere with the clear cornea that lay in front of the pupil. It was followed by pain, œdema and ecchymosis of the eyelids, as well as by marked redness of the globe. On Oct. 13th the lower half or so of the ulcer had cicatrised in a smooth and satisfactory way, but the remainder was uneven, rugous, and permeated by fine vessels. The corneal sensibility as regards both eyes was certainly diminished. This last observation is interesting and bears out Ahlström's statement[2] that such is the case in rodent ulcer of the cornea. Two days later, under local anæsthesia, the galvano-cautery was freely applied to the roughened portions of the cornea. By Feb. 2nd, 1899, the ulcer had completely healed. Right vision, $\frac{6}{18}$. On June 8th the outer third of the right cornea was the seat of a slight opacity, delicate extensions from which crossed the pupillary region. Vision, $\frac{6}{18}$ + 1 D. cylinder axis horizontal $\frac{6}{12}$ iv. With presbyopic correction (+ 3·5 D. spherical) the patient could read slowly the smallest type on Jaeger's test-card. To judge from the refraction, which had formerly been spherical, the operations had slightly altered the curvature of the affected cornea.

Upon inquiry I learn from Mr. Fenton that the patient died on Jan. 12th, 1900, from influenza and failure of the heart. The corneal mischief, however, never recurred, nor did the eyes cause any further trouble.

Welbeck-street, W.

[1] Ophthalmiatrische Beobachtungen, Berlin, p. 107.

[2] Klinische Monatsblatt für Augenheilkunde, Mai, 1898.

# FOUR CASES OF PUERPERAL ECLAMPSIA.

BY T. B. BROADWAY, M.B., CH.B. GLASG.

THE cases of eclampsia now to be described occurred in my practice during the last six months and presented some points of interest. In the first case the high temperature and the length of time for which it kept up were remarkable, especially as there was nothing septic to account for it.

CASE 1.—In the last week of December, 1899, I was called to a primipara attended by Mr. Goodfellow of Roche. She

was a strong, healthy woman, aged 19 years, and had a normal labour except that Mr. Goodfellow removed the placenta by inserting his hand. She did well for three days, then convulsions came on; Mr. Goodfellow saw her and gave a hopeless prognosis. I was called in on the fifth day; she was then lying comatose, with dilated pupils, a pulse of 140 per minute, and a temperature of 106·2° F.; her mother also stated that she had not passed urine for the last 24 hours. I gave her an hypodermic injection of two grains of pilocarpin nitrate. Shortly before I left, as convulsions again came on, I gave her an enema of one ounce of sulphate of magnesium and one drachm of bromide of potassium as well as douched out her uterus and ordered her mother to keep her on milk and soda-water, feeding her every half hour. On the following day I found her temperature still 106°, but there had been no recurrence of fits and she had passed both fæces and urine in her bed unconsciously. On account of the high temperature I gave her three-grain doses of phenacetin every three hours and put her on the following mixture: solution of perchloride of iron, two drachms; sulphate of magnesium, two ounces; tincture of digitalis, half a drachm; spirit of nitrous ether, two drachms; water to make up eight ounces; one ounce to be taken every four hours. On Dec. 23rd I found her temperature to be 104·8°, and as she was still insensible I asked Dr. Shaw of St. Austell to see her with me. As he thought there might be some uterine mischief, though there was no discharge, I again douched out the uterus with perchloride (1 in 2000). On the following day as her temperature was still 104·4°, I again douched her out with chinosol. On the 25th I found her temperature to be 102·4° and her pulse 120, and for the first time she seemed to notice things—she inquired who I was, and on being asked how she felt she made a complaint of pain in her head and back. I now managed for the first time to obtain some urine and found it loaded with albumin; her recovery, however, from this period was steady, though she was on my hands till the end of January, 1900.

CASE 2.—This patient was a young woman 4 feet 8½ inches in height and very spare. Mr. Goodfellow was attending her; she had been in labour for 48 hours when he telegraphed for me. He told me that she had had several fits and that her labour pains were very unsatisfactory. I found the woman conscious but looking anxious and worn. On examination per vaginam I found the os dilated to the size of half-a-crown. I advised rapid dilatation and instrumental delivery under an anæsthetic. As Mr. Goodfellow agreed we gave her chloroform and delivered her after a little trouble. Her further progress, so far as I am aware, was uneventful.

CASE 3.—I saw this patient for Dr. Shaw of St. Austell. The woman was a multipara, this being her fourth confinement. She had an ordinary labour and was attended by a midwife. On the following day she had convulsions when Dr. Shaw asked me to see her. I found her lying semi-conscious with the muscles of her face twitching; her temperature was 99·4° F.; and her pulse was 110 and irregular. I gave her an injection of half a grain of pilocarpine along with a quarter of a grain of morphine and a mixture containing bromide of potassium and sulphate of magnesium. Since then she has had no more fits, but is still in our hands for albuminuria and anæmia.

CASE 4.—I was called to this patient on June 23rd; on arriving I heard that she had been having labour pains for the last 13 hours but that the friends had sent for me as she had had two or three fits the hour previous to my arrival. The patient was very anæmic. I found her tongue bitten and could elicit no replies to my questions; the os was dilated to about the size of a sixpence. I gave her the following mixture: sulphate of magnesium, one ounce; bromide of potassium, three drachms; water to make up two ounces; one ounce to be taken every three hours. This lessened the number though not the severity of the convulsions, and as on a later visit, some six or seven hours after the first, I found the os dilated to the size of a florin and as she had passed no urine I asked Dr. Shaw to see her with me. We agreed to give an anæsthetic and deliver under it. In this we found no difficulty. We passed a catheter previously to using instruments and drew off half a teacupful of bloody urine. The patient is progressing fairly, though she is not very clear in her answers; there is still a little trouble in her passing urine. Previously to this she was being treated by Dr. Shaw for anæmia and amenorrhœa.

St. Denys, Cornwall.

# A Mirror
OF
# HOSPITAL PRACTICE,
## BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.**

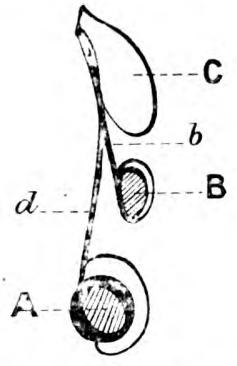
## ST. GEORGE'S HOSPITAL.

### A CASE OF SUPERNUMERARY TESTIS.

(Under the care of Mr. G. R. TURNER.)

UP to a recent date the possibility of a third testis has been denied. For instance, Mr. Jeremiah McCarthy in Quain's Dictionary, 1882, p. 1606, wrote: "Supernumerary testicles have been described and men not unfrequently believe themselves to be so gifted. The mistake has arisen from the presence of encysted hydroceles or of fatty or fibrous tumours of the cord, or of an old epiplocele. There is no well-authenticated case recorded of the presence of more than two testicles." The same opinion has been expressed in a still more recent work. Lydston,[1] writing in 1899, says: "It is probable that the third testicle is a myth." Yet a few indubitable cases have been recorded in which the supernumerary testis has been removed and examined microscopically. A very remarkable case is described in the *New York Medical Record* of Feb. 23rd, 1895. A recruit of the Eighth Cavalry was found to be possessed of four testicles, three of them being well developed; but in this case, as no operation was performed, no histological examination was made, and the diagnosis may reasonably be considered unsettled.

A healthy-looking child, aged three and a half years, was admitted into St. George's Hospital on July 30th, 1894. On the right side of the scrotum there was an irreducible swelling which was transparent and looked at first sight




A represents the lower (larger) testicle with its hydrocele. B represents the upper testicle with a normal tunica vaginalis. C represents the serous sac in front of the upper part of the cord, with apparently no communication with the peritoneal cavity. *b* and *d* represent the cords of the two testes which seemed to join above.

like a hernia above a hydrocele. The testicle could be felt at the bottom of the scrotum and above this another rounded lump could be distinguished. Mr. Turner cut down on the swelling and separated it from the cord. The upper part was a serous sac full of clear straw-coloured fluid but containing no gut and not communicating with the peritoneal cavity. This cyst was removed. Below it were two testicles; the upper one had a normal tunica vaginalis and a distinct cord of its own and the lower and larger one was in the usual position of the testis with the sac of the tunica vaginalis the seat of hydrocele. This was laid open and its margins were stitched to the skin wound. The boy did well afterwards, though his convalescence was retarded by a whitlow and a portion of the wound healing of necessity by granulation. The left testis appeared to be normal.

[1] Surgical Diseases of the Genito-urinary Tract, p. 921.

*Remarks by* Mr. TURNER.—An almost exactly similar case was, curiously enough, a fortnight later under the care of Mr. Arbuthnot Lane in Guy's Hospital and has been reported by him.[2] In his case, too, the cord of the supernumerary testis blended above with the spermatic cord but there was no hydrocele. Microscopical examination of the supernumerary testis which Mr. Lane removed showed "well-formed tubules with spermatogenesis proceeding." His patient was a youth, 17 years of age. In the case above related, as in Mr. Lane's case, it would seem that the supernumerary testis is developmentally a subdivision of the larger organ on the same side.

## QUEEN'S HOSPITAL, BIRMINGHAM.

### FOUR CASES OF CHOREA TREATED WITH LARGE DOSES OF ARSENIC.

(Under the care of Dr. A. H. CARTER.)

IN the successful employment of arsenic in chorea it is now generally agreed that large doses must be administered, and if the initial dose is small it may be slowly or rapidly increased to the maximum. It is now recognised that a large dose of arsenic for a short time is better borne than a smaller dose for a long time. De Renzi[1] has advised that 20 minims of the liquor arsenicalis should be given at first in the case of children and double that amount in the case of adults. These amounts are probably a little excessive as initial doses, but on the whole children stand arsenic well. In all cases much better results are obtainable if the patient is confined strictly to bed. For the notes of the cases we are indebted to Dr. W. Billington, house physician.

CASE 1.—A girl, aged 13 years, was admitted into the Queen's Hospital, Birmingham, on Feb. 13th, 1900. For five weeks she had had choreiform movements and these, in spite of treatment at home, had got worse. Three years previously the patient had acute rheumatism. This was followed by an attack of chorea lasting four weeks. 18 months before admission she had a second attack of chorea. The third and present attack was the most marked and the most resistant to ordinary treatment. The movements were general but not violent, taking the form of persistent "fidgeting." The patient was unable to write or to hold anything in her hands and her speech was slightly affected. The first heart sound was blurred in the mitral area and the apex beat was in the nipple line, but compensation was good. On Feb. 14th the patient was ordered to have 15 minims of solution of arsenic three times a day. The medicine in this case, as in all the others, was given in the middle of a meal in a wine-glassful of water. No signs of intolerance appeared until the 20th, when she vomited once shortly after taking the arsenic. On the 21st the arsenic was stopped altogether, 315 minims of Fowler's solution having been taken in a week. During the time the patient was taking the arsenic she ate and slept well and exhibited no signs of intolerance except the single occasion on which she vomited. A marked improvement in the chorea was noticed on the fourth day and at the end of the week all movement had practically ceased. On Feb. 24th she was allowed to get up and on March 1st she was discharged from the hospital quite cured. She was subsequently under observation for two months and during that time she showed no signs of a relapse.

CASE 2.—A girl, aged six years, was admitted into the Queen's Hospital, Birmingham, on April 23rd, 1900. Chorea had come on for the first time 10 days before admission and quickly became very violent, so much so that her mother was scarcely able to hold her in her arms. The whole body was affected and she was very excited and passionate. There was no very definite history of rheumatism, but the child was said to have had indefinite pains in her legs and thighs for the last six months. These were described as "growing pains." The heart was unaffected. On April 23rd the child was put on 15 minims of solution of arsenic three times a day, and on the 24th this was increased to 18 minims three times a day. There was an immediate and marked improvement and on the 28th the chorea had almost subsided and the patient was eating ravenously and sleeping well without sedatives. No signs of intolerance appeared until the 29th, when she vomited twice after taking her medicine. On the 30th the arsenic was stopped, 354 minims of solution of arsenic having been given in seven days. On May 1st the patient vomited after each meal. The breath was foul, the tongue was furred, the bowels were constipated, and the abdomen was retracted. She was perfectly quiet and seemed to be heavy and dull. An aperient was given together with a simple enema, and the bowels having been freely opened bismuth was given every four hours in 10 grain doses for 24 hours. The vomiting persisted for several days and then stopped, and the patient rapidly convalesced. On May 5th she had a slight twitching of the hands, but this disappeared in a day or two. On the 8th she was allowed to get up and on the 14th she went out of hospital without a trace of chorea having been noticed for a week. She was in hospital for 21 days.

CASE 3.—A married woman, aged 25 years, was admitted into the Queen's Hospital, Birmingham, on April 21st, 1900, with hemichorea of the left side. The chorea had come on a fortnight before admission. 15 weeks previously she had an attack of acute rheumatism and at the time of admission she still complained of obscure pains in her joints, though there were no objective joint changes. She had had three children and at the time of admission was probably two or three months pregnant. She had never had chorea before and only the one attack of rheumatism. The movements were confined to the left arm, the left leg, and the left side of the face, and the patient was unable to hold anything in her left hand on account, as she said, of the jerky movements and a sense of weakness in it. Since the onset of the chorea she had slept badly, had lost her appetite, and had become very excited and emotional. The knee-jerk and plantar reflex on the left side were very lively and a spurious ankle clonus was obtained. The first heart sound was impure, but there were no definite murmurs. On April 22nd the patient was put on 15 minims of solution of arsenic three times a day. On the 24th she vomited once, but three hours after taking her medicine. After this she gradually became worse, the chorea became more marked, and, passing to the other side, affected the whole body. The movements became very violent, the patient got out of bed, shouted, and wept, and did not sleep at all for two days and two nights. When spoken to she answered rationally for a moment, but at once wandered off to something else and at times was very delirious. The bowels were confined, the urine was scanty, and the appetite was very poor. The arsenic was steadily persisted with and on April 28th she began to improve, she slept better, and was much quieter. On the 29th the arsenic was stopped, 315 minims having been taken in seven days. On the 30th the movements had almost ceased and no symptoms of intolerance appeared from first to last. After this improvement was steady and on May 6th all movement had ceased and the patient was able to sew and to read. She ate well and slept well. On the 11th she went out quite well, no movements having been noticed for six days. Ten days later she again reported herself and was then looking much better and stated that she was quite steady and had had no relapse.

CASE 4.—A girl, aged seven years, was admitted into the Queen's Hospital, Birmingham, on May 3rd, 1900, with mild general chorea. The patient had always been excitable and irritable and was "very bright at school." There was no history of rheumatism obtainable. The chorea came on for the first time three weeks before admission, and at the same time her temper became worse and she was very peevish. No improvement followed treatment with small doses of arsenic as an out-patient. On admission the movements were slight, but affected the face and all the limbs. There were no heart murmurs and all the organs appeared to be healthy. On May 6th the child was put on 15 minims of solution of arsenic three times a day. She vomited once on the 7th and twice on the 8th, after which the dose was reduced to 10 minims. She continued to vomit once or twice every day until May 13th, when the arsenic was stopped, 240 minims having been taken in seven days. The vomiting was the only sign of intolerance. During the whole time the patient was taking the arsenic she rapidly improved and on the 13th there were no signs of chorea present. On the 14th she got up and walked about steadily and did some knitting. She was discharged quite cured on the 18th, no movements having been noticed for six days.

*Remarks by* Dr. BILLINGTON.—These four cases being fairly representative of chorea as commonly met with strongly emphasize the value of arsenic in large doses as a curative remedy and prove the efficiency of Dr. William Murray's

[2] Transactions of the Clinical Society of London, vol. xxviii., 1895, page 59.

[1] American Journal of Medical Science, May, 1896.

method of administration. In none of the cases was any other remedy used; the patient was simply kept in bed on a good diet, with the bed screened off from the rest of the ward. The two points of especial interest which the above cases present are the rapidity with which a cure was affected and the ease with which large doses of arsenic were borne and the insignificance of the symptoms of intolerance. Looking over the hospital records of cases of chorea treated as in-patients I find that the average length of stay is about six weeks, and even after much longer periods many cases have been sent away only partially cured. The average stay in hospital of the above four cases was only 18 days, and all four had shown no signs of chorea for at least five or six days before they were discharged, and all four were allowed to get up and mix with the other patients for several days before going away. This in itself is a very important advantage in a general hospital where there is always great pressure on the beds. With regard to the second point, I am fully in accord with Dr. Murray's statement that large doses of arsenic given for a short space of time in the way he recommends are much less likely to be followed by serious symptoms of poisoning than when it is given in steadily increasing doses over a much longer period of time. It is well known that the latter procedure only brings about appreciable improvement when the dose has become relatively large and the system is brought thoroughly under the influence of the drug. Of course, the treatment adopted in the above cases can only be undertaken when the patient can be kept under close observation and seen at least once a day. In such cases it would seem to be of great service and may with advantage be employed in preference to the persistent administration of small doses of arsenic, the results of which are often very tedious and unsatisfactory.

# Medical Societies.

## EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

*Exhibition of Cases and Specimens. — Residual Urine in Cases of Enlarged Prostate.—Paralysis of the Vertical Movements of the Eye.—Landry's Paralysis.*

THE ninth ordinary meeting of this society was held on July 4th, Mr. A. G. MILLER, the President, being in the chair.

Dr. NORMAN WALKER showed two cases of late Syphilides. The first was that of a woman with an affection of the skin over the nose. The diagnosis lay between it being a specific lesion or lupus erythematosus. It was even suggested that it might be a case of lupus vulgaris closely simulating lupus erythematosus. The appearance, however, of a small, sharply punched-out ulcer, the history of a sore-throat, and the rapid development of the affection (within six months), together with the fact that the patient had improved under the administration of iodide of potassium, pointed undoubtedly to its specific origin. The case illustrated the fact that specific lesions might closely simulate any other disease. The second syphilide occurred in a girl, aged nine years. A large number of crusted nummular masses were scattered over the skin of the left side of the body and thigh. Where these had healed deep round scars were left. The treatment in this case consisted in the application of mercury by means of a bib applied to the skin of the chest. No medicine was required to be taken inwardly when it was administered in this way.

Dr. WALKER also showed a man suffering from Ringworm of the Beard. An unusual deformity resulted on the healing of the pustules—a whole crop of tiny little nodules was left on the side of the face and chin.

Mr. J. W. DOWDEN showed a boy, aged five years, after operations for Tubercle of the Upper Ulnar Epiphysis. The abscess had been opened and the sinuses scraped several times. Now the wound was completely healed and perfect movement of the joint persisted.

Dr. LOGAN TURNER showed a case of Asthma in a man associated with Chronic Suppuration in the Left Frontal and Maxillary Sinuses. The first operation consisted in opening the left antral cavity, and later the left frontal sinus was opened through a very small buttonhole-shaped incision towards the inner side of the left eyebrow and curetted. Since these operations there had been no escape of pus into the nose and the asthma had greatly improved. The case was one of double interest—the co-existence of asthma along with disease of the left antrum and frontal sinus.

Dr. WILLIAM RUSSELL exhibited a man, aged 58 years, showing the typical signs and symptoms of Myxœdema—a condition which was much more rarely met with in men than in women. The scalp was completely devoid of hair and the beard and whiskers were scanty. The baldness began to show itself three years previously. The condition of mental lethargy, slowness of speech, apathetic facies, swelling of the eyelids, and malar flush were characteristic.

Dr. WILLIAM RUSSELL showed the following specimens: 1. The Brain and Heart from a case of long-standing Aphasia and Hemiplegia. The patient was a man who was said to have had a sunstroke 12 years previously to his death which was due to phthisis. In the left hemisphere a series of large cysts filled with fluid was present. These had resulted from an embolism in one of the branches of the middle cerebral artery. The heart showed the evidences of an old vegetative endocarditis specially affecting the mitral valve. These vegetations had become quite fibrous. An old aneurysm below the aortic segment was also present. 2. The Brain from a recent case of Aphasia and Hemiplegia. The lesion in this specimen occupied almost the same situation as in the preceding and was quite as extensive. A thrombosis was the cause in this case and this resulted from extensive atheroma of the cerebral vessels. The woman did not die from this disease. Thrombosis or embolism produced the same effect in the brain, a softening of the brain substance resulting, and, if the patients lived long enough, cyst formation resulted.

Dr. PEARSON (for Dr. G. A. GIBSON) exhibited: (1) a specimen showing Patency of the Ductus Arteriosus which was diagnosed during life and proved to exist after death which was due to pneumonia of the right lung; and (2) microscopic specimens of the Filaria Sanguinis in the Proboscis and in the Muscle of the Mosquito.

Mr. HARVEY LITTLEJOHN exhibited: 1. A Heart ruptured by Traumatism. The case was that of a young man who was crushed between the buffers of two railway carriages. The railway company denied any liability as there were no external signs of injury or any fracture of the ribs. The post-mortem examination revealed an extensive rupture of the right auricle fully one and a half inches in length. 2. The Stomachs from two fatal cases of Carbolic Acid Poisoning. One of these resulted from the drinking of 10 ounces of the acid and in this case the stomach showed the ordinary typical appearance, being contracted and leathery and covered with a white putty-like material. In the second case some of the crude carbolic acid used for ordinary disinfection had been drunk out of a beer bottle, and yet though this is much weaker than ordinary carbolic acid the patient died in 15 or 20 minutes. Mr. Littlejohn drew attention to the fact that the proper treatment of all of these cases of poisoning even by the corrosive poisons was the passage of the stomach-tube and the washing out of the stomach. It was better to run the risk of perforating the stomach than the greater risk of death from the action of the drug. 3. The Liver and other Organs from a case of Acute Yellow Atrophy. The case was that of a young woman who had become pregnant and whose lover had refused to marry her. She was seized with intense jaundice and vomiting. Labour ensued and she was delivered by forceps but died 36 hours later. The post-mortem examination showed the presence of numerous hæmorrhages in the skin and organs of the body. The case was one of phosphorus poisoning or acute yellow atrophy (the liver was much atrophied). Tests for phosphorus proved negative, but this did not exclude the possibility of her having swallowed the poison. Her mental condition was such as might have induced her to commit suicide. The uterus was perfectly healthy and presented the normal appearances of the organ at this period after delivery and its condition precluded the idea of acute septicæmia. The stomach was also shown to illustrate the appearance of post-mortem digestion.

Dr. R. A. FLEMING showed: (1) Tuberculous Pericarditis (a rare condition) from a man, aged 40 years, who died from general miliary tuberculosis; (2) Hearts with Patent Foramen Ovale—in one case the opening was very large;

and (3) Fatty Degeneration of the Heart Muscle from a case of Pernicious Anæmia.

Dr. ALEXANDER BRUCE exhibited the Brain from a case of Aphasia. The specimen was from a man who had suffered for a long time from right-sided hemiplegia with aphasia. He was capable of understanding what was said to him but could not read. He spoke volubly but unintelligibly. Being very musical he could sing several tunes perfectly, but the words were gibberish though the rhymes were always conserved. He also retained the power of mimicry to a remarkable extent. The post-mortem examination showed a line of softening running along the whole length of the Sylvian fissure. The superficial portion of the first temporal lobe was conserved and there was only a very slight softening in the angular and supramarginal gyri.

Mr. DOWDEN showed a specimen removed from a child, 14 months old, who had suffered during five days from sickness and vomiting. The left thigh was kept flexed and there was a swelling in the left groin of the size of a hen's egg. The bowels acted properly. On opening the sac the testicle was found with the cord twisted several times. The testicle and part of the cord were removed.

Dr. ALEXANDER JAMES exhibited a specimen from the body of a man who was supposed to have suffered from Abdominal Aneurysm. The deceased was aged 40 years; he was an old soldier, had suffered from syphilis, and had atheromatous arteries. There were a double aortic murmur and a large pulsating tumour over the abdominal aorta. The post-mortem examination showed the presence of a tumour lying over and around one side of the abdominal aorta; the growth was malignant, very vascular, and with many hæmorrhages in it. Dr. James had not made a diagnosis of aneurysm as the aorta seemed a little more fixed than usual and there was no alteration in the pulsations of the femoral arteries as shown by the sphygmograph.

Mr. A. G. MILLER read a clinical note on Residual Urine in cases of Enlarged Prostate. He stated that an enlarged prostate by itself was often enough harmless and was frequently unattended by any symptoms. The danger lay in the residual urine left in the bladder and at present the usual remedy for this was the systematic use of the catheter. Mr. Miller advocated the importance of voluntarily emptying the bladder a second time a few minutes after apparently emptying that organ. He described the case of an active man in whose bladder about three ounces of residual urine were always present. This patient by a systematic voluntary emptying of his bladder by again trying gradually decreased the amount of residual urine until, perhaps, only from two to seven drachms were found retained. He found that he did not require to get up so often during the night and generally improved greatly in health. Mr. Miller thought that usually the bladder was not emptied because a sufficient effort was not made to do so. He asked why an old man with an enlarged prostate did not empty his bladder completely. In old age the muscular power generally diminished and consequently the muscles of the bladder were feebler, and this was associated with an enlarged condition of the prostate. There were two important factors and there might be a third unrecognised factor in this causation—i.e., laziness, impatience, or indifference—which might make the patient stop emptying his bladder as soon as the feeling of distension was relieved. Mr. Miller stated that the great cause of residual urine at first was neglect to empty the bladder; later there might be inability to empty it but neglect was the initial factor. In normal conditions the emptying of the bladder took place without any effort, there being merely the relaxation of certain muscles and the contraction of others, assisted by the atmospheric pressure. The action was partly voluntary and partly involuntary, but the whole process partook more of relaxation than effort, and the relief was pleasant because it was unattended by effort. When a man began to suffer from enlarged prostate, as he had hitherto passed water without effort he consequently did not exert himself. It was much a matter of habit. The rational treatment was to break off the habit at the beginning and to establish the habit of emptying the bladder by a second trial. In advanced cases of prostatic hypertrophy the patient strained to pass water, but atony of the bladder had taken place and the effort was almost useless. The voluntary emptying of the bladder ought to be commenced early. In advanced cases the bladder become hypertrophied, enlarged, and sacculated. The conclusions arrived at were that (1) residual urine was due at first to neglect to empty the bladder; and (2) the accumulation was then due to this becoming a habit. The patient ought to be taught in the beginning of the disease to wait a minute or two after passing water and to try again. He ought to practise this until the residual urine amounted to perhaps only half an ounce. This second trial might be practised twice or thrice daily until the residual urine was got rid of and the bladder regained its tone and resumed its function. This treatment was a safe and easy method and one which might postpone the otherwise almost inevitable period of catheter life.—Dr. ALEXANDER JAMES thought that there was a strong analogy between the condition in the bladder and that found in the lungs. As age advanced the residual air in the lungs went on increasing until emphysema resulted. He stated that a singer must be taught to get rid of this residual air before beginning a new inspiration. He must end a note by compressing his chest and must not begin inspiration until the chest was empty of air.

Dr. ALEXANDER BRUCE read a note of a case of Paralysis of the Vertical Movements of the Eye with Conservation of the Lateral Conjugate Deviation without Ptosis. Cases of paralysis of conjugate deviation with retention of the up-and-down movements of the eyeball were, he said, frequent enough and the reason was well understood. Lateral conjugate deviation was effected through the sixth nucleus which supplied not merely the external rectus muscle of its own side but also indirectly the internal rectus of the opposite side, very much as the reins acted in the hands of a coachman driving a pair of horses. The sixth nucleus was at a considerable distance from the third and fourth nuclei or the other nuclei for the muscles of the eye. A lesion might consequently destroy the sixth nucleus without disturbing the other movements of the eyeball. The opposite condition, however—viz., paralysis of the upward and downward movements of the eye with conservation of the lateral movements—was extremely rare. The cases of this kind described were not more than five in number. *A priori* it might be thought to occur in certain lesions of the middle lobe of the cerebellum. Ferrier stimulated the anterior portion of the middle lobe of the cerebellum and the eyes moved upwards while the head moved backwards. Stimulation of the posterior part of this same lobe caused the eyeballs to be directed downwards and the head forwards. Stimulation still further back caused lateral movements of both eyeballs. A lesion of the upper part of the middle lobe of the cerebellum causing destruction might produce inability to raise the two eyeballs. In one of the cases related a girl lost the power of raising the eyeballs though there was no ptosis. At the post-mortem examination it was found that there was a small tumour at the upper part of the middle lobe of the cerebellum destroying the valve of Vieussens, part of the middle cerebellum lobe itself, and part of the path from the middle lobe; in other words, the centre for the upward movement of the eyeballs was destroyed. The case which Dr. Bruce himself investigated was that of a hard-working female mill-worker, aged about 45 years, who had suffered from what was said to be influenza. She had had some difficulty in walking but had recovered from this. On examination there was found to be a practically complete inability to raise the two eyes in the least and only a very feeble power in depressing the eyes. When asked to raise the eyes she merely looked straight forward; there was no ptosis. When asked to look downwards the eyes descended only very slightly. The lateral movements of the eyeballs were, however, brisk and complete, as was also at first the power of convergence, though this gradually failed. She showed a remarkable unsteadiness. She could not stand erect, but always leaned back strongly on some support as if she were voluntarily pressing backwards. When she was made to sit up straight in bed she always fell back. When made to lean forwards in bed with her hands on her knees she remained so, but whenever she lifted her hands up her back at once straightened itself. The inference was that she suffered from a tumour situated in the cerebellum as described. The patient became gradually more and more unconscious and a greater degree of blindness ensued until death supervened. There was evidently an obstruction to the outflow of cerebro-spinal fluid from the third ventricle backwards. The post-mortem examination showed the presence of a small tumour of about the size of a bean just below the pineal gland and pressing into the third ventricle. The sections through the brain showed a small lenticular tumour right in the middle line and projecting into the hinder part of the third ventricle, and growing not from the optic tract but from

the grey matter around the aqueduct of Sylvius. The symptoms must have been due to a gradual involvement of the external muscles of the eyeball but sparing those for accommodation. The sixth nucleus had been entirely unaffected. The glioma arising in the grey matter had grown backwards along the aqueduct and upwards into the third ventricle.

Dr. ALEXANDER JAMES read a description of a case of Landry's Paralysis and Dr. R. A. FLEMING gave an account of the pathological conditions present in the case. Dr. James stated that when influenza attacked the nervous system specially all kinds of effects might be produced. It might affect special nerves alone. In three patients admitted into Dr. James's ward within a few weeks of one another, all suffering from influenza, a rapidly produced paralysis extending from below upwards was noticed (Landry's paralysis). One typical case was the following. A young woman, aged 23 years, was admitted to the Edinburgh Royal Infirmary on Jan. 31st, 1900, suffering from pains in the head and back and delirium. The influenza had existed for two weeks previously to her admission and she had also suffered from the same disease seven months previously. The headache had been very severe and before her admission she had suffered much from insomnia, crying out constantly and meaninglessly, and being so noisy that her friends thought of sending her to an asylum. She was sensible at times and complained of the globus hystericus. When first examined on Jan. 31st her temperature was 103° F., her pulse was 130, and her respiration was 22. She would not answer questions, but cried out continuously for hours together. She lay on her back and did not move either her legs or arms. The urine and fæces were passed involuntarily. Sensibility to touch and pain seemed normal. The volitional power of arms and legs was lost. There was no distinct evidence of paralysis of the diaphragm. Cheyne-Stokes breathing was present while the girl was awake, but during sleep the breathing was normal. Both superficial and deep reflexes were absent and the power of swallowing was greatly impaired. Later the breathing became more rapid for perhaps half a minute and then quieter. She complained of pain behind the sternum and the upper lip was noticed not to move well as she spoke. Shortly after this her head shook violently, she became wildly delirious, and died soon afterwards. For about 10 days she exhibited the ordinary symptoms of influenza, then a paralysis gradually spreading from the lower extremities to the nervous centres in the medulla ensued.—Dr. FLEMING described the pathological conditions which were present. Excepting an incipient broncho-pneumonia near the root of the left lung no other marked visceral lesion was present. The liver and kidneys showed cloudy swelling; the spleen weighed only four and a half ounces and was acutely congested with a number of small hæmorrhages. In the brain the dura mater was firmly adherent posteriorly. The grey matter was markedly congested and showed general œdema. The pia and arachnoid mater appeared to be normal. There were no degenerations in the columns of the spinal cord and an examination of the cells gave disappointing results. In the medulla the cells were swollen and in the anterior cornua of the cord the multipolar cells were also swollen. The nuclei of these were distinctly eccentric in position and chromatolysis was present in a considerable degree in these swollen cells. The cells in the anterior horns in the lumbar and cervical regions of the cord showed a marked atrophy but stained deeply, and numerous small microscopic hæmorrhages (really microscopic diapedesis of red corpuscles) not visible to the naked eye were present.

THE ROYAL HOSPITAL FOR INCURABLES AT PUTNEY.—By the death of Mr. William Loney of St. Heliers, Jersey, this hospital becomes entitled to the residue of his estate, which it is estimated will eventually amount to about £14,000.

THE PARISH OF ST. GEORGE'S, HANOVER-SQUARE, AND THE ST. PANCRAS SCANDAL.—In consequence of the recent evidence adduced at the official inquiry into this scandal the Relief Committee of St. George's, Hanover-square, has reported that "the question of gratuities was inquired into in August, 1898, by the Schools and Asylums Committee, and in September of the same year by this committee, and on several occasions since the matter has been before other committees of the board, and we are satisfied that so far as this union is concerned no such practice exists."

# Reviews and Notices of Books.

*Refraction and How to Refract: including Sections on Optics, Retinoscopy, the Fitting of Spectacles and Eyeglasses, &c.* By JAMES THORINGTON, A.M., M.D., Adjunct Professor of Ophthalmology in the Philadelphia Polyclinic. With 200 Illustrations, 13 of which are coloured. London: Rebman Limited. 1900. 8vo, pp. 301. Price 7*s.* 6*d.*

THE number of treatises dealing with the subject of refraction since the appearance of Donders's essay on the Refraction and Accommodation of the Eye, which it is the special glory of the New Sydenham Society to have caused to be written and published, is so great, the details have been so thoroughly worked out and presented to the student in so many forms from the elaborate work of Landolt, who seems to have almost exhausted this branch of ophthalmic work and practice, to the pamphlet of a few pages, that it is difficult for any writer, whatever may be his ability, to say much that is new or to do more than refer to such recent improvements or aids to examination as may have come under his notice.

Dr. Thorington's volume commences with a series of definitions of the terms commonly used in optics, giving brief explanations of incident, emergent, reflected, refracted, divergent, and convergent rays; positive and visual foci; the formation of images; the numbering of prisms, and the forms and action of lenses. In regard to the numbering of prisms the author remarks that formerly prisms were numbered by their refracting angles, but that now other methods are in use known as Dennett's and Prentice's methods. The unit or centrad in Dennett's method is a prism that will deviate a ray of light the one-hundredth part of the arc of the radian. The radian is so much of the circumference of a circle as will equal the length of its radius of curvation. This is called the arc of the radian and equals 57·295 degrees. It is divided into 100 parts, and a prism base down at the centre of curvation that will deviate a ray of light downwards just one-hundredth part of the arc is a one centrad. M. Prentice's method, the unit or prism dioptre, is a prism that will deflect a ray of light just one centimetre for each metre of distance, that is the one-hundredth part of the radius measured on the tangent. The various forms of test cards for the determination of the sharpness of vision and the particulars of the mode of examination of the fundus by the direct and the indirect methods are fully given and there is an interesting chart showing at one view all or most of the different forms of clocks that have been proposed for the recognition of astigmia. The whole chapter on Astigmatism is well written, the author describing no less than 15 methods for its discovery. These are: corneal reflex, confusion letters, Placido's disc, stenopæic slit, astigmatic chart, the pointed line test, perforated chart or disc, Pray's letters, Schriner's test, chromo-aberration or cobalt-blue test, Thomson's ametrometer, the ophthalmometer, direct ophthalmoscopy, cylinder lenses, and retinoscopy, and yet with all these mutually supporting or corrective methods mistakes sometimes occur.

The etymology of the various terms in use is given, and in general correctly, but there are some oversights. Thus the derivation of "ametropia" is given ἀ priv., μέτρον, "a measure"; ὄφις, "sight," instead of ὤψ or ὄψις; and on the next page "hyperopia" is derived from ὑπέρ, "over"; ὤφ, eye, and the same error is repeated under "anisometropia." Pince-nez is spelt "pinc-nez." The reader will find some useful information not usually given in similar treatises in regard to bifocal lenses and spectacle frames. The book will prove serviceable to those who are dressers and house

surgeons in ophthalmic wards or to practitioners who wish to familiarise themselves with the modern methods of correcting ametropia.

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*Commercial Organic Analysis.* Vol. II., Part II. By ALFRED H. ALLEN, F.I.C., F.C.S. Third edition, with revisions and additions by the Author and HENRY LEFFMAN, M.A., M.D. Philadelphia. London: J. & A. Churchill. 1900. Pp. 330. Price 14*s*.

IT was inevitable that Mr. Allen's valuable series of volumes on Commercial Organic Analysis should sooner or later have to undergo revision. The progress of analytical chemistry is so rapid as soon to render published methods either obsolete altogether or unsatisfactory in some respect. The work as a whole, indeed, is chiefly valuable because in reality it consists of a trustworthy record of modern analytical processes as applied to those substances which come under the classification of the title of the work. Moreover, Mr. Allen's experience as an analytical and consulting chemist gives him the position of being able to confirm or disprove any given process in vogue. Thus he frequently records his own experience of various analytical processes which when he has found them unsatisfactory he has set to work upon with the view of making them more reliable and perhaps at the same time more expeditious. In this task he has met with considerable success. The volume under notice deals with the very important class of bodies—hydrocarbons, petroleum and coal tar products, asphalt, phenols, and creosote. There are, therefore, chapters in it which relate to the purity of many antiseptics employed in medicine and in sanitation. The valuation of a given antiseptic by bacteriological methods is not described, though we think a short chapter on this subject would have been useful to the practising analyst. The chapter on Petroleum and Shale Products, as well as the chapters on Coal-tar Derivatives, are most valuable. Obviously the present volume deals with the petroleum question in its relation to a legalised flash-point. Mr. Allen points out that all petroleum with a flash-point above 73° F. was by the Act of 1879, and contrary to the 1871 Act, freed from legislative restriction. The purpose of a Bill now (1899) pending in Parliament, he adds, is to substitute the accurate or close test for the inaccurate or open test in the Act of 1871 and to restore the 100° flash-point prescribed by that Act. Though this very accurately and simply defines the position we doubt whether an Act will ever be introduced which will seriously interfere with the sale of petroleum, which is being sold without restriction at the present time. Again, opinion is very much divided as to whether this interference is needed.

The work is one which is indispensable to the analyst, while chemists generally will consult its pages with advantage and confidence.

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*Micro-organisms and Fermentation.* By ALFRED JÖRGENSEN. Translated by A. K. MILLER, Ph.D., F.I.C., and A. E. LEMMHOLM. Third Edition. London: Macmillan and Co. 1900. Pp. 318. Price 10*s*.

WE have before remarked upon the extraordinary economic influence which a study of the habits of micro-organisms is bringing to bear upon several great industries; indeed, it is not too much to say that as our knowledge of fermentative processes has deepened so has sprung up a complete reformation in many industrial processes in which the action of micro-organisms is so intimately concerned. After all, the application of this kind of knowledge is quite old in principle, as must be admitted in the cases of horticulture and agriculture, for, in the last words of the volume before us, "in order to obtain the desired species of plant its seed should be sown free from the seed of all other plants." It was Hansen of the Carlsberg laboratories who first showed that by cultivating a pure yeast a uniform product, whether wine or beer, could be obtained, and the results of this important discovery are now applied on a manufacturing scale in breweries, distilleries, and in the preparation of wines from the grape and other fruit. Nor have Hansen's discoveries stopped here, for pure cultures of lactic acid bacteria have been successfully employed for the souring of cream on a large scale much in the same way as pure yeast has been employed for the manufacture of sound beer. Again, very important experiments have been obtained with encouraging results in tobacco fermentation with the view of producing a definite aroma in tobacco leaves by the addition during fermentation of pure cultures of certain species of bacteria. It is all, in a word, a question of the cultivation of species, the separation of the weed, so to speak, from the true seed. This is the alpha and omega of the work before us. Mr. Jörgensen is a director of the laboratory for the physiology and technology of fermentation at Copenhagen, and his work is therefore closely associated with the classic researches of Hansen of the Carlsberg laboratories. The present volume, it is not surprising to find, is the third edition. The work of revision has been brought into line with modern knowledge. The illustrations are 83 in number, but though true to the original subject they have no special merit of an artistic kind. The work of translation is well done, and a clearer account of the subject we have not had the pleasure of reading. The book is eminently practical in character and thus appeals, as the author states, to chemists, botanists, and biologists, and likewise to those technologists who are engaged in the fermentation industries. Mr. Jörgensen is well known as a most active worker in the direction of the biology of yeasts in its application to industrial processes. His book is therefore not only an excellent text-book for the man who requires to study the subject practically, but it is also educational in another direction, since it contains accounts of the results of his researches during recent years on many interesting aspects of the methods of cultivation. The book opens with chapters on the apparatus used in bio-technical work and an account of the methods of examination. In fine the author grapples with his subject in that clear and intelligible manner which admirably justifies the work being regarded as an excellent laboratory companion on this special branch of bacteriology which might be called "bio-technology."

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*Richter's Organic Chemistry.* Edited by Professor R. ANSCHUTZ. Authorised translation by EDGAR F. SMITH, Professor of Chemistry, University of Pennsylvania. Third edition from the eighth German edition. Vol. II., Carbocyclic and Heterocyclic Series. London: Kegan, Paul, Trench, Trübner, and Co., Limited. 1900. Pp. 671. Price 15*s*.

THERE is something to be said in favour of the classification of the carbon compounds which Victor von Richter has adopted in his classic work. In Vol. I, which was reviewed in THE LANCET of May 27th, 1899, p. 1436, the author dealt with the chemistry of the aliphatic series—that is, with the so-called fatty compounds. In the present volume he deals with carbocyclic compounds—that is, compounds containing closed carbon chains or rings. In general these are also isocyclic compounds, because they consist of rings of atoms of one or the same element, as distinguished from heterocyclic compounds which may be regarded as ring skeletons consisting of atoms of various elements. Thus we have a sharp classification of the whole of the compounds known to us which come under the generic term "organic." The alkaloids and a great number of the active principles of plants used in medicine come obviously under consideration in the present volume. The work, however, deals with theoretical rather than with practical considerations, and since von Richter is one of the greatest authorities on classification and constitution the work is one for acceptance. No subject

could be wider than that of organic chemistry, but to deal with it as the author and translator have done within the compass of the comparatively small size of these two volumes is an achievement which has its demerits as well as its merits. Every conceivable space on the pages has been utilised, the paragraphs are very much crowded, and the type generally is very small. On this account the classification of the various compounds does not appear to be as distinct as would have been the case had the volumes been larger and the printed matter less congested. The preparation of the work from the point of view of the printer must have entailed enormous labour and care with proof-sheets. The work, of course, is a standard one, considering the very high position which the author holds as one of the best exponents of the "organic" side of chemical science.

## JOURNALS.

The *Veterinarian* for July is an improvement on its predecessor of the previous month, although original articles from English practitioners are still wanting. Summaries are given from colonial reports upon Actinomycosis and Tuberculosis in New Zealand Cattle, the original work having been done by, or under the supervision of, Mr. J. A. Gilruth, M.R.C.V.S. There is an interesting extract from an American journal upon the subject of Oöphorectomy of the Mare, the operation being done per vaginam, the way now almost universally practised. The Glasgow Tramways and Omnibus Company have recently carried out some valuable investigations into the use of mallein as a curative agent in cases of glanders and their conclusions are given in full. Under the "Month's Progress" there are a number of scientific extracts, those bearing upon the latest researches into rabies raising great hope that a rapid method of forming an early and certain diagnosis after the death of the suspected animal can be made. According to work done by M. Nocard of Alfort and also by Cuillé and Vallée of Toulouse the results of the researches of van Gehuchten and Nélis must not at present be absolutely accepted, and whatever opinion is given from a microscopical examination the duty of the veterinary expert is to advise the person bitten to proceed at once to the Pasteur Institute.

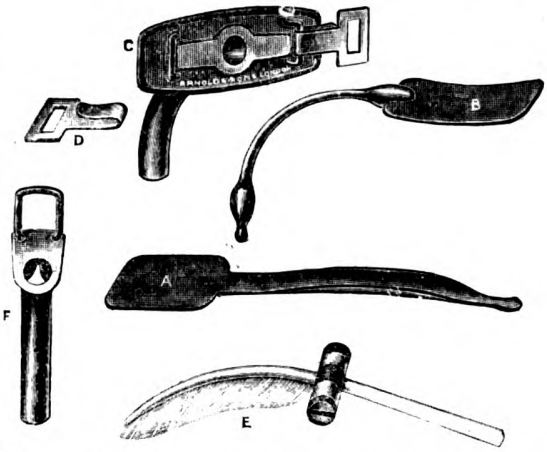
THE SANITARY INSPECTORS' ASSOCIATION.—The annual meeting of the western branch of this association held its annual meeting at Dartmouth on July 7th. The mayor read a paper on the Disposal of House Refuse and the medical officer of health (Mr. J. H. Harris), in the course of an interesting address upon the position of sanitary inspectors said that such inspectors should be officials of the Local Government Board, appointed and salaried by that body instead of the local authority, so that they could be thoroughly independent. The mayor afterwards entertained the members at dinner.

HOUSING AND IMPROVEMENT ASSOCIATION.—A conference was held recently in Hulme "to consider the housing question as affected by the past clearance of low-rented houses and the threatened closing by the Sanitary Committee of the Manchester Corporation of many more, because of their alleged unfitness for human habitation." It was attended by many representative people. Resolutions were passed appreciating the action of the City Council in declining to sanction the further closing of houses in Hulme till provision has been made for those displaced, and yet assuring the Sanitary Committee of its support if they will only build as they pull down. The landlord of some of the condemned property brought forward a very familiar argument that there had been no infectious disease in that property for 20 years, and said that "there was too much of this pulling houses down." Such statements are always made where the death-rate is highest. The conference was constituted a permanent Housing and Improvement Association, and may, it is hoped, do useful work.

# New Inventions.

## NEW TRACHEOTOMY INSTRUMENTS.

THE dilating director A is inserted by the side of the knife before the latter is withdrawn from the trachea; on turning it transversely it both dilates the wound and serves as a director for the tube. The pilot B is original only in its probe point. The outer tube C is shaped like Parker's but has larger wings. The tape holders D are hooked on to the bars of the shield before use; they prevent the tube from being coughed out but allow it free movement. The cleaner E, of stiff plumed feather, is guarded by two little ebonite bars united by rubber rings and adjusted to the length of the tube. It is easily sterilised and cannot reach the




trachea. Where an inner tube is necessary the pattern F is used. Like Durham's it is self-retaining without key. The single handle is placed in the position of greatest mechanical advantage and taken well out of the way. As there is room for a finger on either wing of the outer tube the latter can and should be fixed during the removal of the inner and is then not jogged about in the trachea, nor can it be pulled through the shield. There is nothing about the orifice of the tube or within it likely to catch dirt, every part is readily taken to pieces for cleaning, and the tapes being inserted without any disturbance of the shield are not introduced until all is clean. Messrs. Arnold and Son are the makers.

G. C. GARRATT, M.B. Cantab.,
Assistant Resident Medical Officer at the London Fever Hospital.

AT the meeting of the general committee of the French Hospital, London, on July 12th, Dr. George Ogilvie was unanimously elected physician to the hospital. The committee cordially expressed their appreciation of his services during the past year when acting for Dr. J. S. Keser during his absence abroad.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN.—A quarterly court of the directors of this society was held on Wednesday, July 11th, the acting treasurer, Dr. Potter, being in the chair. One new member was elected, the deaths of three members were reported, and three persons had ceased to be members since April last. The death of a widow who had received £35 a year since 1886 was announced. An application for grants for herself and seven children was read from a widow, and grants at the rate of £100 a year were made. The husband, who met with a fatal accident in Australia, had only been elected a member in 1891 and had paid 18 guineas in subscriptions. A sum of £1197 was voted for distribution among 48 widows, 14 orphans, and six recipients from the Copeland Fund. The expenses of the quarter were £44 12*s*. A vote of "God-speed" was passed to Dr. W. S. Church, one of the treasurers of the society, on his appointment on the commission of inquiry into the working of the hospitals in South Africa.

REPORT OF

# The Lancet Special Commission

ON THE

# METROPOLITAN WATER-SUPPLY

## *THE QUESTION OF CONTROL.*

## I.—THE HISTORY AND DEFINITION OF CONTROL.

*The Control of the Metropolitan Water-supply: Introductory; An Ideal Supply of Water for London; Recent Royal Commissions on the Metropolitan Water-supply.—Definition of Control: Control of the Water-supplies in Mediæval London; The Earliest Example of Financial Control; Control with Regard to Smoke; Competition amongst the Water Companies, "Reasonable Charges"; Complaints in Respect of Charges; Complaints in Respect of Quality; New Supply or Efficient Control?*

### THE CONTROL OF THE METROPOLITAN WATER-SUPPLY.

*Introductory.*

THERE is perhaps no matter of greater importance to the people of London than the question of their present and future water-supply. During the last few years the East London Waterworks Company have on more than one occasion failed to give an adequate supply to their customers and about two years ago the Lambeth Waterworks Company for a time also failed to give a continuous supply to the people who lived within their Parliamentary area; and although it is provided that the metropolitan water companies shall be fined should they fail to give a continuous supply, in the case of neither of these companies, as far as we are aware, has any serious effort been made to punish them for their neglect of their statutory duties. Some of the other companies have given their customers no reason to complain, but the fact that parts of the London district have been inadequately supplied has once more brought into prominence the whole question of the metropolitan water-supply as it at present exists. In the case of a rapidly spreading city like London, however, a knowledge of the present requirements is not sufficient; it is necessary to look forward to the future.

*An Ideal Supply of Water for London.*

An ideal supply of water for London would ensure that the quality of the water should be pure and derived from sources beyond the suspicion of pollution; and that the quantity should be adequate not only for domestic supplies, but sufficient to give an unstinted amount for municipal purposes. The public fountains would not be allowed to run dry, the ornamental waters of London (the Serpentine and the ponds in Regent's Park) and the canals would be clear and bright—a state of things which could only be made possible by frequent change of the water, necessarily involving a supply greatly in excess of that which obtains to-day. The Thames, also, should not be allowed to suffer from excessive depletion and it would be far better if its whole natural flow and the whole flow of the Lee were allowed to pass down to cleanse and scour out the lower reaches of the river. Whether London will ever have such a supply in the future the future alone will show. A scheme which would give such results has yet to be devised, and if it were devised it would take many years to carry out.

*Recent Royal Commissions on the Metropolitan Water-supply.*

The question as to whether the people of London should obtain their supply of drinking water from some pure source at a distance is one upon which at present there is difference of opinion and it is not likely that the question will be settled until the amount of the present sources of supply is definitely known. It cannot at present be said that we are in possession of complete and accurate information on this matter. More than one Royal Commission on the subject of the London water-supply has, it is true, investigated the subject, but it is to be feared that the results of the investigations have not been thoroughly satisfactory, although the time occupied in making them has been very considerable and the expenses incurred have been by no means small. Many of the more thoughtful people of London are regretfully coming to the conclusion that the members of the present Government who have been responsible for the appointment of the last two Royal Commissions on the metropolitan water-supply have adopted this method of proceeding rather with a view to evade for the time their own responsibilities in matters which have been "under investigation"; and the somewhat cynical remarks on the alcohol question lately made by Lord Salisbury with reference to the Licensing Commission Report have given countenance to this opinion. It is also feared that the choice of the members of a Royal Commission is sometimes made rather with a view to avoid criticism than with any hope that the members selected will seriously do their best to get to the bottom of the problem which they are called upon to solve. On such occasions "vested interests" are by no means always ignored.

Lord Balfour's Commission reported on the quantity of water which was available in the valleys of the Thames and the Lee. Unfortunately the figures which were given to the Commission have, as we shall see, proved to be erroneous. It therefore follows that the report on the available quantity of water is not entirely reliable.

Lord Llandaff's Commission were instructed to investigate the financial expediency of purchase of the metropolitan water companies' undertakings and were asked to advise as to whether it would be well for the water-supply to be placed under the care of one or more authorities, and if so, as to

what authority should be empowered to undertake the management, should the purchase of the present companies' undertakings be considered advisable. They were asked to report also as to whether any additional measures of control of the water undertakings were needed.

A great part of the evidence given at Lord Llandaff's Commission had reference to the expediency of purchase and dealt with the financial history and the present state of the eight metropolitan water companies. Anyone who may read and digest all the evidence carefully must entertain grave doubts as to the expediency of purchase from the point of view of the water consumer, even if, as Lord Llandaff's Commission assumed, the present sources of supply will be sufficient for many years to come. It may also be pointed out that the metropolitan water companies, as far as they themselves are concerned, are entirely opposed to an amalgamation of the different businesses into one organisation; that is to say, the engineers and directors of the companies who are naturally the persons most intimately acquainted with the working of their own businesses are decidedly of opinion that they are better carried on as separate entities than they would be under one central management. This in itself is a strong argument against placing the present undertakings under one management. The opinion of the engineers and directors of the water companies is formed with a thorough knowledge of all the facts of the case and there are many details of administration and difficulties of organisation known to them which are not by any means common knowledge and which are probably neither appreciated nor even suspected by some of the people who think that under any circumstances the mere possession of a number of different businesses by one Board could ensure unity of management. "Unity of management" is a well-sounding phrase, but a well-sounding phrase will not alter physical facts. The possession of the water mains of two companies by the same Board will not cause unity of pressure of the water conducted through the mains. The pressure in the pipes will depend on the same physical causes whoever be the owner of the pipes. The fact that the metropolitan water companies differ in the details of their method of supply renders it physically impossible that "unity of management" could be of any value or could become an effective fact without a great many changes in the plant and apparatus used for the distribution of the water. A real "unity of management" as understood by those who glibly use the phrase, therefore, must necessarily involve a large outlay—a point which they apparently have not grasped with equal tenacity. A careful study of the Llandaff report throws very great doubt on the financial expediency of purchase even if the Thames and Lee be able to give a sufficient supply of water. The report shows that the Commission had, as a matter of fact, considerable doubt as to the future cost of the London water-supply, and that they did not disguise from themselves the real danger of financial disaster which might ensue to the buyer. This fact is shown clearly enough by the powers for obtaining money which they suggested should be conferred on the Board which they proposed should be empowered to carry on the work of the present undertakings. No consideration of the question of a new Water Board would be complete if no account were taken of the fact that the representatives of the metropolitan counties are entirely opposed to the formation of such a Board and to the purchase of the present water companies' undertakings. There is no doubt that very considerable opposition would arise if any attempt were to be made by the Government to carry out the recommendations of the Llandaff Commission for the formation of such a Board. The question is a large and intricate one, and up to the present time there is a lack of accurate information in regard to the water-bearing capacities of parts which are within the area of Water London. It would be a waste of time for Parliament in the present state of knowledge to attempt any legislation dealing financially with the water-supply of London. It by no means follows that nothing at all should be done. On the contrary, it is highly desirable that information which is at present lacking should be collected and weighed and it is necessary that this should be done before any final decision is arrived at with regard to the future sources of the water-supply of London. This information can only be obtained by instituting additional measures of control over the metropolitan water companies. Up to the present time the companies' witnesses who have appeared before the Royal Commissions have been extremely reticent and no information has been given with regard to the effect of pumping on the wells of the companies.

## DEFINITION OF CONTROL.

In the evidence which he gave before Lord Llandaff's Commission Mr. Whitmore, Member of Parliament for Chelsea, who was also a member of the London County Council, said that he had given a great deal of attention to the question of the metropolitan water-supply, and in the course of a lengthy oration he said that he had never been able to understand what control as applied to water companies means. In the following pages an attempt has been made to explain what measures of control at present exist and what new measures of control are desirable.

Briefly stated control as applied to the metropolitan water companies means that some superior authority should have statutory powers to enforce obligations which have been imposed by law on the companies which supply the water. Powers of control already exist in regard to the financial management of the water companies, in regard to the quantity and quality of the water supplied by them, and in regard to the charges they are allowed to make to their customers. Additional powers of control have been recommended by the Balfour and Llandaff Commissions, but up to the present time the Government has made no attempt to translate these recommendations into statutory life.

### *Control of the Water-supplies in Mediæval London.*

The origin and history of the control exercised over the supply of water for the people of London can be only briefly sketched. Until the reign of Elizabeth the citizens of London obtained their water either from the river, from springs or wells, or from the public conduits. The conduits were the property of the City of London, and regulations were made by the Corporation in regard to the time and manner in which water could be obtained from them. The keepers of the conduits were removeable at the discretion of the civic authorities. A small amount of water was sold to brewers and other tradesmen, and a few noblemen had "quills" or small pipes laid on from the public mains for the supply of their houses, and for this accommodation it does not appear that any charge was made. The greater part of the water was distributed gratuitously but those who wanted it had either themselves to carry it away from the public conduits or to buy it from those who made it a business to carry it round to private houses. Briefly, at this time the control of the water-supplies in the City was in the hands of the Corporation of London.

At the end of the sixteenth century (1581) a lease of one of the arches under London Bridge was granted to an engineer for the purpose of putting up a water-wheel to pump from the Thames. This venture was subsidised by the city authorities and the water was supplied to some of their conduits. The profit of the undertaking, which was a private enterprise, was derived from the rents paid by those to whose houses the water was laid on. The price paid was a matter of bargain. Early in the seventeenth century (1613) the water of the New River was brought to London and was soon afterwards distributed to the houses of those who were willing to pay for it. In this case, also, the price paid was purely a matter of arrangement between the buyer and the seller. The city conduits were still supplied with water but the amount was inadequate, and James I., who was the chief shareholder in the New River undertaking, did not encourage either the introduction of new supplies or the repair of the conduits which belonged to the City and which served to bring the water from the distant springs. The public supplies fell off, and finally the Great Fire hopelessly damaged the leaden pipes and cisterns.[1]

### *The Earliest Example of Financial Control.*

The earliest example of control which occurs in the history of the metropolitan water companies is probably a section of an Act of the Chelsea Company (8 Geo. I., cap. 26) which prohibited dealing in the shares until the works undertaken

[1] The conduits, according to a contemporary authority, "stood like so many little but strong forts to confront and give check to the great enemy; and as enemies are wont to deal with castles, thought impregnable, by attempting to carry them by storm, so went the fire to work with these little castles of stone, which were not easy for it to burn down ..... and spoiled them, or almost spoiled them, by melting the leaden channels through which their supplies of water came."

by the company were completed, "and for preventing all sinister practices or abuses of this Act ..... it shall not be lawful for any person or persons whatsoever having any stock or share in the said undertaking to transfer or assign the same before or until such time as water be brought into the grand reservatory or reservatories intended to be at or near Oliver's Mount."

*Control with Regard to Smoke.*

It may not be without interest to note that one of the earliest measures of control contained in an Act of a metropolitan water company had reference to the consumption of smoke. The Grand Junction Waterworks Company was incorporated (51 Geo. III., cap. 169) to supply the parish of Paddington and the parishes and streets near, and a section of the Act provided that every furnace used by the company should consume its own smoke and every chimney should have its shaft at least 130 feet above the ground level, and that the smoke issuing therefrom should not at any one time exceed the quantity of smoke usually issuing from the chimneys of 24 fires for domestic uses.[2] It was provided that any chimney or furnace belonging to the company which broke this regulation might be dealt with as a common nuisance. The Act contained also provisions forbidding the erection of a furnace or steam-engine within a quarter of a mile of Edgware-road without the sanction of Mr. Edward Berkeley Portman. Another provision in the Act had reference to the water rents chargeable by the company to the effect that tenants on the Bishop of London's estate at Paddington were to have a reduction of 10 per cent. on the average rates paid by other customers.[3]

*Competition amongst the Water Companies: "Reasonable Charges."*

During the early part of the present century there was keen competition between the new companies which had then lately arisen—the West Middlesex and the Grand Junction—and the older companies—the London Bridge, the New River, the York Buildings, and the Chelsea. The new companies offered water at higher pressure and at a reduced price. The amount charged was a matter of bargain. The West Middlesex Company according to the terms of their Act were allowed only to make reasonable charges, but the meaning of the word "reasonable" was left to the discretion of the company. During the height of the competition there was an acrimonious correspondence between the New River Company and the West Middlesex Company (1811–12), but soon afterwards (1815) a Bill was introduced into Parliament for the amalgamation of these two businesses. The metropolitan water companies had found it inconvenient to undersell one another and they ultimately agreed amongst themselves to partition the town between them so that there should be no longer any active competition.

*Complaints in respect of Charges.*

The amount charged for water was immediately raised by all the companies and between the years 1810 and 1821 the increase in the water rentals amounted to about 25 per cent. A Parliamentary committee which investigated the complaints which were made on this score reported that in every instance the rentals were left solely to the agents of the different companies to charge as they should think fit and that the charges were not regulated either by the quantity of water consumed or by the distance to which it was conveyed. After the reception of the Parliamentary report in 1828 Mr. Peel, who was at the time Home Secretary, suggested that if the public were dissatisfied a new company would arise. He did not wish to encourage such a speculation; he did not indeed think it would be well for the Government to interfere or to appoint engineers to suggest the manner in which individuals (water company shareholders) should manage their own property.

*Complaints in respect of Quality.*

The prices charged by the companies formed the first ground of grievance which the public thought they had against them, but at a later period the quality of the water aroused somewhat general disapproval. The spread of cholera was distinctly traced to the water-supply and when this fact was at length thoroughly realised there was a general feeling that the public had not been well treated.

*New Supply or Efficient Control.*

The question arose as to whether a new supply should be obtained and placed under the Board of Health, but finally the action of Parliament was decided in accordance with advice given by Lord Seymour (1852) whose opinion was that all it behoved Parliament to do was to provide for an efficient control over the companies so that water should be supplied good in quality, sufficient in quantity, and at a cheap rate. The companies, he said, had better be left to act separately or in conjunction as they should find best.

The Metropolis Water Act was passed in the year 1852. Under this enactment provisions were made with regard to the quantity and quality of water which the companies were called upon to supply and during the same year arrangements were made by which within a certain time the intakes of the companies from the Thames were to be moved to points higher up the river than the places from which the water had previously been taken.

After the year 1852 the next important general Act which dealt with the metropolitan water-supply was that of 1871 which provided for the appointment of a water examiner and altered the regulations under which a continuous service of water could be insisted on by the inhabitants of the metropolitan area. In the year 1887 an Act was passed giving increased power to local authorities in regard to questions of control. These regulations are given fully in the pages which follow.

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# II.—THE EXISTING STATUTORY PROVISIONS FOR CONTROL.

*Obligations of Water Companies to Lay Mains and to Provide and Supply Water for Domestic Purposes: Supply of Water for Domestic Purposes; Provisions as to Water Rates; Provisions as to the cutting off Supplies; Constant Supply for Domestic Use; Constant Supply for Municipal Purposes.—Control now exercised in respect of Quality, &c.: Quality and Quantity, Regulations concerning Reservoirs and Aqueducts; Water Examiner; Prevention of Waste, Misuse, and Contamination of Water; Accounts and Audit of the Water Companies' Businesses; Limitation of the Dividends of the Companies.*

THE statutory provisions with regard to control of the metropolitan water companies undertakings have reference to—1. The obligation to lay mains and to provide and supply water throughout their districts. 2. The obligation to supply the water in sufficient quantity and of good quality. 3. The financial management of the undertakings and the amount which they are allowed to charge for the water which they supply.

In the account which follows of the provisions for control which now exist a statement given by Mr. E. A. Bonnor-Maurice to the Llandaff Commission has been closely followed and the sections of the general Acts of Parliament in which the provisions with regard to control are contained are in most cases quoted *in extenso*. In the case of the private Acts of the companies references are given to the sections of the Acts which bear on the subject, and in all these cases either the exact words or the gist of the section referred to are given. The interpretation of the Acts put in by Mr. Bonnor-Maurice gave rise to a little discussion between the members of Lord Llandaff's Commission and some points which were raised will be briefly noted in their proper place.

[2] It need hardly be said that since the date of that Act (1811) the regulations made with regard to smoke have been made very much more stringent.

[3] The Bishop of London was the owner of land from which water was formerly obtained by the Corporation of London for the supply of the City. The spring was situated near the Bayswater-road.

## OBLIGATIONS OF WATER COMPANIES TO LAY MAINS AND TO PROVIDE AND SUPPLY WATER FOR DOMESTIC PURPOSES.

**The companies are required to cause main pipes to be laid down and pure and wholesome water to be brought to every part of the district within the limits of supply on the requisition of so many owners and occupiers in that part of the district so that the aggregate amount of water-rates payable by them annually at rates specified in the Acts of Parliament of the respective companies shall be not less than one-third part of the expense of providing and laying down such pipes: provided that no such requisition shall be binding on the companies unless those owners and occupiers severally execute agreements binding them to take a supply for domestic purposes for three consecutive years.**

**The sections in the private Acts of the metropolitan companies which refer to the laying of mains and the provision of water are not identical. The Kent Company have no Act which contains specific provisions bearing on these matters. In the case of the other companies the provisions are as follows:—**

**The *New River* (15 & 16 Vict., cap. 160, sec. 34), the *Grand Junction* (15 & 16 Vict., cap. 157, sec. 40), the *Southwark and Vauxhall* (15 & 16 Vict., cap. 158, sec. 47), and the *West Middlesex* (15 & 16 Vict., cap. 149, sec. 33) companies have each and all the following statutory provision:—**

The company shall cause main pipes to be laid down and pure and wholesome water to be brought to every part of the district within the limits of this Act, whereunto they shall be required by so many owners or occupiers of houses in that part of the district, as that the aggregate amount of water-rate payable by them annually at the rates specified in this Act shall not be less than one-tenth part of the expenses of providing and laying down such pipes: Provided always that no such requisition shall be binding on the company unless such owners or occupiers shall severally execute an agreement binding themselves to take such supply of water for three successive years at least: Provided also that the company shall not be bound to provide or lay down any communication pipes for any such supply of water except at the expense of the persons requiring the supply: Provided also that the company shall not be bound to furnish any such supply of water or lay down any pipe for such purpose in any part of the district which part is, for the time being, supplied with water by any other company.

**The *Chelsea Company* (15 & 16 Vict., cap. 156, sections 64 and 65) and the *East London Company* (16 & 17 Vict., cap. 166, sections 57 to 61) are each controlled by the following regulation:—**

That the company shall cause main pipes to be laid down, and pure and wholesome water to be brought to every part of the district within the limits of this Act, whereunto they shall be required by so many owners or occupiers of houses in that part of the district as that the aggregate amount of water-rate payable by them annually at the rates specified in this Act shall be not less than one-tenth part of the expense of providing and laying down such pipes: Provided always that no such requisition shall be binding on the company unless such owners or occupiers shall severally execute an agreement binding themselves to take such supply of water for three successive years at least: Provided also that the company shall not be bound to provide or lay down any communication pipes for any such supply of water except at the expense of the persons requiring the supply: Provided also that the company shall not be bound to furnish any such supply of water or lay down any pipe for such purpose in any part of the district which part is, for the time being, supplied with water by any other company.

That if for twenty-eight days after demand in writing made to the company and tender made of an agreement signed by such number of owners or occupiers as aforesaid, to take and pay for a supply of water for three years or more, the company shall refuse or neglect to lay down pipes in the manner hereinbefore directed, and to provide such supply of water as aforesaid, they shall forfeit to each of such owners and occupiers the amount of rate which he would be liable to pay under such agreement, and also the further sum of forty shillings for every day during which they shall refuse or neglect to lay down such pipes or to provide such supply of water: Provided always that the company shall not be liable to any penalty for not supplying water if the want of such supply shall arise from frost, unusual drought, or other unavoidable cause or accident.

**The case of the *Lambeth Company* is somewhat different. Under the Waterworks Clauses Act, 1847, sections 35 and 36, the following clauses (which are not incorporated by the other companies) are in force:—**

The undertakers shall provide and keep in the pipes to be laid down by them a supply of pure and wholesome water sufficient for the domestic use of all the inhabitants of the town or district within the limits of the special Act, who, as hereinafter provided, shall be entitled to demand a supply, and shall be willing to pay water rate for the same, and such supply shall be constantly laid on at such a pressure as will make the water reach the top storey of the highest house within the said limits, unless it be provided by the special Act that the water to be supplied by the undertakers need not be constantly laid on under pressure, and the undertakers shall cause pipes to be laid down and water to be brought to every part of the town or district within the limits of the special Act, whereunto they shall be required by so many owners or occupiers of houses in that part of the town or district as that the aggregate amount of water rate payable by them annually at the rates specified in the special Act shall be not less than one-tenth part of the expense of providing and laying down such pipes: Provided that no such requisition shall be binding on the undertakers unless such owners or occupiers shall severally execute an agreement binding themselves to take such supply of water for three successive years at least.

If, for twenty-eight days after demand in writing, made to the undertakers, and tender made of an agreement signed by such number of owners or occupiers as aforesaid, to take and pay for a supply of water for three years or more, the undertakers shall refuse or neglect to lay down pipes in the manner hereinbefore directed and to provide such supply of water as aforesaid or as provided by the special Act, they shall forfeit to each of such owners or occupiers the amount of rate which he would be liable to pay under such agreement, and also the further sum of forty shillings for every day during which they shall refuse or neglect to lay down such pipes or to provide such supply of water: Provided always that the undertakers shall not be liable to any penalty for not supplying water if the want of such supply shall arise from frost, unusual drought, or other unavoidable cause or accident.

**During the sixtieth sitting of Lord Llandaff's Commission (which was held on March 14th, 1899) a rather interesting discussion arose with regard to the interpretation of this clause. The late Major-General Scott asked Mr. Bonnor-Maurice whether he could tell him if a water company having neglected to provide storage to meet the ordinary increase of supply which is always required in a dry summer and if in that particular summer there happened to be an unusual drought the company would be exempted under this section of the Act on a default of that kind. Mr. Bonnor-Maurice said he thought that the question would be decided according to the facts of the case. The Act said frost or unusual drought. If the company could show it was frost or unusual drought which caused the deficiency they would be exempt. "But," he added, "this question is one which is at the present moment before the law courts in the form of an application by the Hackney Vestry against the East London Company." Major-General Scott asked the witness to state what the question exactly was and the witness, in reply, said it was as to whether if the company could by reasonable forethought have foreseen the drought they ought to have prepared for it. Mr. Pember, who appeared as counsel for the East London and some of the other water companies, interposed by asking whether there would not be the question as to the exercise of reasonable foresight and if the company had taken reasonable precaution whether that plea would avail against the words of the section of the Act which had been quoted. Major-General Scott said that a company might be so much short in their provisions that they might in an ordinary dry summer fail to give a constant supply for six weeks perhaps. Assuming, then, that an unusual drought occurred in that year or in any year which caused them to fail in their supply for four months instead of six weeks, could they plead an unusual drought? Mr. Bonnor-Maurice replied that he thought the plea might be admissible, but in that case the *onus probandi* would be thrown upon the company to show that the want of the usual supply arose from unusual drought. The company were bound to take reasonable precautions to meet as far as they could what could be reasonably expected in the future. If they failed to do that there might be some question as to whether they would be liable; but if, on the other hand, they could distinctly bring themselves within the section that the want of supply arose from unusual drought, the exemption would apply. Major-General Scott said that in the supposititious case that he gave the assumption was that the reservoirs of the company were so deficient that six weeks' failure would have arisen as the result of an ordinary drought in an ordinary summer. Mr. Bonnor-Maurice said that he imagined that the company would not be able to plead that the deficiency of supply arose from an unusual drought if the failure occurred under such conditions. Lord Llandaff remarked that if he understood Major-General Scott aright the question was, supposing a company had failed in exercising reasonable forethought and then there supervened one of the statutory extraordinary contingencies, did the supervention of frost, drought, or unusual accident excuse them from what would be otherwise an undoubted default? In short, Major-General Scott was suggesting that a case of supervening drought might cover, as it were, and excuse the preliminary default. Mr. Pember said that if he were the judge he should say that he was not going to try the issue of what would have happened if there had not been a drought. There was no drought, and what they wanted was the real exciting cause. Mr. Pope, Q.C., who appeared for the New River Company and the Southwark and Vauxhall Company, pointed out that the words of the section "or other unavoidable cause or accident" referred, he thought, to the provisions expressed. It must be a default which could not reasonably**

be provided against. For example, in the case of a culvert which a company were bound to provide under a railway the culvert must be sufficient to take all reasonably anticipated floods, but if a flood greater than ever before known should arise and sweep away the whole of the culvert there was no liability on the part of the company because the accident was unavoidable, inasmuch as the flood was greater than it was reasonably necessary to provide against. Mr. Pember said that he might have to argue a case like that which had been referred to by Major-General Scott, and Lord Llandaff remarked that he thought the Commission could not decide these nice questions on points of law.[4]

In their report, however, the Commission advise (p. 71) that "it should be made clear that 'frost, unusual drought, or unavoidable accident,' would not excuse a failure of supply, if it be shown that the failure occurred because the works of the company were not in an efficient condition and have not sufficient reserve capacity of supply."

*Supply of Water for Domestic Purposes.*

At the request of any owner or occupier (who shall have laid the communication pipes between the companies' mains and the premises to be supplied, and paid or tendered the water rate) of any house in any street within the limits of supply in which any pipe of a company shall be laid, or of any person who is entitled to demand a supply of water for domestic purposes, the company is required to furnish to such person a sufficient supply of water for his domestic purposes, at the rates specified in the Acts of Parliament of the respective company.

The special obligations of the metropolitan water companies to furnish a supply of water to the inhabitants of their authorised areas of distribution are as follows:—

*Lambeth* (11 Vict., cap. 7, sec. 37).—And be it enacted that the company shall, at the request of the owner or occupier of any house or part of a house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic uses, at the rates hereinafter specified.

*Chelsea* (15 & 16 Vict., cap. 156, sec. 60).—That the company shall, at the request of the owner or occupier of any house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic purposes, at the rates hereinafter specified.*

*New River* (15 & 16 Vict., cap. 160, sec. 35).—That the company shall, at the request of the owner or occupier of any house or part of a house in any street within the limits in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person, a sufficient supply of water for domestic purposes at the rates hereinafter specified.*

*Southwark and Vauxhall* (15 & 16 Vict., cap. 158, sec. 53).—That the company shall, at the request of the owner or occupier of any house or part of a house occupied as a separate tenement in any street within their limits in which any main or service pipe of the company shall be laid, or of any other person who, under this Act, shall be entitled to demand a supply of water for domestic purposes, furnish to such person, by means of communication pipes and other necessary and proper apparatus, to be provided, laid down, and maintained at the cost of such person, a sufficient supply of water for his domestic purposes, at a rate per centum per annum on the annual value of the house not exceeding five pounds.*

*West Middlesex* (15 & 16 Vict., cap. 159, sec. 39).—That the company shall, at the request of the owner or occupier of any house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic purposes at the rates hereinafter specified.*

*Grand Junction* (15 & 16 Vict., cap. 157, sec. 46).—That the company shall, at the request of the owner or occupier of any house in any street within the limits of this Act in which any pipe of the company shall be laid, or of any person who, under the provisions of this Act or any Act incorporated therewith, shall be entitled to demand a supply of water for domestic purposes, furnish to such owner or occupier or other person a sufficient supply of water for their domestic purposes at the rates hereinafter specified.*

*East London* (16 & 17 Vict., cap. 166, sec. 74).—That the company shall, at the request of the owner or occupier of any house, or any part of a house occupied as a separate tenement, in any street within their limits in which any main or service pipe of the company is or shall be laid, or of any person who, under this Act shall be entitled to demand a supply of water for domestic purposes, furnish to such person by means of communication pipes and other necessary and proper apparatus to be provided, laid down, and maintained at the cost of such person, a sufficient supply of water for his domestic purposes, at a rate per centum per annum on the annual value of the house not exceeding .....*

*Kent* (27 & 28 Vict., cap. 146, sec. 28).—The company shall, at the request of the owner or occupier of any house or part of a house in any street in which from time to time any pipe of the company is laid, or of any person who, under the provisions of this Act is entitled to demand a supply of water for domestic purposes, furnish to him a sufficient supply of water for domestic purposes at rates not exceeding the following .....*

* In every case the maximum legal water-rate which may be charged is named in the Act.

It is, however, provided that the companies shall not be bound to supply water under pressure at any higher level than the levels fixed by the Acts of Parliament of the respective companies.

The maximum height to which each of the metropolitan water companies is bound to supply water, and the Act of Parliament under which each provision is made is given below.

*Chelsea* (15 & 16 Vict., cap. 156, sec. 54).—To a height which is ensured by a pressure in a reservoir, the level of which shall not be less than 148 feet above Trinity high-water mark.

*East London* (Sch. B of the Metropolis Water Act, 1871, and sec. 15 of the Metropolis Water Act, 1852).—40 feet above level of pavement nearest the point at which supply shall be required.

*Grand Junction* (15 & 16 Vict., cap. 157, sec. 41).—150 feet above the level of high-water mark at Vauxhall Bridge, computed according to the Trinity standard.

*Kent* (Sch. B of the Metropolis Water Act, 1871, and sec. 15 of the Metropolis Water Act, 1852).—180 feet above Trinity high-water mark.

*Lambeth* (11 Vict., cap. 7, sec. 35).—To 150 feet above Trinity high-water mark of river Thames.

*New River* (15 & 16 Vict., cap. 160, sec. 28).—70 feet in height from the pavement of the street in which the house supplied is situate.

*Southwark and Vauxhall* (15 & 16 Vict., cap. 158, sec. 48).—150 feet above the level of high-water mark at Vauxhall Bridge, computed according to the Trinity standard.

*West Middlesex* (15 & 16 Vict., cap. 159, sec. 34).—200 feet above the level of Trinity high-water mark at Hammersmith Bridge, computed according to the Trinity standard.

The companies are not bound to furnish a supply of water or to lay down any pipe for that purpose in any part of a district which is for the time being supplied with water by any other company, but this exemption does not apply in the cases of the Kent and Lambeth companies.

The statutory provisions with regard to the supply of water are contained in the Waterworks Clauses Act (1847) and are as follows (sections 43 and 53):—

If, except when prevented as aforesaid, the undertakers neglect or refuse to fix, maintain, or repair such fireplug, or to furnish to the Town Commissioners a sufficient supply of water for the public purposes aforesaid, upon such terms as shall have been agreed on or settled as aforesaid, or if, except as aforesaid, they neglect to keep their pipes charged under such pressure as aforesaid, or neglect or refuse to furnish to any owner or occupier entitled under this or the special Act to receive a supply of water during any part of the time for which the rates for such supply have been paid or tendered, they shall be liable to a penalty of ten pounds and shall also forfeit to the Town Commissioners, and to every person having paid or tendered the rate, the sum of forty shillings for every day during which such refusal or neglect shall continue after notice in writing shall have been given to the undertakers of the want of supply.

Every owner and occupier of any dwelling-house or part of a dwelling-house within the limits of the special Act shall, when he has laid such communication pipes as aforesaid, and paid or tendered the water-rate payable in respect thereof, according to the provisions of this and the special Act, be entitled to demand and receive from the undertakers a sufficient supply of water for his purposes.

*Provisions as to Water-rates.*

The rates chargeable by the water companies are fixed by the Acts of Parliament of the companies and are based upon the annual value of the premises, with fixed maximum charges in addition for water-closets, baths, &c. These rates and charges vary in the case of the different companies. Outside the metropolis the rates have been charged upon the annual value of the premises; in cases of difference of opinion as to what is the annual value the matter may be determined by two justices (section 68 of the Waterworks Clauses Act, 1847). This provision is as follows:—

The water-rates, except as hereinafter and in the special Act mentioned, shall be paid by and be recoverable from the person requiring, receiving, or using the supply of water, and shall be payable according to the annual value of the tenement supplied with water, and if any dispute arise as to such value the same shall be determined by two justices.

A dispute which arose as to the interpretation of this section led to the celebrated case of Dobbs *versus* The Grand Junction Water Works Company. (L. R. 9 App. Cas. 49; 53 L. J. Q. B. 50; 49 L. T. (N.S.) 541; 32 W. R. 432; 48 J. P. 5.) It was decided that the value of the premises was to be ascertained on the same principles as those which apply to the ascertainment of the rateable value for the purposes of

[4] Minutes of Proceedings taken before the Royal Commission on London Water Supply, Tuesday, March 14th, 1899. Sixtieth day. Dyson and Co., 9, St. George-street, Westminster, S.W. Pp. 470–473. These are the shorthand notes taken at the sittings of the Llandaff Commission, and supplied to the Commission (gratuitously) and to the water companies and "parties interested" on payment of a proportional part of the expenses. The notes were at the sittings of the Commission commonly referred to as the "County Council Print."

**the poor-rate. In the year 1885 the Water Rate Definition Act (48 & 49 Vict., cap. 34, sec. 1) was passed and it was enacted that the words "annual value of the tenement supplied with water" shall mean "rateable value as set from time to time by the local authority as duly constituted."**

**Owners of property in the districts supplied by the East London, Grand Junction, Kent, Southwark and Vauxhall, and West Middlesex companies are, under the special Acts of those companies, liable to pay the water-rate where the value of the premises does not exceed £20 per annum. In the case of the Chelsea, the New River, and the Lambeth companies owners of property are liable to pay the water-rate where the value of the premises does not exceed £10 per annum. This is provided by the Waterworks Clauses Acts, 1847, section 72 of which is as follows:—**

The owners of all dwelling houses or parts of dwelling houses occupied as separate tenements, the annual value of which houses or tenements shall not exceed the sum of ten pounds, shall be liable to the payment of the rates instead of the occupiers thereof; and the powers and provisions herein or in the special Act contained for the recovery of rates from occupiers shall be construed to apply to the owners of such houses and tenements; and the person receiving the rents of any such house or tenement as aforesaid from the occupier thereof, on his own account, or as agent, or receiver for any person interested therein, shall be deemed the owner of such house or tenement.

**Water-rates are payable quarterly in advance under a provision of the Waterworks Clauses Act, 1847, of which section 70 is as follows:—**

The rates shall be paid in advance by equal quarterly payments, in England or Ireland at Christmas Day, Lady Day, Midsummer Day, and Michaelmas Day, and in Scotland at Martinmas, Candlemas, Whitsuntide, and Lammas, and the first payment shall be made at the time when the pipe by which the water is supplied is made to communicate with the pipes of the undertakers or at the time when the agreement to take water from the undertakers is made.

**Payment of water-rates may be enforced by cutting off the supply and recovery of the amount due in a court of summary jurisdiction. This is provided under the Waterworks Clauses Act, 1847, section 74 of which is as follows:—**

If any person supplied with water by the undertakers, or liable as herein or in the special Act provided to pay the water-rate, neglect to pay such water-rate at any of the said times of payment thereof, the undertakers may stop the water from flowing into the premises in respect of which such rate is payable by cutting off the pipe to such premises or by such means as the undertakers shall think fit, and may recover the rate due from such person, if less than twenty pounds, with the expenses of cutting off the water and costs of recovering the rate, in the same manner as any damages for the recovery of which no special provision is made are recoverable by this or the special Act; or if the rate so due amount to twenty pounds or upwards the undertakers may recover the same with the exception of cutting off the water by action in any court of competent jurisdiction.

*Provisions as to Cutting Off Supplies.*

**In the cases in which the owner and not the occupier is liable whether by law or by agreement with the water company to pay the water-rate the companies are not allowed to cut off the water-supply for non-payment of water-rate, but they may sue the owner or, failing him, the occupier, and the rate may become a charge on the premises. Section 4 of the Water Companies (Regulation of Powers) Act, contains this provision.**

"Every water company which is a trading company supplying water for profit and to which any of the provisions of the Waterworks Clauses Act, 1847, have been or shall be made applicable by any special Act or provisional Order confirmed by Parliament."

**Water companies are required to give notice in writing to the sanitary authority within 24 hours of their having cut off the water-supply to any inhabited dwelling-house, subject to the payment of a penalty of £10. The Public Health (London) Act, 1891, section 49 (54 & 55 Vict., cap. 76), provides that—**

1. Where a water company may lawfully cut off the water-supply to any inhabited dwelling-house and cease to supply such house with water for non-payment of water-rate or other cause, the company shall in every case, within twenty-four hours after exercising the said right, give notice thereof in writing to the sanitary authority of the district in which the house is situated.
2. Any company which neglects to comply with the foregoing provision shall be liable to a fine not exceeding ten pounds, and it shall be the duty of the sanitary authority to take proceedings against any company in default.
3. This section shall apply to every water company which is a trading company supplying water for profit.

**Unless an incoming tenant shall have agreed with the outgoing tenant who is in default in respect of the water-rate, to pay such arrears the companies are not allowed to require payment of arrears of water-rate from the incoming tenant as a condition of supply, but must supply water to the incoming tenant upon being required by him so to do. This is provided for by the Metropolis Water Act, 1871, section 48, which is as follows:—**

In case any consumer leave the premises where water was supplied to him without paying to the Company the rate due from him, the Company shall not require from the next tenant of the premises payment of the arrears so left unpaid, unless the incoming tenant agreed with the defaulting consumer to pay the arrears, but the Company shall, notwithstanding any such arrears, supply water to the incoming tenant, on being required by him so to do.

**The obligation under which the companies are placed to lay mains and supply water may be enforced in a court of summary jurisdiction by the recovery of penalties, at the suit of the owner or occupier, under the provisions of the Waterworks Clauses Act, 1847, and the Acts of Parliament of the companies, or by the recovery of penalties on the order of the Railway and Canal Commission under the Metropolis Water Act, 1897, at the suit of the consumer or of the local authority; a local authority may also aid a consumer to take proceedings and may pay any legal expenses (if necessary).**

*Constant Supply for Domestic Use.*

**The metropolitan water companies are required to provide and keep throughout their water limits a constant supply of pure and wholesome water sufficient for the domestic purposes of the inhabitants within such limits constantly laid on at such pressure as will make the water reach the top storey of the highest houses within such limits (but not exceeding the levels prescribed by the Acts of Parliament of the respective companies) and, subject to the Acts of Parliament of the respective companies as amended by the Metropolis Water Act, 1871, to give to the inhabitants a constant supply of water for domestic purposes. By the Metropolis Water Act, 1871, the companies are, under a penalty of £200 and a further penalty of £100 per month, bound to provide a "constant supply" of pure and wholesome water within the area of the metropolis if required by the metropolitan authority or by the Local Government Board at such times as may be fixed by the Local Government Board who may in certain conditions extend such times, but the companies are not liable to penalties if the want of supply arises from frost, unusual drought, or other unavoidable cause or accident.**

**The statutory provisions are contained in the Metropolis Water Act, 1871 (34 & 35 Vict., cap. 113), sections 7, 8, 11, 13, 15, 16, 44, and 45). These provisions are as follows:—**

Subject to the provisions of this Act, every Company may, and from and after the expiration of eight months from the passing of this Act every Company shall, when required so to do, in the manner directed by this Act, provide and keep throughout their water limits, or throughout such parts of such limits as they may be required in manner aforesaid, a constant supply of pure and wholesome water sufficient for the domestic purposes of the inhabitants within such water limits, constantly laid on at such pressure as will make such water reach the top storey of the highest houses within such water limits (but not exceeding the level prescribed by the special Act) of such Company (which supply is in this Act referred to as a "constant supply"); and every such Company shall, subject to the provisions of the special Act as the same are amended by this Act, give and continue to give to such inhabitants a constant supply for domestic purposes in manner prescribed.

The Metropolitan Authority shall, whenever they are of opinion that there should be in any district a constant supply, make application to the Company within the water limits in which such districts is situate, requiring a constant supply in such district, and any Company may without any such application propose to the Metropolitan Authority to give a constant supply in any district.

It shall be lawful for the Board of Trade at any time to require a constant supply to be provided in any district by the Company within the water limits of which such district is situate upon complaint made, and in case it appears to such Board, after due inquiry:

That the Metropolitan Authority refuses to make or unreasonably delay making application for such constant supply, or

That by reason of the insufficiency of the existing supply of water in such district, or the unwholesomeness of such water in consequence of its being improperly stored, the health of the inhabitants of such district is, or is likely to be, prejudicially affected.

Where a constant supply is required in any district and the Company is unable from want of funds or other cause of any kind to execute all the necessary works within the time prescribed by this Act the Board of Trade, if they think fit, may extend the time for the giving of such supply generally or may extend the time and direct such supply to be given at different times in succession to the several parts of such district in such a manner as may be found most convenient: Provided that application be made by the Company for such extension of time within one month after the notice referred to in the last preceding section has been served upon them.

Notwithstanding anything in this Act a Company shall not be subject to any liability for not giving a constant supply if the want of such supply arises from the frost, unusual drought, or other unavoidable cause or accident.

Any Company which violates, refuses, or neglects to comply with any of the preceding provisions of this Act shall be liable to a penalty not exceeding two hundred pounds and to a further penalty not exceeding one hundred pounds for every month during which such violation or refusal or neglect to comply with the said provisions continues after they shall have received notice in writing from the Board of Trade (Local Government Board) to discontinue such violation, refusal, or neglect as aforesaid.

Every penalty incurred by any Company by reason of non-compliance

with any of the provisions of this Act shall go and belong to the Metropolitan Authority within the jurisdiction of which the same has been incurred, and may be sued for and recovered by such Metropolitan Authority in any court of competent jurisdiction for the recovery of any ordinary simple contract debt of the like amount, and shall be paid and applied as such Metropolitan Authority shall from time to time direct.

Every such penalty shall be borne and paid (to the satisfaction of the auditor appointed as in this Act provided) exclusively by and out of the divisible profits of the Company by whom the penalty is incurred, and by way of reduction of dividend.

Except as is by the next preceding section expressly provided, all penalties under this Act may be sued for and recovered in the "Court of Summary Jurisdiction."

**The metropolitan authority is, in the metropolis, the London County Council; in the city, the corporation; in the urban sanitary districts outside the metropolis, the urban sanitary authority; and in rural parishes, the vestries.**

**Under the Metropolis Water Act, 1897, the statutory area of constant supply is extended so as to include the whole of the authorised area of the companies (Water London). The council of the county or of the county borough are the "Metropolitan Authority" empowered to exercise the control for which provision is made in the Act.**

**These obligations may be enforced in the usual way (see sections 44 and 45 of the Act of 1871) as to recovery of penalties, and in addition the remedies under the Metropolis Water Act, 1897, may be put in force by any consumer, or local authority, by obtaining through the Railway and Canal Commission the determination of any question of interest to water consumers as to the quantity or quality of water supplied or the charges therefor. (See sections of the Metropolis Water Act, 1897, quoted in the next column.)**

*Constant Supply for Municipal Purposes.*

**By the Waterworks Clauses Act, 1847, sections 37 to 43, the companies are under the obligation to fix fire-plugs within certain prescribed distances, and unless prevented as aforesaid to keep in all pipes to which a fire-plug is fixed a sufficient quantity of water for: (1) cleansing sewers and drains; (2) cleansing and watering streets; (3) supplying public pumps, baths, and washhouses; and (4) extinguishing fires.**

**The supply for public purposes is settled, in case of dispute with the local authority, by two justices or in London by a stipendiary magistrate (section 37). The supply for extinguishing fires is, and always has been, supplied without payment; the London County Council have succeeded to the duties of the late Metropolitan Board of Works and within the metropolis they make regulations as to the form, dimension, &c., of fire-plugs under the Metropolitan Fire Brigade Act, 1865, section 32, and as to the form, dimensions, position, number, &c., of the hydrants, under the Metropolis Water Act, 1871, section 34, which is as follows:—**

Section 32 of the Metropolitan Fire Brigade Act, 1865, shall operate, subject and according to the provisions following; (that is to say,)

In that section and in this provision the term "fire-plug" and the term "plug" shall include hydrant and all other apparatus necessary or proper in connexion with the Company's pipes for supply of water in case of fire:

Where a Company give a constant supply in any part of their water limits they may, if they think fit, give notice thereof to the Metropolitan Board of Works:

If the Metropolitan Board of Works do not within two months after receipt of any such notice specify, as regards that part of the Company's water limits, what plugs for supply of water in case of fire, at what places, of what dimensions, and in what form they require the Company to provide, then, at any time after the expiration of that time, the Company may, if they think fit, provide in and for that part of their water limits such plugs for supply of water in case of fire, at such places, of such dimensions, and in such form as to the Company seem necessary or proper:

Thereupon, as regards that part of the Company's water limits, the Company shall be deemed to have fully discharged all obligations imposed on them by the said section 32:

All plugs provided by a Company in pursance of this provision may, for the purposes of the fire brigade, be used as if they had been provided on the requisition of the Metropolitan Board of Works under the said section 32.

The providing of plugs by a Company under this provision shall be at the expense of the Metropolitan Board of Works, and the costs, charges, and expenses of the Company in or about the providing of the same shall be paid to the Company by the Metropolitan Board of Works, on demand, out of their general rate, and in default may be sued for and recovered, with costs, by the Company in any court of competent jurisdiction for the recovery of any ordinary simple contract debt of the like amount.

**The provisions of the Metropolis Water Act, 1897, apply an additional method of procedure in case of the failure of any statutory duty by the companies, and facilitate the investigation of any cause of complaint whether in regard to the quality or quantity of the water or of the charges imposed. (Section 1, sub-sections (1), (2), and (3).)**

**The sections of this Act which apply to these matters are given below.**

Any water consumer or any local authority may complain to the Railway and Canal Commission that any of the metropolitan water Companies has failed to perform some statutory duty of the Company, and the Commission may hear and determine that complaint and if satisfied of such failure order the Company within the time limited by the order to fulfil the duty, and may, if they think fit, by any such order, impose any penalty for such failure which can be imposed under any Act, and enforce any such order in like manner as any other order of the Commission.

If at any time complaint as to the quantity or quality of the water supplied by any of the metropolitan water companies for domestic use is made to the Railway and Canal Commission by any water consumer or local authority, the Commission may hear and determine such complaint, and if satisfied that the complaint is well founded, may order the Company, within such reasonable time as is specified in the order, to remove the ground of such complaint, and may enforce such order in like manner as any other order of the Commission, and may award damages to the complainant.

All enactments relating to the Railway and Canal Commission (except section 2 of the Railway and Canal Traffic Act, 1894, which restricts the power to award costs) shall, with the necessary modifications, apply to the Railway and Canal Commission for the purpose of their jurisdiction under this Act.

CONTROL NOW EXERCISED IN RESPECT OF QUALITY, QUANTITY, FINANCE, &C.

**The Metropolis Water Acts, 1852 and 1871, conferred to the Board of Trade powers of control in respect of the quality and the quantity of water to be supplied and in respect to the financial proceedings of the companies. These powers, under the Public Health Act, 1872, were transferred to the Local Government Board. Under the Metropolitan Water Act, 1897, the Railway and Canal Commission are empowered to make orders to compel the companies to perform any of their statutory duties.**

*New sources of supply.*—**No company is allowed to resort to any new source of supply until it has given three months' previous notice in writing to the Local Government Board, who may appoint an inspector to visit and inspect any sources specially authorised by Parliament, and to see whether the directions contained in the special Act have been complied with. In regard to new sources not specially authorised by an Act of Parliament, the Board's inspector must examine whether they are capable of supplying good and wholesome water for domestic purposes. On his report the Local Government Board are to certify their approval or disapproval of sources not so specially authorised; and if disapproved the company is not allowed to use the new source.**

*Quality and Quantity: Regulations concerning Reservoirs and Aqueducts.*

**Provision is made in sections 2, 3, and 4 of the Metropolis Water Act, 1852, that only covered reservoirs shall be used for the storage of filtered water at any place within five miles of St. Paul's Cathedral; and that covered aqueducts only shall be used for the filtered water and for the filtration of water (other than that derived from wells) used for domestic purposes.**

**The following are the statutory provisions of control in regard to the filtration, storage, and conveyance of water; they apply to all the metropolitan companies.**

*Efficient filtration.*—**Every company shall effectually filter all water supplied by them within the metropolis for domestic use before the same shall pass into the pipes for distribution, excepting any water which may be pumped from wells into a covered reservoir or aqueduct without exposure to the atmosphere, and which shall not be afterwards mixed with unfiltered water. (15 & 16 Vict., cap. 84, sec. 4.)**

*Storage reservoirs.*—**Every reservoir within a distance in a straight line from St. Paul's Cathedral, in the City of London, of not more than five miles in which water for the supply for domestic use of the metropolis or any part thereof is stored or kept by any company shall be roofed in or otherwise covered over. (15 & 16 Vict., cap. 84, sec. 2.)**

*Pipes and aqueducts.*—**No water shall be brought or conducted within the metropolis by any company for the purpose of domestic use otherwise than through pipes or through covered aqueducts, unless the same shall be afterwards filtered before distribution. (15 & 16 Vict., cap. 84, sec. 3.)**

**These provisions may be enforced by a penalty of £200 and £100 per month after receipt of notice from the Local Government Board or by order of the Railway and Canal Commission.**

**Under the provisions of the Metropolis Water Act of 1852, on the receipt of a complaint from 20 householders as to the quality or quantity of water for domestic use, the Local Government Board may appoint a competent person to inquire and report, with powers to inspect and examine**

the waterworks. If he reports that the complaint is well founded the Local Government Board are authorised to give notice to the company, which must, within reasonable time, remove the grounds of complaint.

The provisions of the Metropolis Water Act, 1852, which bear on these points, are given below.

If at any time complaint as to the quantity or quality of the water supplied by any Company for domestic use be made to the Board of Trade (Local Government Board) by memorial in writing signed by not less than twenty inhabitant householders paying rents for and supplied with water by the Company, it shall be lawful for the Board of Trade (Local Government Board), at any time within one month after the receipt of such complaint, to appoint a competent person to inquire into and concerning the grounds of such complaint, and to report to the Board of Trade (Local Government Board) thereon.

The person so appointed as aforesaid shall, within three days after such appointment, give notice thereof in writing to the Company, and after such notice as aforesaid, he shall have power to inspect and examine the waterworks of the Company, and to inquire into and concerning the grounds of such complaint; and the Company and their officers shall afford all reasonable facilities for such inspection, examination, and inquiry.

Any person obstructing such inspector in the due prosecution of such inspection, examination, or inquiry, shall forfeit and pay any sum not exceeding ten pounds.

If after receipt of such report it shall appear to the Board of Trade (Local Government Board) that the said complaint is well founded, the Board of Trade (Local Government Board) shall give notice thereof in writing to the Company.

After the receipt of such notice the Company shall, and they are hereby required, within a reasonable time to remove the ground of such complaint.

Any Company which shall violate, refuse, or neglect to comply with any of the provisions hereinbefore contained shall forfeit to Her Majesty the sum of two hundred pounds, and the further sum of one hundred pounds for every month during which they shall continue to violate or to refuse or neglect to comply with the same after they shall have received notice in writing from the Board of Trade to discontinue such violation, refusal, or neglect as aforesaid.

The above powers of the Act of 1852 were extended in the year 1871, and now the Local Government Board may on their own initiative institute an inquiry into the quality of water at any time, with similar powers as if a complaint had been made. The Metropolis Water Act, 1897, extends these powers as to complaint to any consumer or local authority, and any local authority may aid any consumer in its district by prosecuting a defaulting company.

The following provisions of the Metropolis Water Act (1871) refer to these matters:—

The Board of Trade (Local Government Board) may at any time, if and when they think fit, appoint a competent person to inquire into, and report on, the quality of the water furnished by any Company, notwithstanding that no complaint has been made and signed by twenty inhabitant householders, as prescribed by section 9 of "The Metropolis Water Act, 1852," and sections 10, and 11, and 13, and the other provisions of that Act shall apply in every respect as if such person were appointed under section 9 of that Act and as if any matter reported to the Board of Trade (Local Government Board) as requiring alteration on the part of a Company had been the subject of a complaint by such householders as aforesaid.

*Water Examiner.*

Under section 36 of the Act of 1871 the Board of Trade appointed a Water Examiner—a competent and impartial person with full powers to examine the water, and to see whether it is efficiently filtered, and furnish reports, with information as to the supply, works, &c., of each company. These reports are circulated, and anyone interested can obtain them either directly or through any bookseller from Eyre and Spottiswoode, East Harding-street, Fleet-street, E.C. The reports are issued monthly and the price is 6*d*. per copy.

The provisions under which the Water Examiner is appointed are as follows:—

There shall be a Water Examiner, being a competent and impartial person, from time to time appointed by and removeable by the Board of Trade (Local Government Board), who shall from time to time, in such manner as the Board of Trade (Local Government Board) direct, examine the water supplied by any Company in order to ascertain whether or not the Company have complied with the requirements of section 4 of the Metropolis Water Act, 1852, and shall from time to time report the results of his several examinations to the Board of Trade (Local Government Board); and the Board of Trade (Local Government Board) shall send a copy of every such report to the Company to which the same relates, and the Company may, if they think fit, on each occasion of such examination be represented thereat by some officer, but such officer shall not interfere in the examination.

There shall be paid to such Water Examiner such remuneration by the Companies and in such proportions as such Board appoints.

*Constant supply.*—It has already been stated that the local authority, the Local Government Board, or any water consumer, can enforce a constant supply (see p. 187).

The method of dealing with a peccant water company has, it should be noted, been greatly simplified by the Metropolis Water Act, 1897. Under the provisions of this Act any aggrieved water consumer can appeal directly to the Railway and Canal Commission.

*Prevention of Waste, Misuse, and Contamination of Water.*

Such regulations as may be found necessary for the prevention of waste, misuse, undue consumption, or contamination of water, and as to prescribing the necessary fittings, have to be made by any company with the approval of the Local Government Board, and on failure by any company to make or, when required by the metropolitan authority or by 10 consumers, to alter or repeal such regulations, the Board may appoint a competent impartial person of engineering knowledge and experience to make, alter, or repeal such regulations or to advise as to their being sufficient, and on his recommendation the Local Government Board may make, alter, or repeal, and call in special expert assistance, and the metropolitan authority has the right to be heard before any regulations are made, repealed, or altered, and notice thereof has to be given to such authority. The companies are required also to keep and supply maps of their district and pipes.

The statutory provisions for these regulations are contained in the Metropolis Water Act, 1852, section 26, and the Metropolis Water Act, 1871, sections 17, 18, and 19, which are as follows:—

It shall be lawful for any Company from time to time with the approval of the Board of Trade to make such regulations as shall be necessary or expedient for the purpose of preventing the waste or misuse of water and therein amongst other things to prescribe the size, nature, and strength of the pipes, cocks, cisterns, and other apparatus to be used and to interdict any arrangement and the use of any pipes, cocks, cisterns, or other apparatus which may tend to such waste or misuse as aforesaid.

Every Company shall, within six months after the passing of this Act, make regulations for the purpose for which regulations may be made under the authority of section 26 of the Metropolis Water Act, 1852, and the provisions of that section shall apply also to the preventing of undue consumption or contamination of water.

Any Company, if it thinks fit, or if requested so to do by the Board of Trade, may repeal or alter any of the regulations made for the purposes aforesaid, or make new regulations instead of any of the same.

In case any Company does not make regulations within the time specified in this Act, or in case any Company, on being requested in writing by the metropolitan authority, or by any ten consumers of the water supplied by that Company, to repeal or alter any of the regulations for the time being in force, or to make new regulations instead of any of the same, refuses so to do, the Board of Trade may, if they think fit, appoint a competent and impartial person of engineering knowledge and experience to report to them as to such regulations as may be necessary for the execution of this Act, or as to the expediency of altering or repealing such regulations, or of making new regulations, in conformity with such request as aforesaid, and on the report of such person the Board of Trade may make such regulations, repeal, or alterations as they think fit.

*Accounts and Audit of the Water Companies' Businesses.*

Every company is required to make up and forward to the Local Government Board, to the town clerk of the City of London, and to the clerk to the County Council, and to keep for sale to any applicant, statements of account in the form and containing the particulars prescribed by the Local Government Board, and that Board is required to appoint a competent and impartial auditor (at such remuneration to be paid by the companies as the Board may fix) to investigate the accounts, ascertaining, distinguishing, and certifying share and loan capital, the amount of new capital, and its expenditure, and if *bonâ fide* made for the purpose of the undertaking. If he should find the accounts incorrect in principle or in detail he may require correction before giving his certificate, and the payment of future dividend is to be suspended until the correction be made and the certificate is given. The companies are bound under penalties of £10 for every default to comply strictly with these provisions and to give all facilities, access to books, and to produce vouchers and afford information to the auditor. Any questions between him and the companies may be referred to arbitration. And subject to this provision the companies are required to abide by the direction and determination of the auditor.

The provisions in regard to the accounts and audit are contained in the Metropolis Water Act, 1871, sections 37 to 42, which are as follows:—

Every Company shall, on or before the thirty-first day of July in each year, fill up and forward to the Board of Trade and to the town clerk of the City of London, and to the Metropolitan Board of Works, and to the vestry clerk of each parish within which water is supplied by each Company respectively not within the City of London, a statement of account, made up to the end of their financial year than last passed, in such form and containing such particulars as may from time to time be prescribed by the Board of Trade.

Each Company shall keep copies of such statement at their office for one year after the date thereof and sell the same to any applicant at a price not exceeding one shilling for each such copy.

In case any Company make default in complying with any of the provisions of this section they shall be liable to a penalty not exceeding ten pounds for each day during which such default continues.

There shall be an auditor of the accounts of the Companies, being a competent and impartial person, from time to time appointed by and removeable by the Board of Trade.

There shall be paid to such auditor such remuneration by the Companies and in such proportions as such Board appoints.

The auditor shall, with all practicable speed after the passing of this Act, investigate the accounts of the Companies, and ascertain and certify the amounts of their capitals, distinguishing share from loan capital, and shall ascertain and certify the capital of each Company and shall from time to time, as new capital shall be expended, in like manner ascertain and certify the amount of such new capital that has been *bonâ fide* expended for the purposes of the undertaking. Notwithstanding anything in this Act, the auditor shall not investigate the accounts of any Company antecedent to the date mentioned in that behalf in relation to such Company in the Schedule C to this Act annexed.

The auditor shall once in every half-year audit the accounts of the Companies.

If he finds the accounts correct he shall certify the same, but if in any instance he finds the accounts of any Company incorrect in principle or in detail, he shall require such Company to correct such accounts in such manner as he thinks right, and no future dividend shall in any case be declared by any Company until their accounts are certified by the auditor; provided that the suspension of a dividend under this section shall not operate until after the expiration of nine months from the date of the audit.

Each Company shall, during as well as subsequent to the close of that half-year to which the accounts relate, give to the auditor, his clerks, and assistants, access to the books and documents of such Company, and shall, when required, furnish to him and them all vouchers and information requisite for the purposes of the audit, and shall afford to him and them all facilities for the proper execution of his and their duty; and any Company making default in complying with any of the provisions of this section shall, for every such default, be liable to a penalty not exceeding ten pounds.

If any Company think themselves aggrieved by any act or determination of the auditor, the matter in difference shall be referred to the determination of an arbitrator agreed on between such Company and the auditor, or, in default of agreement, appointed, on the application of either party, by the Lord Chief Justice of the Court of Common Pleas; and the reference shall be subject and according to the provisions of the Common Law Procedure Act, 1854: and the decision of the arbitrator shall be final and conclusive; and, subject to this provision, such Company shall observe and abide by the directions and determinations of the auditor.

*Limitation of the Dividends of the Companies.*

**By the Waterworks Clauses Act, 1847, the companies (except in the case of the New River Company) can only pay dividends on their ordinary share capital at the rate prescribed by their special Acts and in no case beyond a maximum of 10 per cent. per annum. They are, however, allowed to make up back dividends, and all surplus profits, subject to the formation of a reserve fund of limited amount, must be applied in making a reduction of the rates charged to the consumers for water. The West Middlesex Company having paid all the back dividends due to the shareholders and having formed a reserve fund are required at the present time to make a reduction in the rates they charge. This reduction, which is a statutory necessity, is noted on the water-rate bills sent out by the company and is called a "rebate"—a word possibly liable to the misinterpretation that the customer is enjoying some beneficent liberality on the part of the company.**

**The provision in regard to the limitations of the dividends, which may be paid by the companies is contained in the Waterworks Clauses Act, 1847, sections 75 to 82, which are as follows:—**

And with respect to the amount of profit to be received by the undertakers when the waterworks are carried on for their benefit be it enacted as follows:—

The profits of the undertaking to be divided among the undertakers in any year shall not exceed the prescribed rate, or where no rate is prescribed they shall not exceed the rate of ten pounds in the hundred by the year on the paid up capital in the undertaking, which in such case shall be deemed the prescribed rate, unless a larger dividend be at any time necessary to make up the deficiency of any previous dividend which shall have fallen short of the said yearly rate.

If the clear profits of the undertaking in any year amount to a larger sum than is sufficient after making up the deficiency in the dividends of any previous year as aforesaid to make a dividend at the prescribed rate the excess beyond the sum necessary for such purpose shall from time to time be invested in Government or other securities and the dividends and interest arising from such securities shall also be invested in the same or like securities in order that the same may accumulate at compound interest until the fund so formed amounts to the prescribed sum, or if no sum be prescribed to a sum equal to one-tenth part of the nominal capital of the undertakers, which sum shall form a reserve fund to answer any deficiency which may at any time happen in the amount of divisible profits or to meet any extraordinary claim or demand which may at any time arise against the undertakers, and if such fund be at any time reduced it may thereafter be again restored to the said sum, and so from time to time as often as such reduction shall happen.

Provided always that no sum of money shall be taken from the said fund for the purpose of meeting any extraordinary claim unless it be first certified in England or Ireland by two Justices and in Scotland by the Sheriff that the sum so proposed to be taken is required for the purpose of meeting an extraordinary claim within the meaning of this or the special Act.

When such fund shall, by accumulation or otherwise, amount to the prescribed sum or one-tenth part of the nominal capital, as the case may be, the interest and dividends thereon shall no longer be invested, but shall be applied to any of the general purposes of the undertaking to which the profits thereof are applicable.

If in any year the profits of the undertaking divisible amongst the undertakers shall not amount to the prescribed rate such a sum may be taken from the reserved fund as, with the actual divisible profits of such year, will enable the undertakers to make a dividend of the amount aforesaid and so from time to time as often as the occasion shall require.

In England or Ireland the Court of Quarter Sessions and in Scotland the Sheriff of such county may, on the petition of any two water-rate payers within the limits of the special Act, appoint some accountant or other competent person, not being a proprietor of any waterworks, to examine and ascertain at the expense of the undertakers the actual state and condition of the concerns of the undertakers and make report thereof to the said Court at the then present or some following sessions, or to the Sheriff (the amount of such expense to be determined by the said Court or Sheriff), and the said Court or Sheriff may examine any witnesses upon oath touching the truth of the said accounts, and the matters therein referred to, and if it thereupon appear to the said Court or Sheriff that the profits of the undertakers for the preceding year have exceeded the prescribed rate the undertakers shall, in case the whole of the said reserved fund has been and then remains invested as aforesaid and in case dividends to the amount hereinbefore limited have been paid, make such a rateable reduction in the rates for water to be furnished by them as in the judgment of the said Court or Sheriff shall be proper, but so as such rates when reduced shall insure to the undertakers, regard being had to the amount of profit before received, a profit as near as may be to the prescribed rate.

Provided always that if, in the case of any petition so presented, it appear to the said Court or Sheriff that there was no sufficient ground for presenting the same the said Court or Sheriff may, if they or he think fit, order the petitioner to pay the whole or any part of the costs of or incident to such petition (the amount thereof to be determined by the said Court or Sheriff), and the costs so ordered to be paid shall be recoverable in the same way as damages are recoverable under this or the special Act.

If the undertakers shall, for seven days after being required to produce to the said Court or Sheriff or to the said accountant or other person as aforesaid, any books of account or other books, bills, receipts, vouchers, or papers relating to their pecuniary affairs refuse or neglect to produce such books, bills, receipts, vouchers, or papers, they shall forfeit the sum of one hundred pounds for every such refusal or wilful neglect and the further sum of ten pounds for every day during which such refusal or wilful neglect shall continue after the expiration of the said seven days, such respective penalties to be recovered by any person who will sue for the same, with full costs of suit, in any of the Superior Courts.

*Issue of New Capital by the Companies; the Sinking Fund Clause.*

**The companies are now compelled to issue any new capital authorised by their recent private Acts under the "Auction Clauses," which provide that all new capital shall be offered either by sale or by public auction or by tender at a reserved price, to be sent under seal to the Board of Trade and after 28 days' previous notice, to be given to the Town Clerk of the City of London, the clerk of the London County Council and to the secretary of the London Stock Exchange, and after advertising the same four times during such period in two or more London daily papers (these conditions are supplemented in more recent Acts by provisions that the stock shall be issued at such rate of interest as in the opinion of the Governor of the Bank of England shall be best calculated to secure the issue of the stock at par), and further, that any premium derived from such issue shall not be considered profits of the company, but shall be expended in extending and improving their works and shall not be considered as part of the capital entitled to dividend.**

**The sinking fund clause has been inserted in special Acts of all the companies.**

**The first sinking fund clause was introduced at the instance of the City of London into the East London Company's Act of 1886. Since that time three other forms of the clause have been adopted in the case of the other companies, and now the clause has been applied to all the companies. Lord Llandaff's Commission which went carefully into the question reports that the operation of the clause in all cases is substantially this: "Whenever a company obtains power to borrow money on debenture stock the clause assumes that the money so borrowed earns profit at the average percentage of the dividend or interest paid on all capital of the company. The excess of that average percentage over the interest payable on the debenture stock *plus* 1 per cent. for management of such debenture stock is taken as the profit earned by the new money and the company are required to pay the whole of the excess to the Chamberlain of the City of London as trustee for the purpose of purchasing and holding shares of the company and of investing the dividends thereon with the view of ultimately extinguishing the capital of the company or for such other purpose as Parliament may from time to time determine." The effect of the clause is therefore to prevent any additional value accruing to the undertaking from the new loan capital.**

# III.—RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER CONTROL.

*The Balfour Commission 1892–93: The Balfour Report on the Available Supply of Water; Available Sources of the New River Company as given to the Balfour Commission, 1892; Available Sources of the New River Company as given to Sir Joseph Pease's Committee, 1896; The Balfour Commission on the Quality of the Water; The Balfour Commission Advise Control of Filtration; Information with regard to the Wells and to the Effects of Pumping required from companies.—Llandaff Commission: Terms of Reference; Intercommunication Scheme Advised and Passed; Water Board Recommended by the Llandaff Commission; Establishment of a Water Board Impracticable at Present; Purchase of Water Companies Opposed by Surrey; Water Board Undesirable for Kent; Control Recommended by the Balfour and Llandaff Commissions; Financial Control; Sir John Lubbock on "Internal Control" (Financial); The Anomalous Position of the Auditor appointed by the Local Government Board; Quality of the Water Supplied, Position of the Water Examiner; Suggestions as to Control made by the late Major-General Scott.—Conclusion.*

THE BALFOUR COMMISSION, 1892–93.

The Royal Commission which was appointed to inquire into the water-supply of the metropolis in the year 1892 consisted of Baron Balfour of Burleigh, Sir George Barclay Bruce, Kt., Civil Engineer; Sir Archibald Geikie, Kt., Doctor of Laws, Professor of Geology and Mineralogy in the University of Edinburgh; Mr. James Dewar, M.A., Jacksonian Professor of Experimental Philosophy, Cambridge; George Henry Hall, Civil Engineer; James Mansergh, Civil Engineer; and Dr. William Ogle. The sittings of the Commission extended over a long period of time. The first meeting took place on May 16th, 1892, and the Commission sat at intervals until June 30th, 1893. The result of their sittings was that a quantity of matter was ultimately published consisting of the report,[5] a large book containing the minutes of evidence, a still larger volume containing the appendices to the minutes of evidence, another volume containing maps, plans, and diagrams, and an index published separately.

The matters which were investigated by the Commissioners and on which they reported may be conveniently divided into three parts. First, as to the quantity of water required for the supply of the metropolis; secondly, as to the quality of the water supplied at the time when the Commission sat; and, thirdly, as to whether any additional control over the companies' undertakings was advisable.

Anyone wishing to obtain an accurate account of the proceedings must read the report of the evidence and the book containing the appendices. The volume of the minutes consists of over 550 closely printed pages; the appendices contain over 690 pages. The report of the evidence and of the matter contained in the appendices are of greater value than the report of the Commissioners. Unfortunately some of the evidence given has been proved since to be inaccurate, and as the report was presumably founded on the evidence the opinion of the Commissioners in as far as it was founded on incorrect statements which they received as facts is valueless. It is, therefore, not necessary to deal at any very great length either with the evidence or with the report, but it will be necessary only to show clearly and briefly why it is that the prolonged labours of the Balfour Commissioners have, it must be feared, been to some extent wasted.

It will be best to take the subjects dealt with by the Commission under the divisions already given.

*The Balfour Report on the Available Supply of Water.*

As to the quantity of water which is available from the present sources, the evidence given before the Balfour Commission was not complete, because there are many districts within the area of Water London whose sources of supply and future requirements were not fully taken into consideration. This, however, is not a matter of very great moment.

The engineers of the metropolitan water companies gave evidence with regard to their sources of supply. It is not necessary to go into detail in the case of the sources of each company. It is sufficient for our purposes to show that the evidence given in one case has since proved to be wrong.

*Available Sources of the New River Company as given to the Balfour Commission.*

The case is that of the New River Company and it is necessary to go a little into detail with regard to the evidence given by the engineer of that company at the time of the Balfour Commission and the evidence which he has since given with regard to the amount of water which can be obtained from wells belonging to the company.

At the first sitting of Lord Balfour's Commission which was held on May 16th, 1892, Mr. Joseph Francis, engineer to the New River Company, was examined in regard to the amount of water which the company could supply. The evidence appears on pages 2 to 11 of the volume containing the minutes of evidence. A statement of the quantity of water which the New River Company had available is also given in the Appendix of the Royal Commission on the Metropolitan Water-supply, page 1. The statement in the Appendix is as follows:—

At this time the Company have available a quantity of nearly fifty seven million (57,000,000) gallons derivable from the following sources:—

| | Gallons per day. |
|---|---|
| River Lee ... ... ... ... ... ... ... ... ... ... ... | 22,500,000 |
| Chadwell spring and wells ... ... ... ... ... ... | 34,000,000 |
| Ponds for non-domestic use, nearly ... ... ... | 330,000 |
| Daily ... ... ... ... ... ... ... ... ... ... ... ... | 56,830,000 |

The next paragraph states: "This quantity is being continually augmented by further development and extension of the chalk well system." Mr. Francis was examined by Lord Balfour in regard to the details of the available quantity of water, and in answer to questions he said that the amount then used was 33,000,000 gallons daily. Of this 22,500,000 gallons came from the Lee the remaining 10,500,000 from Chadwell spring and wells. During the year 1891 the average amount derived from Chadwell spring was 2,000,000 gallons per day.[6] In answer to Lord Balfour the witness gave the quantities which he said the wells could produce daily should that amount be required. The table given was as follows:—

| | | | |
|---|---|---|---|
| Broadmead Well ... ... | 1,500,000 | Turnford Well ... ... | 3,250,000 |
| Amwell End Well ... ... | 1,500,000 | Cheshunt Well ... ... | 750,000 |
| Amwell Hill Well ... ... | 3,250,000 | Hoe Lane Well ... ... | 3,300,000 |
| Amwell Marsh Well ... | 2,800,000 | Highfield Well ... ... | 3,000,000 |
| Rye Common Well ... | 3,750,000 | Campsbourne Well ... | 3,300,000 |
| Hoddesdon Well ... ... | 2,160,000 | Betstile Well (nearly) | 500,000 |
| Broxbourne Well ... ... | 4,500,000 | | |

In answer to Lord Balfour Mr. Francis said that they had never taken these quantities simultaneously from the wells. "We have," he added, "never needed to do so. I may say that these figures which I give by no means represent what we can get out of the wells by working the engines a little faster, but they are all worked at very moderate speed. We actually do get these quantities whenever we are working; but

[5] Report of the Royal Commission appointed to inquire into the Water-supply of the Metropolis. London: Eyre and Spottiswoode, 1893.

[6] It may be here noted that tables given to Lord Llandaff's Commission by Lord Robert Cecil on behalf of the Hertfordshire County Council showed that the flow of Chadwell spring has steadily and continuously diminished. During the summer of 1897 the spring entirely failed. The amount of water derived from wells was on the average 8,500,000 gallons less than the amount derived from the spring. Mr. Francis admitted that if the company obtained 34,000,000 gallons a day from the springs and wells that amount would be 23,500,000 more gallons than were obtained at the time the evidence was given. The basis of calculation on which the figure 34,000,000 gallons was arrived at was by taking what each well could produce, and had produced, over a period of weeks together, pumping day and night, taking each well separately, and then adding them together and finding the total amount. It was not the maximum quantity that could be taken from the wells, but a fair average of what could be obtained daily in a fair week's work from all the wells.

if we needed more water we could, by increasing the speed, get a great deal more out." In their report Lord Balfour's Commission accepted the figures given, that is to say, that the Chadwell spring and wells were capable of providing 34,000,000 gallons of water daily.

*Available Sources of the New River Company as given to Sir Joseph Pease's Committee, 1896.*

In the year 1896 a Committee was appointed by the House of Commons to report on Bills which were promoted by the London water companies. Amongst these Bills was one promoted by the New River Company and another Bill in which that company was interested—the Staines Reservoirs Bill. The Select Committee was composed of the following gentlemen:—Mr. Baldwin, Mr. Bond, Mr. John Brunner, and Mr. James Stuart, who were nominated by the House, and Mr. Brigg, Mr. Lewis Fry, Mr. Lees Knowles, Mr. Muntz, and Sir Joseph W. Pease, who were added by the Committee of Selection of the House. Sir Joseph Pease was appointed chairman.

On June 5th, 1896, Mr. Joseph Francis was examined at some length with regard to the amount of water supplied by the wells of the New River Company.[7] In answer to Mr. Balfour Browne he said that in the evidence which he had given before Lord Balfour's Commission he had stated that 56,830,000 gallons a day could be supplied by the company and that they would be able with new machinery to get a great deal more water. The witness would not admit that he represented to the Commission that 56,830,000 gallons were practically in hand, and he said that the Commission "fully understood" that it was nothing of the kind. Sir Joseph Pease said that although he did not desire to interrupt the examination he wished to remark that it was difficult to know what the Commission did understand except what they had put in their report, and that on page 27 of that report they had said that Chadwell spring and wells could supply 34,000,000 gallons daily, and he further pointed out that the witness in his evidence before them had put down the amount which could be furnished by Chadwell spring and the wells at 24,000,000 gallons daily which was 10,000,000 gallons less than he had estimated in the year 1892. The Chairman asked how it was that the figure had been put down at 34,000,000 gallons in 1892 and 24,000,000 gallons in 1896, and the witness replied, "Because we cannot rely upon the machinery always working. In the first place we must make allowance for unavoidable stoppages, for oiling heated bearings, and various causes. Then beyond that, out of the very great number of engines we have there are always some that have to be set off for repairs, and 10,000,000 gallons is not too much allowance to make for that." But Mr. Francis had told the Balfour Commission that 34,000,000 gallons was a fair daily average of what could be obtained, but that it was not the maximum quantity which they would be able to get should they require more.

This evidence speaks for itself. Comment is not necessary. It is seen from the figures quoted and from the evidence which he gave that according to the engineer of the New River Company the amount of water available for the use of the metropolis was found in the year 1896 to be much less in quantity from that which he stated was available when he gave evidence before the Balfour Commission. Lately before the Llandaff Commission it was asked if the engineer could in any way reconcile the figures which had been given before the Balfour Commission with those which he had subsequently given. The answer was that he had made a mistake.

It is quite evident that the conclusion with regard to the quantity of water available arrived at by Lord Balfour's Commission, based on erroneous data, are worthless and no more need be said on the matter.

*Balfour Commission on the Quality of the Water.*

With regard to the quality of the water-supply an enormous amount of evidence was given as to the sources of the water used by the metropolitan companies. Broadly speaking, the evidence may be divided into two sections. First, that given by the late Sir George Buchanan and by men who had made independent investigations into the matter; and, secondly, that given by experts employed by the metropolitan water companies.

A very interesting and instructive interview took place between Sir George Buchanan and the Commission at Trafalgar-place, Charing-cross, on Tuesday, May 10th, 1892. Anyone interested in the subject of water-supply, and especially of the importance to be attached to the source of the supply, would do well to read carefully the report of this interview. It is to be found on page 428 of the minutes of evidence of the Balfour Commission.

Sir Archibald Geikie towards the end of the interview asked Sir George Buchanan whether there was any particular line of research which he could suggest or recommend to the Commission in regard to the contamination of the sources of supply. Sir George Buchanan replied by recommending the Commission to go and look for themselves or to send someone else to look for them. "I do not think," he said, "there is anything but what I may call field observation, but go and see that what ought not to get into the water does not get into it."

Now, Lord Balfour's Commission did not adopt the method of "field observation." They did not apparently attach such serious importance as did Sir George Buchanan to the evidence given with regard to the pollution of the Thames and to the pollution of the Lee. They apparently attached more importance to the evidence of the scientific experts who were employed by the metropolitan water companies, and placed great reliance in artificial purification methods.

*The Balfour Commission Advise Control of Filtration.*

With regard to the control of the water companies the Commission recommended that greater power should be placed in the hands of the Water Examiner and that regulations should be made with regard to the filtration of water.

They attached the greatest importance to the efficient filtration of river water and they made important suggestions as to the control of filtration and to the method by which this control should be exercised. These recommendations are embodied in sections 176 and 177 of their report and are as follows:—

> We have further to consider what steps should be taken to ensure the proper treatment of the water that is taken from these rivers for the supply of London. For the water that flows down to the intakes must be subjected to certain important processes before it is brought into a suitable condition for delivery and consumption. These processes consist of subsidence and filtration, and the quality of the water when delivered depends largely upon the thoroughness with which they are carried out. It does not come within the terms of our reference to lay down what should be the exact regulations as regards filtration, that is to say, what should be the proportionate area of the filtering beds, the depth of sand, the frequency of renewal, or the rate at which the water should be allowed to percolate; nor, as regards the subsidence tanks how many days' storage should be deemed sufficient so as to obviate the necessity of taking in turbid storm water and to allow of due settlement; but we cannot shut our eyes to the fact that the provision for these purposes differs enormously in the different companies and in some of them is to our mind quite inadequate.
>
> Regulations on these matters should be drawn up after competent inquiry and adherence to these regulations should be strictly enforced. This enforcement should be entrusted to the public water examiner, who should have the legal right of entry into all the waterworks and the duty of reporting periodically as to the due observance of the conditions laid down. At present the examiner is only admitted to the works on sufferance and, though he has distinctly informed us that he has always been admitted not only without hesitation but with all courtesy by the various companies, it is plain that the standing ground of a man who is inspecting by right is very different from that of one who is only present by courtesy.

*Information with regard to the Wells and to the Effects of Pumping required.*

Another recommendation given in the Balfour report relates to the obligations which the Commission advised should be imposed on the companies to give accurate information in regard to the amount of water pumped from their wells and in regard to the height of the water in the wells. As we have already seen the information given by the engineer of the New River Company to the Balfour Commission in May, 1892, did not accord with that given by the same witness to Sir Joseph Pease's Committee in June, 1896. Now the Balfour Commission not only felt, but they also expressed, the difficulty they were labouring under in getting "accurate and reliable information," and for that very reason, amongst others, they made the following important recommendation:—

> We think it of very great importance that distinct obligations should be laid upon any company or local authority which is allowed to pump water from the chalk for purposes of public supply to keep accurate observation of the effect of their operations on the level of the water in the wells from which they pump, and return the results to the water examiner under such regulations as may be framed. The great difficulty which we have had to encounter has been in getting accurate and reliable information as to the actual effect of the operations now carried on. The importance of procuring this will increase each year as the limit of what can be taken from any district with safety is gradually being reached

[7] Report on London Water Companies' Bills, ordered by the House of Commons to be printed July 7th, 1896, p. 131, et seq.

The Balfour Commission looked forward to an improvement in the water-supply and suggested two things which appeared to have struck them as the most important factors in the consideration of the question. In the first place they recommended that the powers of the Thames Conservancy Board should be extended and that they should have jurisdiction over the tributary streams of the Thames. An Act passed in the year 1896 gave this power to the Thames Conservancy Board and very great improvements have resulted from its use by that firm and judicious authority. The other matter which appears chiefly to have struck the Balfour Commission was the importance of filtration, and they looked forward to the possibility that the Water Examiner, if and when he were placed in a position firmly to exercise his authority would be able by supervising the methods of filtration to ensure a great improvement in the quality of the water supplied by the companies.

## THE LLANDAFF COMMISSION.

A Royal Commission to inquire into the water-supply within the limits of the metropolitan water companies was appointed on May 1st, 1897. The Commissioners were Viscount Llandaff, the Right Hon. John William Mellor, Sir John Dorington, Sir George Barclay Bruce, Mr. Alfred de Bock Porter, the late Major-General Alexander de Courcy Scott (the Water Examiner appointed by the Local Government Board), the late Mr. Henry William Cripps, Q.C., and Mr. Robert Lewis.

### *Terms of Reference.*

The terms of reference were as follows:—

1. Whether having regard to financial considerations and to present and prospective requirements as regards water-supply in the districts within the limits of supply of the metropolitan water companies it is desirable in the interests of the ratepayers and water consumers in those districts that the undertakings of the water companies should be acquired and managed either—(a) by one authority; or (b) by several authorities; and if so, what should be such authority or authorities. To what extent physical severance of the works and other property and sources of supply of the several companies, and the division thereof between different local authorities within the limits of supply, are practicable and desirable; and what are the legal powers necessary to give effect to any such arrangements.
2. If the undertakings are not so acquired, whether additional powers of control should be exercised by local or other authorities; and if so, what those powers should be.
3. Whether it is practicable to connect any two or more of the different systems of supply now administered by the eight metropolitan companies; and if so, by whom and in what proportion should the cost of connecting them be borne and what are the legal powers necessary to give effect to any such arrangement.

### *Intercommunication Scheme Advised. Act Passed.*

During the sittings of the Commission it was decided to take all the necessary evidence on the third term of reference in view of a possible water famine in the East-end of London. The Commission issued a report advising that steps should at once be taken to allow intercommunication between the companies' mains, a Government Bill was brought in to carry out the recommendation, the Bill became an Act of Parliament, and measures were taken by the water companies to give a supply of water to the East London Waterworks Company.[8] The promptitude with which the measure passed was creditable, and the ready way in which both Houses of Parliament, in case of a pressing emergency, passed a measure which was undoubtedly for the public interest will, we trust, encourage the Government to deal without delay with the pressing needs of the people of London in regard to the water-supply. It is in that hope that we now proceed to deal with some of the recommendations given in the Llandaff report. The columns of THE LANCET have contained *résumés* of the evidence given before the Llandaff Commission. We cannot reproduce the reports of the evidence or the digests of the Llandaff report which have appeared in our columns. We can only give in the most brief outline the gist of that report, and point out why the Government cannot be expected to frame a measure to carry out all the recommendations it contains, and why, on the other hand, the Government would not be justified in simply allowing things to remain as they are, or, to be more precise, why they cannot be permitted to allow things to drift any longer.

### *Water Board Recommended by the Llandaff Commission.*

The gist of the Llandaff report is to the effect that a Water Board should be appointed to buy the present water undertakings and to carry on the business of supplying London with water. It is also recommended that additional measures of control should be put into force and that this should be done in case either of the formation of a Water Board or in case the water undertakings are carried on by the companies.

It is necessary to say a few words about the Water Board proposed by the Llandaff Commission. The Board proposed would be a body elected by the London County Council, the Corporation of London, and the County Councils and Town Councils of the counties and towns which are situated in Water London—that is to say, the area at present supplied by the metropolitan water companies. The county of London would have no preponderating vote (or "voice"), although the rateable value and population of London would be greater than the rateable value and population of the extra-metropolitan districts. It is doubtful if the composition of the Water Board as proposed by the Llandaff Commission would satisfy anyone. Mr. Whitmore, Member of Parliament for Chelsea and a member of the London County Council, in the evidence which he gave before the Llandaff Commission said that no solution of the metropolitan water question would satisfy the "sentiment" of the London County Councillors if it did not give them a preponderating "voice." In an article which he lately wrote, however, Mr. Whitmore presses the Government to undertake immediate legislation with a view to carry out the recommendations of the Llandaff Commission. Now, as Mr. Whitmore is a "practical politician" it is necessary from our point of view to show why it is that the Government could not, without the most violent opposition, pass such a measure as that recommended by Mr. Whitmore in his more recent utterances.

### *Establishment of a Water Board Impracticable at Present.*

"Water London," in the whole of which the proposed Board would reign supreme in all questions of water-supply, occupies an area of 620 square miles. The administrative county of London has an area of 121 square miles. But the districts outside London have interests which are not of less importance to them than the districts within London are to Londoners themselves. This proposition will be readily admitted, and it may appear at first sight hardly necessary to state it, but when the minutes of evidence of the Llandaff Commission are published it will be seen what an enormous amount of space is taken up by the evidence of the witnesses employed by the London County Council and by the London water companies, and what a small space is occupied by the evidence given by the representatives of the extra-metropolitan authorities. Now the weight of the evidence must not be judged by the weight of the paper necessary to report it. To take an example, the case presented by the county of Surrey may well serve.

### *Purchase of Water Companies opposed by Surrey.*

The county of Surrey was represented by one gentleman, who appeared alone, without counsel, and gave his evidence very briefly. When the manner and method in which this evidence was given on behalf of Surrey is compared with the evidence given by the London County Council, represented occasionally by two learned counsel in addition to two or more officials whom doubtless the ratepayers pay, the contrast is rather striking, but the evidence of one country gentleman who devotes his time to the interest of his county and submits himself to a cross-examination by hostile counsel without any other protection than a sense of the justice of his cause deserves to be considered of no less value because the case is stated simply without words of supererogation, and therefore evidence of this kind is of no less importance than is that of scientific experts. The evidence of Mr. Halsey, the chairman of the Surrey County Council, was given at the twenty-seventh sitting of the Commission and is reported in the County Council Print, pages 1689–1712. It

[8] The only exception which could be taken to the measure had regard to the manner in which money was to be raised for carrying out the engineering work necessarily involved. The measure was necessary because had it not been passed it seemed probable that the East London Waterworks Company would be unable to supply its customers, and this being so it was not evident why the ordinary sinking fund clause should not have been introduced into the measure on its introduction into the House of Commons. A Committee of the House of Lords recommended that this clause should be introduced and the Bill was returned to the Commons containing it. The Commons, however, rejected the clause and the Bill afterwards became an Act without it. This is not the first occasion on which the House of Lords has interfered with a Bill from the Commons in a manner favourable to the London water consumers. In a Bill which was introduced in the year 1819 for limiting the charges of the metropolitan water companies a Committee of the House of Lords presided over by Lord Donoughmore advised that the water rents should be reduced to a lower level than that recommended by the Commons. The result was that as it was pretended that an alteration in the money clause by the Lords affected the privileges of the Commons the Bil was dropped.

is not necessary here to go into the details of the evidence, it will be sufficient to say that the Surrey County Council wished that the present arrangements for a water-supply to be given by the existing companies should not be interfered with. The evidence was concluded by a short sentence which was produced by the hostile examination by the Parliamentary agent to the London County Council. The final answer of Mr. Halsey, which apparently deterred the agent from following up the matter further and which, indeed, appeared to clinch it finally, was to the effect that purchase by any authority was undesirable and that purchase by the London County Council of the water companies' undertakings, as far as Surrey was concerned, was the worst possible basis of settlement which could be arrived at.

*Water Board Undesirable for Kent.*

The case of the county of Kent seems to merit quite a separate and special consideration. The history of its water-supply differs very much from that of any other district which came within the scope of the inquiry. The area supplied by the Kent Waterworks Company is a very large one, no less than 179 square miles. The business of the Kent Company has greatly extended as years have passed and the districts beyond those already supplied by the company have in several instances requested them to extend their area so as to include them also. There has been practically no conflict between the local authorities and the Kent Company.

Evidence with regard to the water-bearing strata of Kent was given before the Commission and there seems to be no doubt that there is enough water in the area to supply the county for many years to come. The question arose as to whether it was advisable for the Kent Company to join the other water companies in the scheme of intercommunication. The engineer to the company did not strongly urge that they would be benefited by it, and was evidently convinced that as far as their own area was concerned they could do perfectly well without any intercommunication with the mains of the other metropolitan water companies, for during the drought of the year 1898, when one of their wells failed and there was a breakdown of the machinery at another station, the company still had a sufficiency of water for their own wants. It was, therefore, impossible for the Kent Company to make out a strong case in favour of the hypothesis that the area which they supplied was likely to derive any benefit from any intercommunication with the mains of other companies.

A good deal of evidence was given before the Commission with regard to the amount of the percolation of rain-water which takes place in the chalk, but a scientific witness who was examined on the subject admitted that the amount of water which actually percolates is really a matter rather of speculation than of actual knowledge.

However, the evidence given by all the witnesses pointed to the conclusion that the area supplied by the Kent Company has within its own limits a perfectly adequate supply for the requirements of that district and for the supply of that part of the metropolis which is included in the statutory area of the company. It would be extremely disadvantageous to the people of Kent if their water were pumped away in quantity to supply London with water which the Kentish people require for themselves. The amount which is pumped at present is about half that which it is assumed could possibly be obtained. It is perhaps hardly necessary to point out that it is much easier to get the first half of the water than the second half.

A study of the situation of the wells of the company also shows that many of them are quite close to the boundary of the district—that is to say, the company has gone as far afield as they are authorised—for example, the new well at West Wickham is right on the border of the company's area; that at Shortlands is also close to it; the new well at South Fleet is not far from the western boundary of the company's district; and the well near the Pilgrim's Way south of the North Downs is, as a matter of fact, in the county of Surrey. There is no doubt, therefore, that the Kent Company's wells are so arranged as to take as much water as possible at places near their boundaries. What, it may be asked, does this mean? What importance has it? What has it to do with the question as to whether purchase by a Water Board or by some other body is expedient? And what has it to do with the question as to whether the water companies' undertakings should belong to one or to separate authorities?

Briefly this. Kent has a sufficient amount of water for her own needs. The populatiou is at the present time in many parts, however, sparse, but it is likely to increase. On the other hand, the amount of underground water will not increase. If the water-bearing area were to be under the control of any authority other than the County Council of Kent the interests of the people of Kent would undoubtedly be sacrificed to the wants of London. With regard to the question of a supply of water from Kent passing to a district outside their authorised area, one fact which was mentioned in evidence to the Llandaff Commission is not unworthy of note. The Kent Company supplied to the East London Waterworks Company during the year 1898 a certain amount of their water. It is not explained by what authority this was done. Now, although no one can possibly grudge the people of East London the small amount that the Kent Company was able to send during a period of famine, speaking from the point of view of the people of Kent it does seem that they have the right to know on what authority the Kent Company supplied water beyond their statutory area. In this particular case no harm was done to the people of Kent, but proceedings of that sort are liable to abuse, and if the water interests of Kent are not looked after by Kentish people the county will doubtless suffer in the future no less than Hertfordshire has suffered in the past, suffers now, and is likely to suffer in the future.

The people of Kent have been somewhat fortunate in having the matter of their water-supply managed by local men. Most, if not all, of the directors of the company are residents in Kent, and it is a good general sign of the satisfaction of the Kentish people as to the way in which their interests have been looked after that they should in more than one case elect as Member of Parliament one of the directors of their own water company.

In the course of the inquiry which was carried on before Lord Llandaff it was suggested that it might be advisable that the area now supplied by the Kent Company should be left intact. This would doubtless be the best solution for the people of Kent.

The question as to the rights in underground water was prominently brought before Lord Llandaff's Commission by Lord Robert Cecil on behalf of the county council of Hertfordshire.

We cannot, however, dwell on this question. It is quite certain that the people of Kent are not entirely forgetful of their own interests. Lord Llandaff's Commission showed that both the rural and the urban districts of Kent were aware of the danger which they would run should any authority other than a Kentish one have any power to abstract water from Kent and send it in quantity beyond their boundaries. A Parliamentary proposal to form a Water Board on the lines sketched by the Llandaff Commission would meet with the strongest opposition from Kent. Nor would any one of the metropolitan counties be content with such a measure. Enough we hope has been said to show that the Government would be extremely ill advised to bring in a Bill which would meet with general and merited opposition in the metropolitan counties.

*Control Recommended by the Balfour and Llandaff Commissions.*

Members of the present Government are responsible for the appointment of the last two Royal Commissions which were constituted to consider the question of the London water-supply. Both the Balfour and the Llandaff Commissions have recommended additional measures of control. And there are measures of control which should be supported by both political parties. They demand immediate attention. The things of greatest urgency may be best considered under the headings of (1) financial control; and (2) general control.

*1.—Financial Control.*

At the present time the financial control of the companies is in many respects satisfactory. In the first place the water rents charged are not generally excessive and they have been fixed by Acts of Parliament. The dividends which can be paid by the companies (except in the case of the New River Company) are limited by Acts of Parliament. New capital raised by the companies is allowed to be obtained only when provisions for a sinking fund are made.

*Sir John Lubbock on Internal Control (Financial).*

Sir John Lubbock, now a peer, in the evidence which he gave

before the Llandaff Commission brought forward, we think for the first time, some valuable suggestions as to the additional financial control which he considered fair to the companies and a matter of simple justice to the water consumers. Sir John Lubbock said that in his opinion control may be looked at from two points of view. There was external control, of which an example was that of the power now invested in the London County Council and in the Railway Commissioners by the Act which was passed in the year 1897. This Act, which has reference chiefly to the continuous system of supply, ought, he thought, to have a fair trial. To the other method of control Sir John Lubbock said he attached considerable importance. In his opinion control ought to be exercised over the financial arrangements of the companies. Some of them which are now paying a maximum dividend cannot pay any more to their shareholders however much more they may earn, and it has been alleged that there is *primâ facie* evidence that some of them are inclined to increase their expenditure, perhaps unnecessarily. Sir John Lubbock thought that it was important in any concern that those who were financially interested should have a voice in the management of the business in regard to such questions as to what salaries should be paid, as to the number of the *employés* engaged, and as to the amount of work which should be done by them. These matters could only be managed by what might be called "inside control"—they could not be determined by any exterior controlling body. As an example of such internal control Sir John Lubbock referred to the case of Indian railways in which the Government has a large interest. In the case of these railways, he said, the Indian Government appointed one or more directors to look after their interests in the management of the railway. He thought that the case of the metropolitan water companies was somewhat analogous.[5] The people who paid water-rates in London were practically in the position of ordinary shareholders; for example, in the case of the customers of the West Middlesex Company those people who hold the ordinary shares are practically at the present time preference shareholders. They are entitled to a fixed dividend which they are receiving and they are not entitled to anything beyond this. The persons who really stand in the position of ordinary shareholders are the water-rent payers because they are actually the people who benefit by improved management and by increased profits. For at the present time now that the full dividend is being paid to the shareholders anything which remains over must necessarily be applied to reducing the price charged for water. It is therefore only reasonable that the water-rent payer should be allowed, either through local bodies or in some other way, to appoint representatives to the board of the company to see that their interests are properly looked after. Sir John Lubbock, in giving his evidence, said that he did not wish to suggest that the interests of the water-rent payers were not at the present time thoroughly looked after, but he strongly held that as a general rule and as a matter of principle those people who have a substantial financial interest in the success of a company ought to have a voice in the management of the concern, and it was from that point of view and because the water-rent payers had a direct interest in some of the water companies' earning powers and a contingent interest in others that it was only fair and right that they should have one or more directors on the board of managers. He thought, moreover, that the system would work well. There would be no conflict of interest between the company and the water-rent payers in these matters. Sir John Lubbock said he had not thoroughly considered the questions as to how and by whom the new directors should be elected. In the case of Kent, however, he thought it would be best that the nomination of them should be made by the Kent County Council or by the urban authorities, because if this were done they would get men who really understood the matter. He did not think that it would be well for the London County Council to elect the members because, as everyone knew, the election of members to that body depended on considerations which had no reference to the management of water undertakings. On the other hand, if members were appointed by a local authority those who had had previous experience of such undertakings would doubtless be elected.

With regard to the way in which the new directors would work with the old ones Sir John Lubbock said that his experience of boards was that they were very reasonable and that it very seldom happened that there was any division on the board. The advice of those most competent to judge was usually taken and there was no reason if his proposition were carried out why there should be any conflict of interest. His impression was therefore that things would work smoothly.

*The Anomalous Position of the Auditor appointed by the Local Government Board.*

There is another matter with regard to control which appears to be most unsatisfactory. The auditor of the accounts of the metropolitan water companies who is appointed by the Local Government Board is paid by the water companies and no provision is made for the payment for any legal advice which he may require in dealing with the accounts of the companies. Mr. Alan Stoneham, the gentleman appointed by the Local Government Board, gave a full account of his duties and of the way in which he carried them out at the thirtieth sitting of the Llandaff Commission. By the provisions of the Act of 1871, under which he was appointed, it was enacted that the auditor was limited with regard to the number of back years for which he was allowed to examine the capital accounts of the companies; that is to say, he could only examine the accounts back to a certain date in the case of each company. The dates in different cases varied from the years 1864 to 1869. Mr. Stoneham audited the accounts which were available in each case and ascertained the method in which they were kept. He had first to satisfy himself that the accounts were kept on a proper system. He had perforce to assume that the existing capital as stated in the accounts of each company was the correct amount of capital. But from the date at which he began his duties he was empowered to allow such sums only to be placed to capital account as in his opinion might properly be so placed. Lord Llandaff asked the witness what would happen when fresh capital was raised if the auditor suggested that some of the amount which the company proposed to spend could not properly be considered capital expenditure. Mr. Stoneham replied that he would not allow any sums which ought not to be credited to capital account to be put there. He looked upon it as a conversion of so much gold in the till into engines or pipes or whatever the money was spent on. Lord Llandaff pointed out that if that were so it was the conversion of a permanent asset into a perishable one and he inquired of Mr. Stoneham as to whether account was taken of the deterioration or depreciation of the plant. Mr. Stoneham said that there was no depreciation account and nothing was "written off" from the capital account for deterioration and depreciation. With regard to the machinery he said that if an engine wore out it was replaced and the charge was put against the revenue of the company, and he accepted the statement of the engineer that the new engine had been put to replace the old one. He did not assure himself with his own eyes that the engine had been replaced by another and proper engine. Mr. Stoneham said that he was not aware that before the water famine which occurred in the year 1894–95 a number of pipes were likely to burst. But the pipes did burst and the accounts of the outlay necessary for reinstatement were taken to him. The matter of how the pipes were to be paid for was discussed by him with the representatives of the companies. It was decided that a certain amount of the expenditure might fairly be charged to capital account and some to revenue. The reason why some part was charged to capital was that the pipes were placed at a greater depth below the surface of the ground than the pipes which they replaced. Mr. Stoneham thought that a certain proportion of the outlay might be reasonably considered to be new work and he had therefore allowed a certain proportion of the expenses incurred to be charged against capital because the pipes had been so lowered.

During his term of office a somewhat curious arbitration case had arisen between the New River Company and himself. It arose in this way. The New River Company had some land at Blackfriars which they sold at a price higher than that which they originally gave for it. The New River Company had contended that the profit should go to revenue and that it should be paid to the shareholders. On the other hand, the auditor contended that the sum so received should be written off the capital. The matter came before the Lord Chancellor who held that the appreciation of the value ought to be considered and treated as revenue. A member of the Commission (Mr. de Bock Porter) asked

[5] In the case of the Indian railways the Government representative has, we believe, much more power of control than Sir John Lubbock suggests should be exercised on the metropolitan water companies.

Mr. Stoneham whether he did not admit that in some cases, in which part of the plant and works of a company had been disused, they became of less value, and Mr. Stoneham replied that he had no official knowledge on that subject. On being further asked who had such a knowledge Mr. Stoneham pointed out that that was a question which did not appear in the accounts of the company, and that he only looked at the accounts which had been made up since the date of his appointment. The Local Government Board had not laid down any instructions for his guidance. If he misconducted himself the Board had the right to remove him, but otherwise they had no right to interfere with the way in which he carried out his duties.

With regard to the question of accounts of money paid in Parliamentary expenses, and as to whether it was debited to the capital account of the company, or whether it was paid out of revenue, Mr. Stoneham explained that before a Bill brought forward by a company became an Act the expenses were paid from the income of the company and in the case of a company opposing Bills all the expenses were paid from the income of the company. He could give no idea as to the amount which the companies had spent in opposing the Bills brought in by the London County Council. He carefully abstained from anything like interference. It may, perhaps, be worth while at this point to remark parenthetically that should a Bill be brought in by the West Middlesex Company and opposed by the London County Council (or *vice versâ*) the whole of the legal and Parliamentary expenses are paid by the London ratepayers and by the water consumers who live in the area supplied by the West Middlesex Company.

With regard to office expenses Mr. Stoneham said that he had the assistance of clerks, but should a dispute arise no provision was made by which he could obtain counsel's opinion, and he had himself borne this expense, paying the money out of his own pocket. In one case which came before Sir Henry James [9] as arbitrator the late Solicitor-General and Mr. Justice Wright were against him. Sir Henry James took the case and argued it so as to give the auditor as much help as possible. He said: "Mr. Stoneham is not represented by counsel and you will understand I will argue it for him." Lord Llandaff inquired whether the auditor meant that Sir Henry James argued to Sir Henry James on account of Mr. Stoneham, and the reply was that he, in fact, did argue the case to himself, appealing to Mr. Stoneham from time to time. Mr. Stoneham said that he found himself at a very great disadvantage in the case (a statement hardly complimentary to Sir Henry James) and therefore in the next case which occurred, when he appeared before Sir Robert Reed, counsel represented him and he paid the fees himself. Lord Llandaff asked whether when the auditor had a difficulty in discharging his duties and the matter had to go to arbitration there was any provision by Parliament that his expenses should be met out of some fund, and the auditor replied that there was no such provision. Lord Llandaff suggested that it was a very serious blot on the Act and the witness concurred that it was a very serious blot. He said that he had never applied to the Board of Trade for legal costs and the water companies had to pay for "taking up the case" (i.e., paying the arbitrator's fees).

It does seem most curious that an auditor appointed under an Act of Parliament by a public department should be in the position in which the auditor of the accounts of the metropolitan water companies showed that he was placed. Such an important officer ought surely to be provided with any legal help which he wants. Is it not a most monstrous state of things that a Parliamentary official acting on behalf of the public should be placed at such a disadvantage? Is it not certain that the interests of water consumers must necessarily suffer? However able and painstaking the auditor may be, is it likely that he has sufficient knowledge of legal technicalities to be able to hold his own against the most clever and skilled counsel who can be employed by the water companies? And to put the matter on higher ground, is it a dignified proceeding that a Parliamentary official should have to contend single-handed against counsel employed by rich trading companies? Surely this state of things should be altered without delay.

The report of the Llandaff Commission recommends that provision should be made for the auditor to have counsel's advice paid for by the Local Government Board. We are strongly of opinion that the auditor himself should also receive a liberal salary and that the money to provide it should not be paid by the trading companies whose financial peculiarities it is his duty to check in the public interest.

[9] Lord James of Hereford.

*Quality of the Water Supplied: Position of the Water Examiner.*

With respect to the control now exercised as to the quality of the water the Metropolitan Water Act of 1852 (as we have seen, p. 187) provided that no company should resort to any new source of supply without the permission of the Board of Trade.[10] The control with regard to the source of supply appears therefore to be adequate. Certain powers are also exercised under the Acts of 1852 and 1871 with regard to ensuring that water of good quality should be supplied (see p. 188). Under the latter Act the appointment of a Water Examiner by the Local Government Board caused a great improvement in the matter of control, but the provisions made as to the powers and payment of that officer need amendment.

At the present time the Water Examiner has no power of entry on to the premises of any metropolitan water company. This matter was referred to in the report of the Royal Commission presided over by Lord Balfour, and in their report the Commissioners recommended that power of entry to the company's works should be given to the Water Examiner and that he should therefore be able, as a matter of right, to enter any of the premises of the metropolitan water companies instead of visiting them as he now does on sufferance and as a matter of courtesy. Many witnesses who gave evidence to Lord Llandaff's Commission referred to this matter and no representative of any of the water companies made any objection whatever to the proposed alteration. Indeed, one witness who appeared on behalf of the water companies suggested that in his opinion the water analyst or any other person appointed by the Water Examiner for the Local Government Board might well receive the right at any time to make any investigation which he thought fit with regard to the manner in which the water companies carry on their business.

The question as to the remuneration of the Water Examiner is one which cannot be passed over without a few words. At present, as we have seen (see p. 188), under the regulations of the Act of 1871 the Water Examiner appointed by the Local Government Board is paid by the metropolitan water companies. It is not right that the water companies should be called upon to pay an officer of the Local Government Board. It is not suggested that there is really any want of dignity in the reception by the gentleman who holds the appointment of Water Examiner of money which is paid by the water companies. The payment is of course made through the Local Government Board, but it is not seemly that an officer of such importance, whose duties are so responsible, should be paid, either directly or indirectly, by a number of trading companies whose businesses he has to overlook in the public interest. The Water Examiner to the Local Government Board is in all respects a public official and he should be paid from public funds. It is neither right nor dignified for a public department to allow it to be truthfully said that one of their officers is paid out of the profits of private businesses. Now the representatives of the metropolitan water companies do say that they pay the Water Examiner, and it is true that they do. They do so because they are required to do so by a statutory enactment. This may possibly by some people be considered a trivial matter, but we maintain that it is not a trivial matter. The amount of payment which the Water Examiner receives is doubtless totally inadequate payment for the duties which he performs. Such an officer should be highly paid and should have at his command a sufficient and efficient staff. The information which he publishes for the public should be his own information and the information of his own officers. At the present time this is not the case. The monthly report of the Water Examiner contains a number of statements with regard to the quantity of the water-supply and details are given as to the quantity derived from the Thames, from the Lee, and from wells. These figures are supplied by the water companies' servants. The Water Examiner has no power to check them; they are published in an official report and then the figures become official and the "official figures" given by the Water

[10] This power is now vested in the Local Government Board.

Examiner are quoted as such by the representatives of the water companies. Major-General Scott, the late Water Examiner, pointed this out to his fellow members of Lord Llandaff's Commission. There is no secret about it. It is a matter which certainly ought to be altered.

These statistics are not the only things which are supplied by the companies to the Water Examiner. Every month he reports on the quality of the water supplied by the companies. Some of these reports are made by scientific experts who are employed by the companies and they are then published in the official monthly bulletin of the Water Examiner.

With regard to the quantity of water supplied to London, we have already quoted an important recommendation made in the report of Lord Balfour's Commission (see p. 191). We entirely agree with the suggestion that a distinct obligation should be laid upon any company or local authority which pumps water from the chalk for purposes of public supply to keep accurate observation of the effect of these operations on the level of the water in the wells from which they pump and return the results to the Water Examiner under such regulations as may be framed. The great difficulty which the Balfour Commission had to encounter, the report says, had been in getting accurate and reliable information as to the actual effect of the operations now carried on. The importance of procuring this will, as they say, increase each year as the limit of the amount which can be taken from any district with safety is gradually being reached. Now, this suggestion that accurate observations on the water level and the wells of the metropolitan companies should be given to the Water Examiner has not yet become a statutory obligation. The date of the report of Lord Balfour's Commission it may be remembered was 1893, and since that time nothing whatever has been done to carry out this important recommendation. Had it been carried out Lord Llandaff's Commission would have been in a position to see what changes, if any, had taken place in the water level of the wells belonging to the New River and to the Kent companies. At one of their sittings the Llandaff Commission decided that they would not "go behind" the evidence of Lord Balfour's Commission with regard to the quantity of water which could be obtained in the valley of the Thames and of the Lee. Lord Llandaff's Commission, in short, decided not to re-open this question. It is certain that changes have taken place and new conditions have arisen since the date of the Balfour inquiry.

At the Llandaff inquiry Mr. Bowles Bowles, chairman of the New River Company, absolutely declined to give information to Lord Llandaff's Commission with regard to the levels of the wells, and Mr. Francis, chief engineer to the company, objected to give such information because, he urged, the facts would be misleading. Lord Robert Cecil, who appeared before the Llandaff Commission on behalf of the Hertfordshire County Council, and in defence of the rights or alleged rights of the rural water consumers of that county, gave Mr. Bowles Bowles and Mr. Francis every opportunity of affording information, but they evidently had no wish to supply facts which would necessarily have been universally known had the recommendation of Lord Balfour's report been carried into effect by giving it the force of a statutory obligation. Now the study of the tables giving the flow of the New River Company's Chadwell Spring gives support to the general theory propounded by Lord Robert Cecil that the water levels of chalk in Hertfordshire are, and have been for years, gradually sinking.[11] Lord Llandaff pointed out to Lord Robert Cecil that the inquiry on which he was engaged did not embrace consideration of the depletion of the chalk of Hertfordshire. We must, however, suggest, and indeed insist as strongly as possible, that it is of great importance to the people of Hertfordshire, and it is of great importance to the people of Kent, to know accurately the state of the underground water in their respective counties. The measure of control which was recommended in Lord Balfour's report is a measure which Lord Llandaff's Commission have advised Parliament to carry out without further delay. The evidence which has been given by witnesses from the county of Hertfordshire, evidence which will be found in the notes of the report of the Llandaff Commission when they are published, conclusively proves that the people of Hertfordshire have suffered greatly from the depletion of their wells. The facts given have not been contradicted. The same thing may in the future possibly happen in Kent, but if the people of Kent are able to keep for themselves the water which is found "under their feet" they will have less reason to complain. Still in the case of Kent some of the representatives of local authorities have expressed the regret which they now feel that they have allowed the control of the water-supply to pass out of their own hands into that of a commercial company, and if any large amount of water were taken from Kent and sent to the metropolitan area it might well happen that a very inadequate supply would be left to the people of Kent, and it would become a very serious matter for them.

One of the directors of the Kent Company admitted that in any case of inadequacy of supply the fullest information should be given to the public with regard to their wells; but neither he nor the engineer to the company were willing to give to the Llandaff Commission all the information which they possessed as to the height of the water level in the wells. Now if the recommendation of Lord Balfour's report had been made a statutory necessity and a record had been kept of the amount of water pumped daily from each well and a record had been kept of the level of the water in each well daily, and if this information had been regularly published the people of Kent would be in a position to know from week to week or from month to month the state of the underground water in their county. We must insist that it is of the very greatest importance for the people of Kent that this should be done in the future and that a beginning should be made without delay. The County Council of Kent should know as much about the water-supply of their county as possible. From the point of view of the public it is not satisfactory to know that things which were of great moment to the water consumers and which were recommended in the Balfour report have never been carried out.

### *Suggestions for Control made by the late Major-General Scott.*

With regard to the question of control of the metropolitan water companies Major-General Scott made some valuable suggestions in the course of his examination of some of the witnesses who appeared before Lord Llandaff's Commission. The suggestions were conveyed in the form of questions which he addressed to the witnesses. In his examination of Mr. Whitmore Major-General Scott asked the following question: "As regards control should not you consider that the supervising authority should acquaint itself with the state of the works thoroughly and continuously, as it were; that its supervision should be directed to see that every company maintains its works in a proper state of efficiency; and that it should look to the future efficiency from the point of view of starting works in a reasonable time so that there should be no failure from want of capacity in the water-supply? Would not you think that that kind of control would do good? There is no such control at present." Now, as we have seen, the West Middlesex Company pay their full dividend. The shareholders of the company cannot receive more than they do at present. Any money earned in excess of the amount necessary to pay dividends has either to be employed in the working of the business or paid back to the water renters in the form of a reduction in their rates. The West Middlesex Company have had a successful business for a considerable number of years and have not only kept their plant in a state of efficiency but have looked ahead and made provision for the development of future business. This course of conduct has not been adopted by all the metropolitan water companies. In the case, for example, of the Southwark and Vauxhall Company the amount of water abstracted from the Thames was for some time greatly in excess of the amount authorised by Parliament, and sufficient provision was not made for the treatment by sedimentation and filtration of the increased amount of water so taken. The Southwark and Vauxhall Company were not financialy in as flourishing a position as the West Middlesex Company. These are facts it is well to keep in mind because they have a direct bearing on the question asked by Major-General Scott, and which has just been quoted.

Another question which contains a valuable suggestion was the following: "Assuming that a company is in rather bad circumstances and that the directors

[11] The engineer to the New River Company suggested that Chadwell Spring had failed because there was a "crack in the basin." Later in the course of his examination he said that he thought that there was a 'crack in the basin" because the spring had failed.

do not like to face the shareholders from time to time with their diminishing dividends, then it is rather an inducement under those circumstances to postpone the construction of works that anyone who looks to the future must see would be absolutely necessary. As these works take as much as five or six years to construct, if they (the directors) postpone the work too long they will find themselves at the end of that time in this condition—that after a dry season (a season of drought or something of that sort) the supply fails and it is absolutely out of the power of anyone to remedy the defect, and then the people complain; but it is too late to complain, no remedy can be applied which would not take months or years to carry out, and therefore the thing is irretrievable. Would it not be a wiser kind of administration which would overlook the company in such a way as to be able to say to a company, 'The time has arrived when you should start certain works or you will find yourselves in a mess.' Would it not be better if such an authority should put for the public a pressure on such a company to oblige them to start the works. Would it not, I say, be a wiser system of administration than to wait until complaints arise of scarcity in a district and an enormous amount of privation occurs, a state in which it is impossible to remedy things?"

Here is another valuable suggestion. "If you look at the Acts of Parliament of 1852, 1871, &c., you will see that the idea of control of some sort or other pervades the whole of them, or a great portion of them. That control really amounts to this, that when anything goes wrong somebody is to be punished, but would it not be better to prevent the wrong originally so that the complaint of wrong-doing should not arise?"

These suggestions deserve the most careful consideration. It may be doubted if they could be carried into effect with the entire approval of those Members of Parliament who are also directors of water companies and who are often listened to in the House as "practical men" with a thorough working knowledge of all matters pertaining to water-supply. But Major-General Scott's questions were asked in the interest of water consumers who were not represented by counsel and the questions were based on a thorough and long experience of all the details of the metropolitan water-supply.

### CONCLUSION.

The matters of greatest urgency in respect to control of the London water companies are:—

The auditor appointed by the Local Government Board should be in all respects an officer of that Board and his salary should be paid from public sources. He should, when he wishes it, in the case of any difference with the water companies have the advice and help of the law officers of the Crown.

The Water Examiner appointed by the Local Government Board should have access to all parts of the metropolitan water companies' undertakings. He should be entirely responsible for the report which he issues monthly. The companies should be obliged to place at his disposal every facility for making the several investigations which he wishes. Every investigation which the Water Examiner makes should be done either by himself or by officers appointed by him. Any analyst he may employ should be nominated by himself and all the necessary expenses entailed in carrying out the work necessary for him to give full and accurate information should be paid by the Government department.

No Member of Parliament who represents any part of Water London, whatever may be his political conviction, could fairly object to the measures of control which we have just indicated. The Government having appointed and received the reports of two Royal Commissions have no right to make any further delay, and as both the Balfour and Llandaff Commissions have distinctly reported in favour of increasing the power of the Water Examiner they have no legitimate reason for delay in passing a simple measure which will carry out this recommendation. Any Member of a metropolitan constituency who, either from indifference or because he is a director of a water company or from any other reason, failed to support the Government in passing a measure for the benefit of the whole of the water consumers would richly deserve to lose his seat at the next election. It is now some years ago that the Right Hon. A. J. Balfour said he would not have London water-supply considered as an Imperial question. It is not an Imperial question, but it is of great importance to the people of London and it ought not to be treated as a party question.

## THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to July 18th, when the total exceeded £45,000:—

| | £ | s. | d. |
|---|---|---|---|
| St. Jude's, South Kensington | 655 | 0 | 0 |
| St. Matthew's, Bayswater | 142 | 0 | 0 |
| St. Bartholomew's, Sydenham | 106 | 0 | 0 |
| St. John's, Paddington | 165 | 0 | 0 |
| St. Paul's, Knightsbridge | 268 | 0 | 0 |
| Holy Trinity, Tulse-hill | 171 | 0 | 0 |
| St. Margaret's, Westminster | 107 | 0 | 0 |
| Portman Chapel, Baker-street | 121 | 0 | 0 |
| Holy Trinity, with St. Jude, Upper Chelsea | 296 | 0 | 0 |
| St. Peter's, Kensington-park-road | 128 | 0 | 0 |
| Parish of St. Peter's, Eaton-square: Parish Church, £542; St. John's, Wilton-road, £67; St. Peter's Chapel, £6; total | 615 | 0 | 0 |
| St. Peter's, Cranley-gardens | 400 | 0 | 0 |
| St. Michael's, Paddington | 144 | 0 | 0 |
| St. Stephen's, Gloucester-road | 103 | 0 | 0 |
| St. Michael and All Angels', Southfields | 25 | 0 | 0 |
| Holy Trinity, Islington | 24 | 0 | 0 |
| Ilford Parish Church and Chapel | 33 | 0 | 0 |
| St. Barnabas', Pimlico | 32 | 0 | 0 |
| St. Paul's, Greenwich | 20 | 0 | 0 |
| All Saints', Clapham-park | 36 | 0 | 0 |
| St. John the Evangelist, Upper Holloway | 24 | 0 | 0 |
| St. Mary's Parish Church, Wimbledon | 51 | 0 | 0 |
| St. John's, Wimbledon, and Missions | 54 | 0 | 0 |
| Heath-street Baptist Chapel, Hampstead | 56 | 0 | 0 |
| Essex Unitarian Church, Kensington | 95 | 0 | 0 |
| Christ Church, Forest Hill | 54 | 0 | 0 |
| St. Mary Magdalene, Paddington | 32 | 0 | 0 |
| St. John the Evangelist, Penge | 96 | 0 | 0 |
| St. George's Presbyterian Church, Brondesbury | 20 | 0 | 0 |
| Church of Ascension, Balham-hill | 51 | 0 | 0 |
| St. Mark's Presbyterian Church, Greenwich | 33 | 0 | 0 |
| St. Paul's, Harringay | 28 | 0 | 0 |
| Highbury-quadrant Congregational Church | 65 | 0 | 0 |
| Greek Church, Bayswater | 72 | 0 | 0 |
| Highbury Presbyterian Church | 26 | 0 | 0 |
| St. John the Divine, Kennington | 51 | 0 | 0 |
| St. Luke's, Redcliffe-square | 90 | 0 | 0 |
| St. Matthew's, Sydenham | 26 | 0 | 0 |
| Trinity Presbyterian Church, Notting Hill | 29 | 0 | 0 |
| Catholic Apostolic Church, Maida Hill West | 25 | 0 | 0 |
| Camden Church, Camberwell | 44 | 0 | 0 |
| Lyndhurst-road Church, Hampstead | 75 | 0 | 0 |
| St. Mildred's, Lee | 32 | 0 | 0 |
| St. Peter's, Streatham | 45 | 0 | 0 |
| St. Anne's, Soho | 56 | 0 | 0 |
| St. Andrew's, Wells-street | 71 | 0 | 0 |
| St. Mary's, Graham-street | 27 | 0 | 0 |
| St. Matthew's, Upper Clapton | 30 | 0 | 0 |
| St. Michael and All Angels, Blackheath-park | 72 | 0 | 0 |
| St. Luke's, Paddington | 46 | 0 | 0 |
| St. Mary's, Newington | 21 | 0 | 0 |
| Park Chapel, Crouch End | 43 | 0 | 0 |
| St. Paul's, Finchley | 43 | 0 | 0 |
| Christ Church, Ealing | 20 | 0 | 0 |
| St. Saviour's, Ealing | 28 | 0 | 0 |
| All Saints', Blackheath | 43 | 0 | 0 |
| St. Andrew's, South Streatham | 22 | 0 | 0 |
| Emmanuel, West Hampstead | 36 | 0 | 0 |
| Rosslyn-hill Unitarian Chapel, Hampstead | 82 | 0 | 0 |
| Morden Parish Church | 22 | 0 | 0 |
| St. Stephen's, Wandsworth | 61 | 0 | 0 |
| Eaton Chapel, Eaton-square | 28 | 0 | 0 |
| St. John's, Bromley, Kent | 39 | 0 | 0 |
| Acton Parish Church and Mission | 42 | 0 | 0 |
| Chipping Barnet Parish Church and Mission | 23 | 0 | 0 |
| All Saints', Hatcham-park | 35 | 0 | 0 |
| St. Luke's, Battersea | 46 | 0 | 0 |
| St. Matthew's, Sinclair-road | 20 | 0 | 0 |
| St. John's, Red Lion-square | 21 | 0 | 0 |
| St. Mary Magdalene, Wandsworth | 31 | 0 | 0 |
| St. James's, West Hampstead | 83 | 0 | 0 |
| "F." | 50 | 0 | 0 |
| Hendon Parish Church and Christ Church | 42 | 0 | 0 |
| German Lutheran Church, Denmark-hill | 83 | 0 | 0 |
| St. Alphege's, Greenwich | 22 | 0 | 0 |
| Spanish and Portuguese Synagogue, Bevis Marks | 42 | 0 | 0 |
| St. Saviour's, Brixton | 44 | 0 | 0 |
| Hillingdon Parish Church and Evelyn's School Chapel | 34 | 0 | 0 |
| Christ's Church, Streatham-hill | 87 | 0 | 0 |
| Magdalene Hospital Chapel, Streatham | 28 | 0 | 0 |
| Church of the Ascension, Blackheath | 26 | 0 | 0 |
| Mr. W. Mann Cross, C.C. | 20 | 0 | 0 |
| St. Augustine's, Honor Oak Park | 44 | 0 | 0 |
| Holy Trinity, Beckenham | 27 | 0 | 0 |
| St. Luke's, Deptford | 43 | 0 | 0 |
| St. Pancras Parish Church | 42 | 0 | 0 |
| St. Mary's, Spring-grove | 33 | 0 | 0 |
| Old Malden Parish Church | 57 | 0 | 0 |
| St. Paul's, Herne-hill | 38 | 0 | 0 |
| New Court Congregational Chapel | 25 | 0 | 0 |

# THE LANCET.

*LONDON: SATURDAY, JULY 21, 1900.*


WE have the highest of all authorities for believing that "Wisdom is justified of her children." The truth of the statement must occur to the minds of most of those who read, or were able to hear, the Croonian Lectures which Dr. F. W. MOTT has recently delivered before the Royal College of Physicians of London. They are for the most part the product of the far-seeing wisdom of the London County Council in establishing a laboratory with adequate means for the investigation of the minute pathology of the diseases under treatment at their asylum. It is also an illustration, although not the first, of the wisdom exercised in the selection of a superintendent, whose diligent use of the few years in which he has been at work and his utilisation of the material which has come under his disposal are conspicuously shown in these lectures. We find, indeed, throughout them abundant traces of the work which made Dr. MOTT'S name familiar before his appointment and which furnished the ground on which his appointment was made, but the chief part of their substance consists of the results of researches undertaken by him, or under his direction, at the County Council's Pathological Institute at Claybury; and the extent of this, its value, as well as the manner in which it is presented, must excite the admiration of all those who are capable of estimating its worth.

Originality is the key-note of the presentation which is here given to us of the pathology of nervous disease. All that is presented with this freshness is not indeed new. Many as are the references to the work of others, such a description of the facts, even in the light of original research, must traverse the results previously obtained at more points than it has been possible to indicate. But this does not diminish the interest of the account or its value to all those who are at work on the same subject, and indeed to all those who care to give to the lectures the careful perusal which they require if they are to be perfectly understood. The subject does not lend itself to simple statement. The rapid advance of neurology has brought into almost colloquial use among experts many terms which are still unfamiliar to the majority and the amount of fact with which the lecturer has had to deal has compelled a condensed style which certainly needs close attention to understand. But the requisite attention will be forthcoming from the readers to whom the lectures specially appeal.

The title of Dr. MOTT'S lectures is alike accurate and misleading. The transformation of our conceptions of the nervous system involved in the doctrine of the "neuron" is vaster than is commonly conceived and its wide extent is illustrated in the subjects considered in these lectures. It will be noticed that a final "e" is attached to the word. "Neurone" is the French term, but in all other countries, and generally in this country, the word "neuron" is employed. The addition of the "e" is apparently due to the persistence of Professor SCHÄFER in applying the word "neuron" to the axis-cylinder process, commonly termed the "axon," in opposition to the general use of the word. Dr. MOTT'S modification of the term is harmless, but we doubt whether it will be effective to prevent confusion, or is really required. The vitality of words is often insusceptible of control, even as regards their form. The fittest survives, in contempt of etymology.

Even those who have some acquaintance with neurology might conceive that the title "degeneration of the neurone" would cover a limited region of the minute pathology of the nervous system. The perusal of these lectures will reveal to many for the first time the extent of the change in our conceptions which is involved in the new doctrine. The neuron is now perceived to be the universal unit of the nervous system, the element of its constitution in all parts, so that the "degeneration of the neurone" becomes conterminous with all the processes of degeneration in the nervous system. Not only does the lecturer frankly employ this wide conception, but he includes under the term "degeneration" the changes which are produced by acute processes as well as those which constitute the chronic changes to which the word is often restricted. He is thus able to stretch his net so widely as to gather in it most of the maladies which are not the result of obvious external inflammation. The subject is thus a very large one, and the variety of diseases which it includes is such as to permit, in respect to many, only a glance at those features which have a relation to the special subject.

It is at first somewhat startling to remember that the doctrine of the neuron is one which is still without actual proof. It is essentially founded on the discontinuity of the nerve elements which proceed from each single nerve cell. They were formerly thought to unite at their extremities, their nutrition being still believed to depend on their connexion with the cell. The union of the divided terminations of the branches is now doubted by most histologists. They are believed to be only contiguous, and that the excitation of the adjacent fibrils is effected by a process of stimulation and not continuous conduction. The belief that there is discontinuity rests on the fact that union cannot be traced. But the conditions of observation are such as to leave some investigators still in doubt regarding the validity of the general inference, although the evidence has been accepted so generally that pathologists have no choice but to follow the lead presented to them. The result affords an explanation of so much that was before obscure in pathology as to constitute strong evidence of the truth of the doctrine. This evidence is presented to us by Dr. MOTT with great force and for the most part with effective cogency. But he recognises that, though discontinuity is probable, the union asserted by some does not lessen the general significance of the "neuron" conception of distinct nutritional units. While he regards separation of the elemental parts of the nervous system as probable, he considers that it is not essential to the neuron-conception. He believes that the terminal branches of the processes may be sometimes separate and sometimes continuous. Some hesitation

may be felt in following him here. It is not likely that both systems obtain in the nerve-centres. On either view we can understand that secondary degeneration does not pass into the nutritional domain of another cell. But continuity involves simple conduction; discontinuity implies re-excitation. A new nerve-impulse is excited by the stimulus of that which reaches the adjacent termination of the neuron which conducts the afferent impulse, and the enormous augmentation which occurs in many central processes, as in reflex action, seems more readily thus explained. It is doubtful if we can assume the existence of the double relation or the occurrence of the double process.

As an illustration of the fact that at the present time research is only laying the foundations on which the future superstructure of knowledge must be built may be mentioned the discrepancy in the results obtained by staining the nerve-cells in artificial cerebral anæmia. In the parts of the brain thus deprived of blood considerable alterations are seen in the cells and their processes when these are stained by the Nissl and other methods, but when treated by the chrome-silver method of Golgi both appear perfectly normal, including the gemmæ on the branches. Dr. MOTT draws the inference that only a few of the cells are stained by Golgi's method, and that a large number escape perception altogether in spite of the perfect staining of those which respond to the agents. Considering that it is by this method that the absence of union between branches has been discerned, that it is on the results obtained by this method that the doctrine of separate neuron-units entirely rests, the statement, if true, seems to throw a good deal of reputed fact back into the crucible. We have here an instance of the mental reservation which must be given to many of the conclusions which are put forward as established facts, but which only merit at present provisional acceptance.

The development of the elements of the central nervous system is a subject of which Dr. MOTT has given a full sketch in his introductory lecture. It may at first sight seem anomalous that development forms part of a study of degeneration. But the reason is obvious, and the only objection that can be taken is to the narrowness of the title given to that which has so wide a scope. Development and decay are processes of opposite nature. They underlie the progress and cessation of the vitality of the tissues. The one attends the development of functional capacity, the other its failure. Dr. MOTT has given useful descriptions and illustrations of the remarkable results of the investigations of FLECHSIG, BECHTEREW, and others, which have established the differences in time at which the fibres of the central nervous system acquire their full structural development by the formation of the myelin sheath. The relative time at which this takes place corresponds with the order in which the functions are acquired that the structures subserve. The afferent fibres to the brain develop before those that conduct voluntary impulses, and among the earliest to achieve the myelination necessary for function are those which conduct impulses from the skin, joints, and muscles of the fœtus, whose movements must continually generate afferent impulses through the fibres. The researches of HELD have shown that function exerts a marked influence on this process of myelination. If one eye is kept closed the fibres from it develop perfect structure later than those from the eye which is open, but this is not the case if the animal is kept in the dark. There is, however, a tendency to ordered myelination independent of function. The latter has only a modifying influence, but it can clearly accelerate or retard the process.

It is not practicable to epitomise Dr. MOTT'S condensed sketch of what has been ascertained regarding the histogenesis of the sheath of Schwann, and the conclusions at present reached in regard to the development of other structures are not yet of clear significance. The special subject of the lectures, the degeneration of the neuron and its varied relationships, must be reserved for notice in another article.

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SEVERAL of the larger and smaller towns in this country have now come to be known, by their mortality and notification returns, to suffer to an exceptional degree from enteric fever in endemic form. In many of these places it has been found impossible to connect causally the continued prevalence of enteric fever with any of the agencies of infection to which pronounced epidemics of typhoid fever are commonly due. Specific pollution of drinking-water, milk, shellfish, ice-cream, and the like may indeed now and then have caused an increase of the customary amount of enteric fever; perhaps a particular period of sustained fever prevalence has seemed to have been started by an outbreak which was traceable to infected food or drink; but the appearance of enteric fever year after year in excessive amount has quite certainly not been occasioned by recurring exposure to infection through such agencies. Recently much attention has been given to the part which may be played by polluted soil in the transmission of enteric fever infection, and it becomes important to consider soil in this connexion. In individual instances the ability to carry infection of soil, using the word in the narrow sense of surface soil in the neighbourhood of dwellings, is often almost self-evident. Take the case, so common in many of our northern and midland towns, where there are rows of workmen's dwellings or cottages in which the houses open at the back to a common yard, unpaved, badly drained by open gutters, and served by one or more midden privies. Who that has seen the way in which slops are thrown about such yards and the manner in which refuse may be spilled over the surface when carried to, or removed from, the common midden can doubt that a case of enteric fever in a row of houses of this sort occasions risk by way of surface soil pollution to the occupants of the remaining houses—people who, for example, must needs be liable to carry into their dwellings on their hands or boots soil upon which infectious matter has been freshly deposited and to inhale infective dust blown about the common yard? To such and kindred causes, we may well believe, is due the contrast which medical officers of health have on occasion been able to demonstrate between a heavy incidence of enteric fever on particular groups of dwellings where these sanitary deficiencies abound and its much lighter incidence upon neighbouring groups of dwellings of similar class where opportunities of surface pollution are less.

To admit, however, that enteric fever may be locally

spread by way of the diverse and obvious opportunities of infection afforded by recently and specifically polluted surface soil brings us, it is to be feared, little nearer to understanding the causation of endemic enteric fever in the cases to which we alluded above. Ability of soil to act, as it were merely mechanically, as a vehicle of infectious matter which has just been deposited on its surface does not there meet the case. A satisfactory explanation as due to soil pollution of the endemic enteric fever to which we refer seems to require the further proposition that in certain circumstances the typhoid bacillus must be capable of maintaining for weeks and months an active existence in soil—an altogether different and more recondite question. The difficulties of the subject are well illustrated in the case of the city of Chichester, where enteric fever in endemic form has been excessively prevalent for a long series of years since 1870 and has remained prevalent notwithstanding that in the greater part of the city objectionable well waters have been replaced by a safer public supply and cesspools by a modern system of sewers. Dr. THEODORE THOMSON who, with Colonel MARSH, R.E., has lately made a highly instructive report to the Local Government Board on enteric fever at Chichester, a review of which will be found on p. 219, has brought to light many facts, positive as well as negative, which taken as a whole suggest that the explanation must be that there are circumstances of soil which in Chichester, or in certain parts of it, do in some way favour the viability and active growth of the typhoid bacillus in the soil. But what are these favouring circumstances? Dr. THOMSON shows that there exist in Chichester many and diverse potentialities of pollution of soil by organic matter. But, as he also points out, the mere fact that these potentialities exist is no explanation for a special proclivity of the typhoid bacillus for Chichester soil. They are present equally in other towns with no such enteric fever history as Chichester. If this special proclivity does exist—and in our present state of knowledge the assumption seems the one most likely to accord with the facts—it is probably determined by one or other of a large number of obscure conditions which have yet to be studied in this connexion, or by a combination of them. For the subject to be adequately pursued such factors as the physical and chemical characters of the soil, the degree of its moisture, the soil-temperature best adapted to the typhoid organism, and the nature of other organisms in the soil with which the typhoid bacillus has to compete for its existence must be reckoned with. Moreover, as Dr. THOMSON indicates, no investigation, however comprehensive, of soil in relation to endemic enteric fever would have much prospect of success if it were restricted to a single locality. We trust that the Medical Department of the Local Government Board, to which we already owe so much of our knowledge of the etiology of enteric fever, may be able to extend its researches in this matter into a wider field and to investigate endemic enteric fever differentially in typical instances in different parts of the country.

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MR. GEORGE EASTES, on assuming the responsible position of President of the Metropolitan Counties Branch of the British Medical Association, delivered an address entitled "Our Numbers and our Work at the Close of the Century," which is of considerable interest to the medical profession. The general conclusions to which he came on this important subject may be summed up as follows:—that there are great fluctuations within comparatively short periods in the numbers of the profession and therefore, of course, in the amount of work for medical men to do; that there is a great variety in different parts as to the proportion of medical men to population; and that of recent years there has been a marked tendency to increase in the numbers on the Medical Register whilst general medical work has, from the operation of many causes, undergone marked shrinkage in several directions. Mr. EASTES is of opinion that the work for medical practitioners to do is not likely to reach its former dimensions except under very special and temporary circumstances, as in the recent epidemics of influenza; and, speaking generally, that the outlook for medical workers is that they are likely to work under conditions of ever-increasing competition. Recognising, perhaps, that he has given rather a pessimistic forecast of the immediate future for medical men, he does his best later to correct such an impression and shows that there are some facts on the other side—happy spots where rivalry is not so keen, an ever-widening empire in which the demand for medical practitioners is felt, and the occurrence of wars in various parts which entail a sudden and an enormous increase in the demand for medical men. "Give to us peace in our time" is, we are sure, the prayer of the medical man as truly as it is that of every good citizen, but it cannot be denied that times of war create a demand for medical service.

There are places in the kingdom where, if mere numbers of patients can make practitioners happy, their bliss should be without alloy. Mr. EASTES shows that the proportion of medical men to population in Huddersfield, Norwich, Hull, and Bolton is very low. The happy practitioners of these towns have theoretically over 2000 persons dependent upon each of them for medical attendance. The other extreme is to be found in Brighton, where in 1881 there were only 741 persons to each practitioner, and where now there are only 615. The practitioners of London come next in paucity of patients, having each barely 800 persons to attend. Mr. EASTES tells us that in South Paddington, where the population has grown less by 3000 since 1861, the numbers of the profession have increased by 20 and the average of persons for each practitioner can be very few more than 300. The practitioners of these districts ought obviously to be in a very bad way, but we are not aware of any facts which go to show that they are more unhappy or less prosperous than those in Huddersfield or Norwich. Probably it will turn out that the mere number of possible patients is not the chief factor in the prosperity and happiness of the profession. It is more important for medical men to have a number of clients to whose needs they can do justice and by whom they can be adequately appreciated and rewarded. It must be remembered that these figures are subject to fluctuation in every locality, while the proportion of medical men to their patients throughout the kingdom is also constantly changing. For

example, in 1881 it was as high as 1718; now it is as low as 1393, which is almost identical with the proportion in 1861. Mr. EASTES quotes the late Dr. FARR as having 25 years ago said that the medical profession would not grow in proportion to the population and as having feared that "there was imminent danger that medical attendance might become quite inaccessible to vast numbers of people." Dr. FARR is not the only authority who has been thus apprehensive. The late Lord PLAYFAIR used to address warnings to the same effect to those who advocated bold measures for straitening the gate of the medical profession so that few should enter it. And undoubtedly it would be possible to carry such measures too far. The medical art, it must be remembered, is a necessity to all classes. The poor and the humble have the same need of it as the rich and the luxurious classes. But there is no immediate need for much anxiety on this subject, for the additions to the profession amount to hundreds every year. There are, however, some new facts in the problem which must not be overlooked. In 1861 there was a large class of unqualified assistants who did, roughly perhaps, a third or a fourth of the work of general medical practice. That element has been eliminated by the action of the General Medical Council or is in course of elimination. Medical work has been multiplied in various ways by the specialisation of medicine and by the great developments of medical education. The growth of wealth and of commerce involves an increased demand for medical service in all its branches—sanitary, medical, surgical, and special. Then there is the great development of our empire which throws so much serious responsibility on us for the welfare of those by whom it is extended and of the communities which come by their agency under our rule and care. Nothing in the last century can exceed the significance of the events which are happening while we write, teaching us that the millennium is yet distant and that enormous medical and surgical and sanitary problems will have to be solved before Africa and China can be brought within the pale of civilisation as we understand it.

Mr. EASTES thinks that the work of the general practitioner is much less than it was 30 years ago and that it is likely to continue so. The isolation of infectious disease and its treatment by the State, the abuse of hospitals, the multiplication of cheap dispensaries, the growing tendency of the public to take their advice from consultants and specialists of all sorts, all tend to lessen the work of the general practitioner and to lead Mr. EASTES to the conclusion that the profession is overstocked. Such facts are very important and call for much consideration, but we do not regard them as ultimate facts that are to dominate and degrade general medical practice for all time. In the very nature of things the general practitioner must always be the first and chief resource of the public needing medical advice. Palpable abuses which affect him injuriously will not last for ever. The general practitioner must meet the competition of consultants by dignified protest or by specialising his own education. He has only to perfect himself as a general practitioner to make himself indispensable in every community and to make the consultant in nine cases out of ten a luxury.

# Annotations.

"Ne quid nimis."

## THE CENTENARY FESTIVAL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ON Thursday, July 12th, Sir William Mac Cormac was unanimously elected President of the Royal College of Surgeons of England for the fifth time in succession. No one has previously held the position for so many years, although the late Sir William Savory was President from 1885 to 1888. Thus Sir William Mac Cormac this year holds an exceptionally honourable post. The centenary festival of the Royal College of Surgeons falls in troublous times. One hundred years ago the shadow of the domination of the First Napoleon, who for a brief space held continental Europe under his feet was just beginning to obscure the sun of liberty. To-day Europe and the United States of America stand confronted with the shadow of a far more barbarous tyranny arising from that race of which 1500 years ago Attila was the incarnation. But the forthcoming festival is in reality a peace congress, a living testimony to the advance of the art and science of healing, and it is fitting that its chief should be one so lately returned from ministering on the battle-field.

## THE TRAGEDY AT PEKING.

AFTER many days of conflicting rumours in which men expressed opinions and hopes that their reason refused to justify it has been borne in upon the civilised world that every man, women, and child in Peking foreign to China, and every Chinese native known to be in personal or religious sympathy with them, is dead. What horrors may have accompanied those deaths it is best not to conjecture, while the stories that have been circulated as to the way in which the women and children met their deaths within the walls of the British Legation are founded entirely upon imagination. Letters have been received in England speaking of revolvers carried by women in anticipation of the worst, while it is stated upon good authority that Lady Macdonald, the wife of the British Minister, went armed with poison even before the actual outbreak took place, knowing that she might need it for herself and for her children. In this course she cannot have been alone, but the actual events of the terrible closing scene are still unknown to us and may never be other than unknown. There have been massacres before where the natives of savage countries have wreaked their hatred suddenly upon the foreigner in their midst, but there has been nothing in history absolutely resembling the tragedy of Peking. England has had experience of terrible outbreaks of savagery at Cawnpore and elsewhere during the Indian Mutiny, and we have ever since had thrown in our teeth by European nations the penalties we exacted in reprisal and in reassertion of our authority. Now each nation of Europe having a political representative at Peking knows that that representative, with wife, children, and household, has been butchered, knows that every citizen it has sent out to spread its commerce, to preach its religion, to disseminate its science and its civilisation has either been slaughtered in the Chinese capital or in some other part of the Chinese empire stands in imminent danger of a hideous death, and the spirit that is abroad is certainly not one of meek forgiveness. Europe will exact a reckoning, though to whom the bill should be presented is, in the present state of our information, obscure. Every day makes it clearer that

the outbreak is not merely the work of a secret society in rebellion, too strong for the Imperial Government to cope with, but a national movement with which many in high places connived, which was incited and abetted by those who at different stages have professed hostility towards it, and with which the majority of those responsible for the government of the country sympathised in their hearts if not with their voices. In such circumstances it seems inevitable that there should be a war in which the combined forces of Western civilisation will meet the vast hordes that an ancient Eastern civilisation—for up to a point the Chinese are a civilised nation—can bring against them, and that such a war should be primarily a war of vengeance. Chinese cruelty and treachery have been brought home to European nations before, but an act that simultaneously involves them all with America and Japan in the cry for reprisals must, if the act is brought home to the Chinese Government, produce extraordinary consequences. The Chinese may possess an ignorant mob, but the mob has been led in its fury and instigated to its crime. Those who govern China are not uncivilised savages and cannot claim indulgence as such. Centuries have elapsed since their ancestors first rejected our envoys and refused to let them reside at their capital; since then they have for years had their own accredited representatives at European courts, while Chinamen of all classes have been brought into contact with Europeans all over the world; and yet the blow has been allowed to fall without warning, and as far as can be judged every artifice of Oriental duplicity has been employed to conceal the truth as long as concealment was possible. It may be easy to justify the resentment of the Chinese people at the encroachments of foreigners, or at what it has regarded as such; and to explain that the efforts of missionaries to propagate Christianity have not only been comparatively fruitless but have given opportunity for rousing all classes against all strangers whether missionaries or not, but the nations now apparently united in a common cause will not be easily persuaded that the tragedy of Peking, and others perhaps of less magnitude but no less terrible, that may follow, could not have been averted or delayed by those who can be made in some degree responsible. At present all the principal nations of the world seem in the last years of the nineteenth century and within a year of an international peace conference to be on the brink of a war that will demand for its successful prosecution all the resources of their science and civilisation, while all the moderating influences of Christianity and civilisation will be needed to limit its duration and mitigate its horrors. Possibly not till it is ended shall we know at all accurately what has already taken place, while it seems likely that the fate of individuals will, perhaps mercifully, remain for ever veiled. Among these are members of the medical profession. Some have been named already and our readers must be able to reckon others among their friends or acquaintances who may, or may not, have taken refuge in the capital hoping for comparative safety there. Others, again, at present survive, settled in towns that once seemed to be safe or scattered and isolated in spots where they hoped to benefit fellow-men, combining mission work with medicine. For all these the outlook is a very grave one, and if we may be cheered in time by finding that the rising has spread less widely than has been anticipated we may, on the other hand, still have news to face even worse than that which has come to hand. To all those, therefore, who have given up hope for those whom they loved, or who are suffering from the heavy strain of anxiety on their behalf without news to relieve it, we tender our deep and sincere sympathy.

## THE LUNACY SCANDALS IN ST. PANCRAS.

As we announced in our issue of July 14th the Local Government Board by means of their inspectors, Mr. H. Lockwood and Dr. A. H. Downes, opened an inquiry on Tuesday, July 10th, into the alleged irregularities which have recently taken place with regard to the certification and removal of lunatics. The inquiry closed on Thursday evening, July 12th, and the evidence taken was chiefly that of parish medical officers and of relieving officers. Evidence showed that the relieving officers expected to get "tips" from both parish medical officers and from the proprietors of private lunatic asylums. If they did not get their tips from the parish medical men these latter got no lunatics to certify. Mr. Lockwood adjourned the inquiry, so at present we shall not comment upon the matter, it being practically *sub judice*. We may mention, however, that the Local Government Board have issued a letter to clerks of boards of guardians in which, without referring by name to any particular parish, they say that they know that payments have been received by relieving officers from parish medical men and proprietors of licensed houses in connexion with the certification and admission of lunatics in at least two parishes. Further, they have reason to believe that this practice exists in other parishes. The Board therefore wish it to be understood that they consider the practice as indefensible and that no officer offending in future should be allowed to retain his post. This expression of opinion does not mean that the past will be condoned.

## SIR WALTER FOSTER AND THE MEDICAL ARRANGEMENTS AT THE SEAT OF WAR.

REFERRING to an annotation in THE LANCET of July 7th Sir Walter Foster courteously furnished us with a reference to the seventh edition of Parkes's Practical Hygiene as the authority for his statement that in the opinion of the late Professor de Chaumont the amount of hospital accommodation to be provided for an army on field service should not be less than 25 per cent. We have now had the opportunity of verifying the correctness of Sir Walter Foster's quotation, which we gladly acknowledge. This amount of hospital accommodation struck us at the time as being very large and as impracticable, if not, indeed, unnecessary, for a force operating under the conditions and circumstances that ordinarily obtain in modern warfare. We desire to add that we are not only justified in holding that opinion, but in now claiming it as that also of those responsible for the subsequent edition (the eighth) of Parkes's Hygiene, and we can only regret that Sir Walter Foster did not prosecute his inquiries a little further by quoting the latest edition of that work in making a public statement, in which case he would have escaped being misled himself and of unwittingly misleading the House of Commons. The seventh edition of Parkes's Hygiene, edited by Professor de Chaumont, was published in 1887. A good deal has happened since then. In the succeeding edition (the eighth) published in 1891 and edited by Professor Lane Notter, the present professor of military hygiene at Netley, we read: "*Amount of hospital accommodation.*—This must not be less than for 10 per cent. of the force, with reserve tents in rear in case of need." This quotation is from page 674, Chapter VI. We could understand that for exceptionally unhealthy climates and seasons an exceptional rate of hospital accommodation might, of course, be necessary, but for an army of a strength of 200,000 operating in a climate like that of South Africa 25 per cent. seemed to us an unreasonably high estimate. But assuming that there had been hospital accommodation for 50,000 sick and wounded in South Africa we fail to see how it would have availed to meet such an emergency, say, as that

of a force outmarching its supplies—unless it was known beforehand where the army was going and the hospital supplies could have been sent there in advance. Be this as it may, there are a few other points to which we may take this opportunity of referring in connexion with the mortality of typhoid fever. If Sir Walter Foster will refer to the *Times* of July 12th he will find a communication from Mr. Sydney Holland in which Mr. Holland seeks to correct an erroneous inference deducible from a previous letter. Mr. Sydney Holland gives a statistical table of typhoid fever cases admitted into the London Hospital from 1895 to 1899 (inclusive) from which it will be seen that the rate of mortality per cent. among males between 20 and 30 (soldiers' ages) was 22·35. As regards Brand's statistics they do not seem to us to be to the point, unless the ages of the patients are stated and we know how many of the shortest and mildest forms of fever were included to make up the totals. If we recollect aright, too, those tables were to illustrate the beneficial results of the cold-bath treatment of typhoid fever, and we can scarcely suppose that Sir Walter Foster expects that this method of treatment can be had recourse to under all the conditions of war.

## THE NEW INFIRMARY OF ST. MARY'S, ISLINGTON.

ISLINGTON justified its old title of "merrie" by the way in which its inhabitants received the Duke and Duchess of York on Monday, July 16th, when they went to open the new infirmary which is expected ultimately to have accommodation for 800 people. Nothing could be more satisfactory than the opening ceremony, and nothing could be more sensible and to the point than the address of H.R.H. the Duke of York. Whatever difference of opinion there may be about the expediency of providing palatial residences for paupers, there can be none about the propriety of providing infirmaries for the sick and dying poor with every amenity that can mitigate their suffering and give them a sense of being cared for and considered. The guardians of Islington confess to an expenditure on this institution of £273,000 and we shall not be far wrong in reckoning that it will cost the ratepayers £300,000 before it is finished. This is a royal expenditure and could scarcely have been exceeded by the Metropolitan Asylums Board. But it is not too much if the ratepayers and the poor for whom they cater have got a *quid pro quo*. We are not satisfied on this point. The beauty of the whole is spoilt by the way in which the various parts of the brick building are jumbled together. There is an absolute absence of all grace of structure and architecture. The operating theatre and the laboratory, which should have been cheerful and light chambers, were dark and dismal even in the bright summer day of the opening ceremony. It is perhaps premature to judge the operating chamber, but its essential faults of structure and lighting and the absence of safeguards against septic organisms are very obvious; such safeguards, too, are conspicuous by their absence in most of the wards. It is gratifying to us to be able to hope that there are no medical men on the building committee who must bear the responsibility of this building, which might have been graceful and perfect in its way, and ought to have been so considering the money of the ratepayers which has been lavishly spent upon it, but which in point of fact is in every way disappointing.

## MR. LONG AND RABIES.

IT is probable that no one in England has been more abused by a certain section of the dog-owning public than has the present Minister of Agriculture. The application of the muzzling order has been the cause of a good deal of excitement at various times, but the results which have been attained have fully justified the means employed. There is less rabies in Great Britain than there has been for many years; in fact, it may be said to be practically stamped out. This splendid result, which has been achieved over a terrible disease at the inconvenience only of the canine world, is solely to be attributed to the energetic measures taken by Mr. Walter Long and his veterinary advisers, and too much praise cannot be given to those gentlemen for what they have done. There is no more awful disease, either in man or animals, than rabies, and the enviable position which has been attained for this country in being able to declare itself practically free is one which must be maintained at all costs. Strict quarantine regulations with veterinary and police supervision for a certain period of time are annoyances which owners ought to consider as very trivial when compared with the advantages and safety that they confer not only upon themselves but also upon their pets. According to the returns of the Board of Agriculture there were only nine cases of rabies reported in 1899, whereas the corresponding numbers in 1896, 1897, and 1898 were 438, 155, and 17 respectively in dogs alone, whilst in other animals no cases occurred in 1898 or 1899, but in 1896 and 1897 the numbers were 22 and 36 respectively. These statistics speak for themselves and although the time cannot be very far off when the muzzling order will be removed from every part of England it is to be hoped that if any error is made in this direction it will be rather on the side of safety than otherwise. Mr. Long has indeed earned the gratitude of the country for the extinction of rabies alone, and as a nation we are to be congratulated upon having a Minister of Agriculture who has so perseveringly carried through to a successful termination a measure which for a time caused a great outcry and brought down upon his head a violent torrent of sarcastic criticism.

## THE EPIDEMIC OF FORTUNE-TELLING.

So long ago as March 31st last a person described as Zuleika Cavalier, aged 30 years, and married, was brought before the magistrate at Marlborough-street and charged with telling fortunes at an address in Bond-street. After being remanded she was eventually fined £25 and ordered to pay £10 costs, upon which she gave notice of appeal. In view of the appeal we did not criticise her case at the time, but now that Mr. McConnell, Q.C., sitting as Chairman of the Court of Quarter Sessions at Clerkenwell, has dismissed the appeal with costs we are at liberty to do so. The prosecution of gypsies for cozening servant-maids out of their wages by promises of wealthy suitors and other desirable prospects are more or less frequent, but it has been a matter of observation that of recent years persons professing to tell fortunes for the benefit of those moving in higher social circles than these have been permitted to ply and advertise their trade in the more fashionable streets of London and other towns with openness and impunity. We need not recapitulate the evidence given against Zuleika Cavalier, but we note that among the materials for her conviction found by the police in her room was a correspondence with a married woman who had inquired when she would be a widow and also as to who would be her next husband. It seems clear from such instances as these, if it required demonstration, that there are women who need protection from the suggestions of the fortune-teller apart from those whose credulity may merely cause them to suffer in pocket. The various devices most often associated with the ambition to pry into the future are of venerable antiquity, but Zuleika Cavalier does not seem to have earned the £1500 a year with which the police credited her by following

the methods of the orientals in whose costume she masqueraded. Perhaps her visitors were so numerous that she had no time to linger over her divination. She did not use the tarot or tarots, cards in a pack of 78, a very ancient device popular with gypsies of all ages and, as it seems to us, a somewhat mechanical means of lifting the veil of futurity. Nor did she produce in herself hypnotic conditions by gazing into the crystal ball or the ink-pool, a far more imposing and at least as venerable a form of divination; nor did she indulge in an exhibition of cheiromancy, lithomancy, pyromancy, or kapnomancy. According to her own account she adopted a plan which if not picturesque was businesslike and not altogether without precedent: she shut her eyes, ejaculated a prayer, touched the hand of her subject, and proceeded forthwith to see "mental pictures" on his behalf. These pictures in the case of the Hon. A. Macdonnell, to whom the public is indebted for the recent prosecution, were of a decidedly definite rather than of an impressionist character, one of the incidents foretold to him being that he would shortly receive a portrait of one of his ancestors anonymously and would find at the back of it a piece of paper leaving him a fortune which would partially atone for a great wrong done to him by an ancestor a long time ago. A lady who has extracted £1400 or £1500 a year from the credulous by simple and romantic tales of this hackneyed type will not find it difficult to pay the fine inflicted on her. She will, however, bear in mind that the powers of the magistrate who sentenced her were not limited to the power to inflict a fine and that moreover on a second conviction for a similar offence they are considerably increased, as he is then empowered to deal with her as an "incorrigible rogue." At the same time she will have good cause of complaint if after she has herself been punished according to the law her numerous rivals in trade are allowed to flourish in defiance of it.

## REST-HOUSE *v.* WORKHOUSE.

WE have frequently pointed out that our modern Poor-law, forced into existence as it was by the spoliation of the monastic institutions which formerly ministered to the poor, was hopelessly defective in one respect—namely, that no line of demarcation as to treatment was drawn between those who had failed in life from sickness or bad fortune and those who were idle, drunken, and improvident. That a man or woman who had worked all his, or her, span of working life should when no longer able to work be relegated to the same place and the same treatment as the tramp and the loafer is not only inhuman but immoral, and we therefore offer our warmest congratulations to the guardians of the poor of St. Olave, Southwark, for the new departure which they have taken. The new rest-house, for so it should be called, is situated at Ladywell, and was formally opened upon July 12th by the Prince and Princess of Wales. The total extent of the site is 34 acres and there is accommodation for 812 persons. Although, of course, the institution is still under the Poor-law the inmates will be treated in a manner as home-like as possible and the stringency of workhouse regulations is much relaxed. In the words of Mr. Shand, the chairman of the board of guardians, the building is to be a "home of rest for those worn-out sons of the State who through no fault of their own have come to poverty in their old age and are in need and necessity." The Bishop of Southwark opened the proceedings with prayer and the Prince of Wales in a few simple words expressed his pleasure at the new departure in the treatment of the aged and infirm poor. The Bishop then pronounced the benediction and the proceedings ended. Ratepayers rightly grumble at the enormous sums which they are compelled to disburse for educational experiments, but no one will complain at having to pay to make the close of life easier for those who have reached the last stage of their pilgrimage here.

## A FRENCH CRITIC ON BRITISH ARMY SURGEONS.

M. JEAN CARRÈRE, the able special correspondent of the Paris *Matin*, is now in South Africa. In the course of his very interesting letters he has on several occasions spoken in high terms of the British army surgeons with whom he chanced to make acquaintance. In a recent letter he described a visit to the hospital ship at Simonstown where he went to visit a French prisoner, M. du Feissal, who was wounded by the same shell which killed Colonel de Villebois-Mareuil. On reaching land again M. Carrère writes as follows, and in translating we seek to preserve his colloquial unconventional style:—

"We entered an hotel where they served us with unnameable things which we watered with a doubtful Moët violently acidulated. Then who should turn up but Dr. Carré whom we had searched for all the day. Thus we must never despair of anything. I am introduced. Dr. Gerard Carré, as his name indicates, is of French origin. He is young, about 30, fair, aquiline nose, fine beard, blue eyes. We drink and are 'chums' at once. He speaks to me about his patients with a fraternal gentleness that touches me and goes straight to my heart. I then remember the letter of Dr. Roë. What delightful beings these doctors are; and if ever I have said any evil about them I tender to them all collectively my apologies. During my journey I have frequented many of them and I have taken to love them sincerely. Evidently they do not cure death; but really, is that quite necessary? In my opinion they do better than this. They bring us the illusion of the life everlasting. And then, and above all, they are men of heart. From whatever country they may come they are all the same. The habit of living on the frontiers of humanity has conferred on them all pitiful and indulgent souls; and in the perpetual tumult of passions and conflicts, between men and races, they are the link of all possible concord and form in their immense federation of the Red Cross the International of Mercy."

## ADULTERATED VINEGAR.

THE addition of sulphuric acid to vinegar, though in small quantity, is apparently still practised according to the recent report of the medical officer of health and public analyst for St. James's, Westminster, Dr. James Edmunds. He reports four cases dealing with this impurity in vinegar which were "tenaciously defended by manufacturers standing in the background." Convictions, however, were obtained in all the four cases. The chief question at issue in these cases is, it seems to us, whether such an addition is injurious. In a great number of instances there is no evidence forthcoming to show that the use of substitutes or the addition of preservatives or foreign substances is actually injurious to health, but we have always maintained that unless the purchaser is supplied with exactly the article which he asks for fraud is committed. In other words, if an article is substituted for the one demanded a case for prosecution is immediately established, although the substitute may be perfectly wholesome and non-injurious to health. These observations apply to vinegar. A pure malt vinegar should be nothing but what is in reality pure beer soured by acetic fermntation. But until the law states very precisely what this and other articles should consist of the increasing tide of substitutes will never be stayed. We doubt whether such a requirement will ever become a law of this country; it would not be practicable to enforce and it would be a source of great inconvenience, especially to the poorer class of consumers. The enormous increase in the consumption of food entailed by an ever-swelling population in our big towns and the demand for cheaper articles have brought about an

inevitable result—the production of various articles of food on a much larger scale and at a much cheaper rate. The materials used of yore have thus necessarily given place to substitutes which in their way are good and wholesome enough, although they cannot be regarded as conforming to the standard of the article produced in the time-honoured way. Beer may be quoted as an example. There is very little beer produced in this country which is brewed entirely from malt and hops. Both grain and bitter substitutes are employed and these produce an excellent and wholesome beverage, but it is not beer if we accept the definition of that article of consumption as being a fermented infusion only of malt and hops. We are inclined to take the view that the object of manufacturers on the whole is more to effect economy and to supply an attractive and uniform article than to create mischief. Indeed, in some instances different modes of manufacture have been adopted in accordance with modern scientific knowledge which have resulted in a better product. Though, strictly speaking, such recourses are not absolutely necessary, yet for all modern practical requirements they have become indispensable. It seems to us that there should be no difficulty in deciding when a manufacturing practice is objectionable or upon the suitability of a substitute for human consumption, while there can be no doubt at all as to the course to be taken when an article of food is proved to have been misnamed. This is exactly one of those matters with which we had hoped that the court of reference which it was suggested should be appointed to control the operations of the new Food and Drugs Act would deal.

## EMPHYSEMATOUS GANGRENE FROM INFECTION BY THE BACILLUS AEROGENES CAPSULATUS.

IN 1891 Dr. Welch of the Johns Hopkins University reported the discovery of a gas-producing bacillus in the blood and tissues of a man who died after rupture of an aortic aneurysm. In 1892, with Nuttall, he published a study of this organism which he named the "bacillus aerogenes capsulatus."[1] It is one of a number of organisms capable of producing gaseous necrosis of living tissues—emphysematous gangrene. Koch's bacillus œdematis maligni is another organism of this group. Recently we have referred to cases in which gaseous abscesses followed hypodermic injections from infection by an organism discovered by Veillon and Zuber in various fœtid and gangrenous abscesses and termed by them the "bacillus perfringens."[2] In the *Boston Medical and Surgical Journal* of June 7th Dr. Paul Thorndike has described two cases of infection with the bacillus aerogenes capsulatus. A man, aged 45 years, fell to the ground from a height of 10 feet, sustaining a compound fracture of both bones of the forearms. Under ether the wound was thoroughly cleansed with sublimate solution and a sterile dressing and plaster-of-Paris were applied. At the end of the first day the plaster-of-Paris was removed in consequence of the pain. There was semi-delirium and the temperature was 102° F. On the following day cyanosis of the fingers and great swelling and emphysema of the forearm were present. On the third day he failed markedly and the emphysema extended to the shoulder and chest. Amputation was performed at the shoulder-joint. Both flaps were emphysematous. He rallied well, but 36 hours after the operation the septic symptoms returned and he died two days after the operation. The arm when removed was much swollen and tense. The forearm was of a deep plum-colour and the hand and fingers were dusky-red. Bullæ varying from five to 25 millimetres in diameter, filled with clear serum, were irregularly distributed over the forearm. Everywhere below the elbow the tissues were like a cushion and the slightest pressure produced crackling. In the upper arm along the brachial trunks crackling was also present. From a puncture in the forearm serum and gas were poured out. The cut surface was gelatinous and in parts semi-diffluent. Sections from several areas in the forearm showed its invasion by a long bacillus which had all the characteristics of the bacillus aerogenes capsulatus. In the spleen microscopical examination showed several foci of the bacillus. In the second case a man, aged 33 years, had compound fracture of the leg. On the third day the foot was cyanotic and painful and bluish mottled spots appeared on the leg. On the fourth day the leg was covered with blebs and there was a foul discharge from the wound. Emphysema appeared and extended above the middle of the thigh. Amputation was performed at the middle of the thigh through diseased tissue and drainage was provided. On the seventh day emphysema reached Poupart's ligament. Under ether long incisions were made in the crepitating area and the disease ceased to extend. Recovery ensued. Dr. Thorndike insists upon the necessity of operating as early as possible in these cases, and he thinks that the operation in the first case was performed 24 hours too late.

[1] Johns Hopkins Hospital Bulletin, vol. iii., 1892, p. 81.
[2] THE LANCET, April 7th, p. 1021.

## THE CHEMISTRY OF SOOT.

THERE is a very general impression prevailing that soot is simply carbon, but chemists have long known that though carbon is its chief constituent yet there are present other elements, amongst which hydrogen and nitrogen may be counted as of some importance. Indeed, it has been stated that soot is an impure hydrocarbon containing a very large proportion of carbon relatively to the amount of hydrogen. Soot possesses some peculiar properties. As everybody knows, the fact of the very characteristic and so-called smell of soot being in a domestic apartment generally portends wet weather or it may occur simultaneously with the onset of hot weather. It is probable that a reduction in the height of the barometer and an increased amount of moisture in the air are conditions which combine to expel a substance from the soot of our chimneys the peculiar smell of which is so noticeable in the room. The smell suggests ammoniacal compounds, and we are not surprised to find that a recent analysis has shown that soot contains no less than 7·4 per cent. of ammonium salts. This fact amply accounts for the value placed on soot for agricultural purposes. Again, it may be remarked that soot on burning in a more or less confined area (as in the case of a chimney on fire) evolves a characteristically persistent and most nauseous smell. This peculiar characteristic is likely enough due to the presence of nitrogenous organic compounds. Needless to add it is very probable that partly on this account the horrible fumes emitted from a chimney on fire are intensely poisonous; and on this ground alone punishment should be severely dealt out to the person who allows this disgusting pollution of the air to take place.

## A FORGOTTEN PHYSIOGNOMIST.

AT the present time the study of physiognomy has dropped so much out of sight that we are apt to forget the exaggerated importance that was attached to it in the distant past. The first student of physiognomy on record is Aristotle, who invented the term to designate the art of discerning character in man by means of the features of the face. Cicero was a notable physiognomist, but it was not until the dark ages began to be illuminated that the subject attracted popular attention, enlisting numerous exponents. In the eighteenth century Le Cat and Pernethy both produced elaborate essays on the subject, inaugurating the system

which is at present followed, but the best known authority during this period is Lavater who was led to undertake "the study of Physionomies" by "the turn of the neck" in a soldier who happened to pass by a window where the "citizen of Zürich" was standing with his friend "Mr. Zimmerman, physician to his Britannick Majesty of Hanover." Lavater informs us that he "began oftener than once to study the authors who have written on Physiognomy, but was soon disgusted with their verbose jargon ..... most of them chiefly pilfered from Aristotle." There is, nevertheless, an earlier physiognomist whose work, whatever may be the verdict as to verbosity, is certainly not jargon. Long buried in oblivion this remarkable volume, which bears the date of 1615, was brought once more to light a year or two since by Professor Mantovani of Bergamo. The name of the forgotten author is Samuel Fuchsius, but whether or not he was a relation or descendant of the celebrated botanist is uncertain. On his title-page he informs us that it is his purpose to treat of the "symptomatic values of the forehead and eyes in determining the characters as well as the ntellectual and affective aptitudes of men." Besides an introduction the treatise comprises 34 chapters, of which 15 are devoted to metoposcopy and 19 to ophthalmoscopy, both divisions being profusely illustrated by portraits, plates, and diagrams in the most approved style of the period. "I expose," says Fuchsius in his exordium, "if not perfectly at least to the best of my ability and in all honesty, the substance of physiognomy: if many bewail the sad fates of Cato and of Cæsar, the victims of adversity, how much more rational would it not be to explore the destinies of our own contemporaries and to foresee with quasi-divine prescience how much of criminality and how much of rectitude each one of us bears within him? You may, O Mortals! entrench your voices behind the double rampart of your lips and teeth, but for all that your foreheads and your eyes will continue to afford an infallible means of detecting your inmost thoughts in all their bareness, devoid of all the disguises of fiction." Before entering into details Fuchsius at considerable length, and exhibiting a quaint mixture of determinism and pessimism, maintains that since all qualities, good, bad, or indifferent, are part and parcel of human nature it follows that the means of giving outward and visible expression to those he possesses must necessarily exist somewhere in each individual's body. Then taking his examples from among the sculptured effigies of historic personages he proceeds to substantiate with more or less success the correctness of his theory. Foreheads he divides in the first place into large and small. "A small forehead is the index of a small, narrow, feminine mind, and rarely will the owner of such an one be found endowed with the qualities which conduct to the temple of glory and renown: he will be irascible, curious, prone to avenge himself, and credulous of falsehoods and old wives' tales." Next the author passes in review a whole regiment of foreheads of different shapes and sizes—long, broad, low, round, square, projecting, retreating, &c. Criminals with ambitious proclivities, such as assassins and highway robbers, have narrow foreheads; in fact, it is in people of this description that the minimum diameter is to be met with. A low-type forehead shown in one of the illustrations is remarkable as presenting an almost complete collection of the modern stigmata of degeneracy; and equally worthy of observation it is that Samuel Fuchsius in the seventeenth century should have regarded a profusion of coarse hair as usually associated with a feeble or disordered intellect. Among many other interesting points commented upon in the first part of the book the wrinkles in the foreheads of melancholiacs and also in those of the newly-born children of elderly parents may be mentioned. In the second part, under the head of Ophthalmoscopy, Fuchsius again displays wonderful perspicacity. More even than the forehead, he says, the eye is capable of betraying the most delicate play of passion in the human mind, as well as of indicating with the utmost preciseness the degree of intelligence which the individual possesses. In considering the eye we should take note of its accessory in addition to its essential parts. Heavy eyebrows are an attribute of robbers, liars, and homicides. When straightly drawn they denote sadness; if arched, arrogance; if bent inwards towards the root of the nose, austerity. Large eyes reveal laziness; small eyes are found in cowards and misers. An episcleral circle marks premature senility; strabismus is often the outward sign of partial amentia; while pigmentary anomalies in the iris betoken eccentricity and imbecility. "Eyes which are apt to tremble and be convulsed upwards indicate the sacred disorder, but are likewise a characteristic of cruel men, of murderers, and of all persons possessed by malignant spirits." The passions and affections, without exception, have their indices in the human eye. The descriptive list supplied by Samuel Fuchsius is admirably conceived and executed, but its great length renders it exclusory.

## THE EARLY RECOGNITION AND TREATMENT OF NEUROSES IN CHILDHOOD.

DR. CHARLES L. DE MERRITT deals with this important subject in a paper published in the *New York Medical Journal* of June 16th. He refers to the common existence of hysteria and neurasthenia in children and urges the importance of recognising the symptoms early, as he believes that a majority of such cases among adults have their insidious beginning in childhood. A medical practitioner who is consulted by parents about an irritable, highly-strung, eccentric child will often give some commonplace advice about diet, rest, &c., and generally tell the parents that "the child will out-grow it," which assuredly he or she often will not. The neurotic element or morbid taint present is not detected in time, and for want of proper moral and hygienic restraint the child grows and reaches maturity with his or her nervous force already exhausted, "another recruit for the army of neurological wrecks whose existence is one of the most appalling problems of present-day society." In such cases it is often possible to trace heredity both as a direct and an indirect factor. By the latter is meant the deleterious influence exercised in infancy and early childhood by neurotic parents who scold and nag their children incessantly and yet have not the will power to enforce real discipline so that what little of mental equilibrium the child may possess is speedily destroyed. As regards overstudy in school Dr. Merritt does not regard it *per se* as the chief factor of breakdown in school children. "German children," he says, "study harder than ours, yet they collapse much less often because their home life is more sedate and precocity is suppressed, not encouraged as is too often the case in American homes." Lack of exercise and of fresh air are prolific causes of neurotic troubles. Other causes are poor or insufficient food, anæmia, and the infectious fevers. The symptoms most frequently met with are insomnia and pavor nocturnus, great irritability of temper and disposition, a tendency to lie and to impose upon people for no apparent reason but the love of so doing, masturbation, fits of crying and paroxysms of passion upon little or no provocation, habitual feigning of illness, and an undue desire and craving for sympathy. With reference to treatment the parents must first be scrutinised, the anomalous symptoms must be traced to their source and treatment must be adopted accordingly as experience directs. Rest from school study must be prescribed with caution, for the relaxation of the mental and moral discipline of school life may harm rather than benefit a young

hypochondriac who is disinclined to associate with his fellows, who prefers solitude, and who broods over his feelings. The gymnastics now taught in most schools constitute a very valuable means for promoting physical health and they deserve encouragement. If the parents are themselves neurotic and hypochondriacal it must be explained to them how such defects react upon the child and how the mischief of imitation should be obviated. Drugs are of secondary importance. Bromides and hyoscyamus may be used for a time, and warm sponge-bathing at bedtime is also useful. The distinction between hysteria and neurasthænia is of little practical importance in children and does not affect to any extent the treatment to be pursued.

## A MEDICAL MAN'S HUNTING ADVENTURE.

IN his interesting and profusely illustrated work, "Under the African Sun" (London: William Heinemann, 1899), Dr. Ansorge graphically describes an exciting adventure which happily was not attended with the serious consequences that at first seemed probable if not inevitable. While he was crawling away "on all fours" from a wounded rhinoceros the author's Martini rifle which he was dragging along with the left hand suddenly exploded, its muzzle at the time being pointed at his left foot and almost in contact with it. He supposes that the trigger caught in some stubble, but be this as it may the bullet passed clean through his foot drilling a hole at the base of the great toe where it joins the metatarsus. The two natives who were with Dr. Ansorge at once jumped up and ran away, whereupon he too jumped up and ran, but within 50 yards or less he sank to the ground overpowered by the pain. Fortunately the vision of the rhinoceros is very dull; the animal galloped off without seeing any of the party, and so the wounded man was able to attend to his injury. With great difficulty he succeeded in removing his heavy shooting-boot and blood-stained sock, but by that time the toe was cold, blue, and apparently dead. Tearing off a long strip of cloth to serve as tourniquet and bandage, Dr. Ansorge contrived to staunch the flow of blood, and as he luckily had a light network hammock with him his servants found no difficulty in carrying him back to Fort Smith. "What worried me on the way," he adds, "was not so much the pain as the thought that, if the great toe was really done for, I should have to amputate my own toe, not a very pleasing prospect; or, as an alternative, something even more disagreeable to contemplate, I should have to ask one of the officials at the fort to cut the toe off, and not one of them had the necessary surgical knowledge." However, "all's well that ends well"—during the three hours occupied by the return journey the collateral circulation had time to establish itself, and eventually under simple antiseptic treatment the digit became for all practical purposes as good as ever. At first there was considerable stiffness of the joint, but the long tendon upon which so much of the movement of the hallux depends became thoroughly reunited, although it had been completely cut through by the bullet, and in the course of a few months the parts had regained most of their original efficiency.

## THE NEW UNIVERSITY OF LONDON.

THE members of the respective faculties of the new University, whose names are published in the regulations, are requested by Sir H. E. Roscoe to attend on Oct. 12th at the University Buildings, South Kensington, at 4 P.M., for the purpose of the elections under the statutes. The elected members will serve upon the Senate, the first meeting of which is intended to take place on Oct. 24th. The members are thus divided in the various faculties: Theology, one; Arts, four; Laws, one; Music, one; Medicine, three; Science, four; Engineering, one; and Economics and Political Science, one. In addition to the members elected by the faculties, 16 will be elected on Oct. 9th by the graduates in Convocation, of whom two will be elected by the registered graduates in Medicine and Surgery, six in Arts, one in Laws, one in Music, and six in Science.

## THE NEW PSYCHOLOGY.

DR. HENRY MAUDSLEY has published in the July number of the *Journal of Mental Science* a valuable contribution relating to the new psychology from a critical standpoint. Dr. Maudsley at the outset points out the various and somewhat arbitrary distinctions that have been drawn between the titles "mental science," "mental physiology," "psychology," and "mental philosophy." Under these titles we have at the present day "four formidable systems dealing with one and the same subject, yet having different names, pursuing separate paths, speaking different and mutually unintelligible languages, often hostile in attitude towards one another, almost as averse to meet as parallel lines." Leaving this subject, on which a good deal more could be said, Dr. Maudsley referred to two methods of research lately in vogue and large with promise—viz., the systematic study of child psychology and the so-called psycho-physical research. The results accumulated by child-study require to be interpreted with great caution. It is difficult for the adult to understand correctly and rightly to construe by the light of his ripe thought and feeling, his formed and conscious thought, that which is only forming and scarce conscious in the immature mind of the child. "In the immature mind the word, like the underlying idea or feeling, is simple, single, without associations, almost detached, naked, so to speak, whereas in the mature mind it is involute, containing layers on layers of experience, having manifold associations which are roused into more or less conscious thrills, emotional or intellectual, by every use of it." To strip off or abstract so much of the structure of his own mind as to reduce it to the simplicity of the child-mind, and then to use his so mutilated mind to observe and interpret, is a matter of exceeding difficulty. "He would find it easier, I think, to walk the walk and talk the talk of his infant." To give an illustration: When the child asks the astonished father, "Daddy, why doesn't God kill the Devil?" he puts as simple, correct, and natural a question as he would do were he to ask, "Why does not daddy kill the rat?" One question is not a whit more wonderful than the other. The child has been taught to picture God as a big, strong Being, living out of sight high up above, Who can do whatever He will, loving good deeds and good persons, angry with those who are naughty and do wrong—to picture Him mentally, in fact, as a kind of bigger and stronger father. And reasoning then from the particular to the particular, as incipient intelligence cannot choose but do, the child naturally wonders why God does not kill the Devil who is going about doing wrong and tempting to do wrong. The child's assertions are direct and simple, not trammelled as yet by modifying associations or vitiated by conventional errors and prejudices; therefore his utterance is sometimes singularly fresh, startling, and suggestive. Sentimental persons may detect "intuitions" and "trailing clouds of glory from afar" as they dote on children's innocent simplicities, but it is they, the enraptured gazers, who project them and read them into the child out of their own feelings, just as the fond mother watching the flicker of a smile across her sleeping baby's face projects a heavenly meaning into the purely reflex movement excited by a pleasant visceral stimulus. The real

babe, as a matter of fact, is a selfish parasitic creature, with all its instincts converging towards the animal self, exacting tyrannically all the services which, happily for it, maternal devotion likes instinctively to give. Child psychology should note and watch the performances of children and interpret them by the light of heredity and human evolution. As regards psycho-physics—the creation of Wundt in particular—its promises and expectations were very large, but the performance has been very small. In the end psycho-physics belongs more to physiology than to psychology, for the methods are physiological. Idiosyncrasy or personal equation is a complicated unknown quantity, containing several *x's*, and this enters into all equations of reaction, time, and other psycho-physical measurements. One person may feel faint because a cat is in the room, another may be poisoned by a strawberry, and a third may be unable to "contain his urine if he hears the sound of the bagpipe"; one may react deliriously to opium where another is not affected with the same dose. There are hosts of subtle and obscure factors entering into the composition of idiosyncrasy and temperament, which must always vitiate the measurements and reaction-times made on different subjects. The extensive and lengthy publications which have been issued from many psycho-physical laboratories must remain monuments of sterile industry, monumental mockeries of knowledge. An impassable gulf lies between measurements of objective reactions and the subjective state which is intangible and for which no common unit of measurement is possible. Man is too complex for psycho-physical measurements.

## ARSENIC IN SODIUM PHOSPHATE.

IT must be admitted that the apparently uniform occurrence of arsenic in important quantity in ordinary phosphate of sodium is a revelation, although on reflection there is the possibility of arsenic being contained in all drugs in the preparation of which common sulphuric acid is concerned. Sulphuric acid is used, of course, for liberating phosphoric acid from phosphate of lime and the resulting phosphoric acid when neutralised with carbonate of sodium yields the ordinary phosphate of sodium. Any arsenic present, therefore, is most probably combined with the soda to form arsenate, a salt that in many respects closely resembles the phosphates. It is clear, however, that the contamination of phosphate of soda may become so marked as to render the salt distinctly poisonous. In the remarkable cases which were recently brought under the consideration of Mr. Plowden at the Marylebone Police-court, and upon which last week he delivered, as we consider, a very sensible pronouncement, it was shown that this arsenical impurity might easily amount to a dangerous quantity. The evidence that the arsenic occurred by accident or carelessness may be ignored in view of the fact recently elicited by the examination of a number of specimens of phosphate of soda which all showed the presence of more or less arsenic in the form of sodium salt. Even phosphate of soda crystals which have been supplied as chemically pure for analytical purposes have been found to contain an appreciable quantity of arsenic. There may well remain, therefore, some anxiety as to the destiny of impure phosphate of soda which was consigned before the fact of its arsenical impurity was known. The apprehension of mischief arising increases in intensity when we have regard to the fact that phosphate of soda is employed as an ingredient in a popular effervescing drink. The use of this drug in this indiscriminate way is much to be deprecated, and had it not been for the fact that phosphate of soda had been prescribed for a person under medical care it is quite probable that the presence of arsenic in phosphate of soda would still have remained undiscovered. It is not at all improbable that many persons addicted to this medicated beverage have been innocently poisoning themselves. The Pharmacopœia says nothing about arsenic as an impurity of phosphate of soda, although in the method of preparation described sulphuric acid is, of course, mentioned and under sulphuric acid a test is given for the presence of arsenical impurity. It would appear that the importance of the omission of any test for arsenic in phosphate of soda in the British Pharmacopœia was recognised previously to this prosecution, for a few days ago we received a specimen of the salt which is perfectly free from arsenic from Messrs. May and Baker of Garden Wharf, Church-road, Battersea, who have a stock of this article which they state they can supply without delay. It is a pity, we think, that if, as these druggists state, they knew of the important impurity they did not give greater and earlier publicity to the fact. In future, however, confidence may be felt that sodium phosphate will be supplied free from arsenic, for Mr. Plowden's ruling decides that a prosecution may properly be instituted under the Sale of Food and Drugs Act. Fines and costs were accordingly ordered to be paid by the defendants. The defendant druggists, of course, are entitled to the sympathy of the trade, but their annoyance should be considerably allayed by the fact that the publication of these proceedings has done an excellent service in the interests of public health, for vigorous steps are being taken both by wholesale and retail firms to provide in future nothing but absolutely arsenic-free phosphate of soda.

## LEAD AND PHOSPHORUS POISONING.

IT is evident from the reply given by the Home Secretary to the questions raised by Sir Charles Dilke relating to the prevalence of lead-poisoning in the Potteries that no very substantial improvement has been effected amongst the work-people engaged in this dangerous trade. It is true that some diminution in the number of cases of lead-poisoning followed closely on the establishment of the new rules in 1898. According to the statement of Sir Charles Dilke, however, the diminution in 1899 was because the doctors now "suspended" from work people who had developed mild forms of lead-poisoning. This seems to us to imply an inadequate system of medical examination and the suggestion that a woman inspector should be appointed was made, a step which, however, Sir Matthew White Ridley declined to take. He admitted that lead-poisoning was a fearful thing in the Potteries and he promised that the Home Office would do everything that they possibly could to secure that the industry should be carried on in a manner as little harmful as possible to those engaged in it. The department hoped shortly to publish a new code of rules in accordance with the recommendations of Dr. Oliver and Dr. Thorpe, but there was to be no absolute prohibition of the use of raw lead. The Home Secretary did not think that much more could be done in regard to phosphorus, but he hoped that the cases of necrosis would continue to diminish as they had done in the past, one case only being reported during the past six months. Further, as a result of the public attention devoted to the subject, one large firm had abandoned the use of yellow phosphorus. The only really satisfactory issue of both these problems will be when it is found to be quite practicable to dispense altogether with both raw lead and yellow phosphorus.

## THE SOUTH AFRICAN COMMISSION.

THE appointment of the two additional members to act upon the commission proceeding to South Africa to inquire into and report upon the arrangements for the care and treatment of the sick and wounded at the seat

of war has now been definitely settled and announced. The names of the new members are Sir David Richmond, ex-Lord Mayor of Glasgow, and Mr. Harrison, the general manager of the London and North-Western Railway. We do not think that a better choice could have been made. They will bring to the inquiry all the necessary business qualifications. We are especially glad that the traffic manager of a big line of railway has been selected, for we have strongly advocated this course, but we are of opinion that the constitution of the commission might have been further modified with advantage.

## THE CONSTITUTION OF THE BRITISH MEDICAL ASSOCIATION.

AN extraordinary general meeting of the British Medical Association was held on July 18th at Exeter Hall to consider new articles of association providing, to sum up briefly, that the administration of the Association should remain in the hands of the Council. There was a fairly large attendance. The adoption of the new articles was proposed by Mr. Ward Cousins (President of the Association), supported by Dr. J. R. Thomson of Bournemouth (President of the Council). Neither of these gentlemen obtained the ear of the meeting. Mr. Victor Horsley spoke against the new articles, and after some words from Dr. F. M. Pope of Leicester and Dr. Lorimer Hart the business of the meeting terminated by the rejection of the Council's proposals for the adoption of the new articles.

AMONG the victims of the Peking massacre, concerning the occurrence of which there can no longer be more than the slenderest doubt, are three members of the medical profession, Dr. G. E. Morrison, Dr. Wordsworth Poole, and Miss Lillie E. V. Saville. Dr. Morrison, who was only 38 years of age, was an Australian by birth and received his medical education at Melbourne and Edinburgh. He was already a famous traveller and was the *Times* correspondent at Peking. Dr. Wordsworth Poole, who was also a young man, received his medical education at Cambridge, and had been principal medical officer at Zomba, Lake Nyassa, British Central Africa. He was staying at Peking with his wife. Miss Lillie Saville, M.D. Brux., received her medical education at the London School of Medicine for Women and had been a medical missionary in Peking for the past five years.

THE annual meeting of the subscribers to, and others interested in, the Hospital for Epilepsy and Paralysis and other Diseases of the Nervous System, Portland-terrace, Regent's-park, will be held at the hospital (near St. John's Wood-road station), on Wednesday, July 25th, at 3 P.M., when the Right Hon. the Earl of Hardwicke, President, will be in the chair.

H.R.H. THE PRINCESS OF WALES paid a visit to the London Hospital on Friday, July 13th, accompanied by her daughter Princess Victoria. After inspecting the extensions in the hospital, especially the new room for the light treatment of lupus, they had tea with the nurses.

AT the forthcoming International Medical Congress in Paris Dr. the Hon. Alan Herbert, physician to the Hertford British Hospital, Paris, will be presented with an address by the former and present medical officers of the hospital, numbering 20.

SIR HECTOR C. CAMERON, M.D. Glasg., President of the Faculty of Physicians and Surgeons of Glasgow, received his knighthood at the hands of the Queen at Windsor Castle on June 30th, as did also Sir George Hare Philipson, M.D. Cantab.

A TELEGRAM from Sir H. A. Blake, Governor of Hong-Kong, received at the Colonial Office on July 16th, stated that during the previous week 57 fresh cases of plague had occurred with 58 deaths.

DR. MARC ARMAND RUFFER, President of the Sanitary Maritime and Quarantine Board of Egypt, has received from His Majesty the Sultan of Turkey the Order and Insignia of the Medjidieh of the Second Class.

THE dignity of a Knighthood of the United Kingdom has been conferred upon the Hon. William Bisset Berry, M.D. Aberd., Q.C., Speaker of the House of Assembly of the Colony of the Cape of Good Hope.

MR. JOHN H. MORGAN, on resigning the position of senior surgeon to the Hospital for Sick Children, Great Ormond-street, has been unanimously elected consulting surgeon.

# THE WAR IN SOUTH AFRICA.

OUR morning papers are full of wars and the rumours of wars at the present time and this country is realising the responsibilities of empire. The deplorable events which have occurred in China and the extent and formidable nature of the task which has to be undertaken in that country have tended to withdraw public attention for the time being from the war in South Africa, and to minimise and nearly exclude from consideration what under other circumstances would be regarded as most exciting events connected with the little campaign on the West Coast of Africa. Confining our attention, however, to South Africa we may say that the news from that seat of war was at the end of last week of a disappointing character. Although it cannot have any effect on the ultimate issue or undo what has been already accomplished there, the intelligence that the Boers had again carried out one of their successful surprises and had defeated a small British force and captured a number of British troops and taken some guns was very unpleasant reading. That the occurrence took place at this stage of the war and almost, as it were, under Lord Roberts's eyes, took the public by surprise and did not tend to decrease the sense of disappointment with which the news was received. If such occurrences have almost ceased to be regarded as surprising on account of their frequency, still it cannot be said that they have brought about that equanimity which might be expected to come from our being accustomed to them. De Wet and Botha are still active and enterprising and show remarkable skill in raiding, retreating, and eluding capture. Their tactics as guerilla chiefs seem remarkably good. Spies and disaffected persons no doubt abound in our camps and furnish them with early and reliable information as to all our movements.

Though there is not much news to hand at the moment of writing what there is is satisfactory. There is a great and increasing amount of activity on the part of the British forces. So far as we can gather the British troops, notwithstanding their hardships and fatiguing marches, are in excellent fettle and their health, as a whole, is good. There is, of course, a large amount of enteric fever, but the prevalence of the disease is believed to be diminishing and it is hoped that, what with the cold weather and a decreasing amount of fatigue and exposure on the part of the troops, it will continue to diminish.

We would call attention to the remarks of our Special Correspondent writing from Bloemfontein. As we have repeatedly urged the great difficulty in modern warfare—especially in a country like South Africa—is transport. We have always contended that a certain amount of transport should be independently set apart for the medical requirements of war and that it should never be diverted from this object except at the express order of the general in command and, where possible, in writing. This obtains in the American army, and there is or was, we believe, an Act of Congress to that effect.

The total losses reported from the beginning of the war up to the end of last week (exclusive of sick and wounded men now in British hospitals in South Africa) amount to 32,524. These are made up as follows according to the latest return issued from the War Office —

| — | Officers. | Non-commissioned officers and men. |
|---|---|---|
| Killed in action ... ... ... ... ... ... | 261 | 2,434 |
| Died from wounds ... ... ... ... ... | 72 | 637 |
| Missing and prisoners (excluding those who have been recovered) ... ... ... | 61 | 1,900 |
| Prisoners who have died in captivity | 1 | 84 |
| Died from disease ... ... ... ... ... | 139 | 4,563 |
| Accidental deaths ... ... ... ... ... | — | 70 |
| Sent home as invalids ... ... ... ... | 965 | 21,337 |
| Total ... ... ... ... ... ... | 1499 | 31,025 |

## THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

No. 3 Hospital Train returned on June 21st from Mafeking bringing to us the whole of the sick and wounded who had accumulated there, and as that was the third train-load we had received in six days we have had a busy week. In the last train-load there was another poor fellow—I think I mentioned to you some time ago that we had one similar unfortunate—who had lost both his eyes, and in the hospital at the present time there is also a man who only missed a similar accident by a quarter of an inch. The bridge of his nose was blown away by a transversely crossing shell, but most fortunately neither of his eyes was damaged. Both of the blind men show a most splendid spirit and pluck in their fearful adversity.

Lord Chesham, who has left again for the front, tells us that our field hospital was captured by Christian De Wet at Rhenoster and that it was made to move its camp to a neighbouring valley and told to lie low there until he could supply it with wounded. De Wet's agility and daring, which have resulted in so many surprises to our forces of late, enabled him, as you know, to swoop down upon the Derbyshire Militia just as they were detraining, and he kept his word to our field hospital by sending to them the 70 or 80 Derbyshires who were wounded before the rest capitulated. This commander is a thorn in the side of those of our troops who are placed along the railway to keep the lines of communication open, and one cannot help admiring his skilful and brave movements. We are told that he visited Lord Methuen and said that he would like to stop fighting, as he knew "the game was up," but that he could not do so until he received instructions.

I am glad to say that our invalid staff are all going on well. Greenfield and Parker are both convalescent and out of danger, and none of the other surgeons who have been "warded" have shown any symptoms of enteric fever. One-third of our orderlies are still on the sick list, but none of them are dangerously ill. Several of them have influenza—indeed, there is quite an epidemic of it—and the sudden invasion, by this fever, of patients whose temperature charts are being anxiously watched on account of the other illnesses often gives rise to anxiety. It is no uncommon thing for patients who have come down with wounds to develop enteric fever some days after admission, and similarly a few patients who have come in with other complaints have developed scarlet fever, for which we had to establish several weeks ago an isolation camp. One of our surgeons' dressers, Blathwayt, is among the recent recruits and it is a dull look-out for him to be condemned to six weeks' or seven weeks' seclusion "across the line." Now that influenza has made its appearance, imported from England we suppose, we have been provided with a third illness which has to be considered in investigating the cause of any sudden rise of temperature in a patient. The presence of scarlet fever in the camp has been a very great nuisance, for it has entailed a large increase in the heavy amount of disinfection which is called for in a camp of this size, but by means of stringent regulations and perpetually looking out for the earliest signs of the disease we have been able to limit it to a very few cases indeed. There are 16 cases in the isolation camp at the present time and there have never been more, but as five of them, in addition to Blathwayt, are members of the staff, and as their absence from duty is necessarily for the long period that I have mentioned, it is a serious blow from an administrative point of view.

We are all very much disappointed that the war does not crumple up more rapidly. We feel as if we had been away from home for two or three years. Somebody was suggesting the other day that instead of our going home when this war is over we should have to go on and establish a hospital in China, but I sincerely hope that this will not be the case, for we all feel that we have had quite enough of war for the present.

We have done all we possibly can to give an occasional day off to some of the less strong of the sisters, but the very fact that they have been so hard at work as to need it badly, has made it very difficult to arrange. One or two of them have changed places with a sister on a hospital train for a few days at a time, and this has secured them, if not a holiday, at least a change of work and a novel experience. Now, however, the 10 extra nursing sisters, whom the committee kindly despatched directly they received my application for them, have arrived, and they will be invaluable. Already they have enabled one or two of the sisters who have been working here without a break of any kind for three months to have "a day off." Many other sisters travelled with our 10 sisters from England, some for the hospital at Wynberg, who told ours that they were very jealous of their luck in being sent so much nearer to the front. It is very striking how deeply this wish to go to the front is embedded in everybody—until they have been there. The staff of each of the hospitals that I have come across is anxious to be pushed further forward under some hazy sort of impression that they want to be as near to the hub of the universe as possible. They have not a notion how their efforts to do good would be discounted at every turn by the great difficulty, or in some cases the impossibility, of getting the essentials for good work. The story told by those people coming down from the front is very different. Medical officers one after the other come here and say, "How fortunate your hospital is to have this lovely site and opportunities for quiet and good work unimpaired by the contamination of air and water and soil and the frightful difficulties of transport which hamper everybody up north." That exactly tallies with the experience which I derived from my journey up to Kroonstad a month ago. The difficulty of transport north of Bloemfontein is really so great that it dominates the whole situation. Colonel W. H. MacNamara, R.A.M.C., the principal medical officer of the lines of communication, was visiting us two or three days ago and told me that it has not yet been possible to get up to Kroonstad more than one-quarter of the hospitals, which are waiting packed in trucks, and should have been delivered there four weeks ago. Hospitals are, of course, useless when packed in trucks, and what is wanted to render them useful is not so much more hospitals packed in trucks as more steam engines and more water-supply along the line and less interruption of railway traffic at the vulnerable points of the line, such as bridges, &c. The hospital trains can get up and down all right; they always have efficient engines and now that many of the hospitals have been moved up-country to Norval's Pont, Springfontein, and Bloemfontein, and so on from Cape Town, these trains are more than equal to the demands made upon them to keep us well supplied with patients.

If this hospital could be picked up bodily and dropped down again without any interference with its work—that is an important point—at Norval's Pont it would not be a bad thing, for it would save about eight hours on the run of each hospital train and would place us in a region where eggs, milk, and butter are plentiful and good. Norval's Pont, however, was not in British hands when we pitched our camp, and there is nowhere else in South Africa that from our point of view is more suitable than Deelfontein. The weather now, though cold except when the sun is shining, is on the whole quite lovely—day after day of cloudless sky—and everything goes well with us.

I think that, knowing what you do of the amount of trouble that was expended in London on the thinking out of the equipment of this hospital, and knowing what I have written of the complete success which has crowned that work—for really we have everything that we want and nothing that we do not want—you will be amused to hear that somebody has been amusing himself by trying to make out that we came out unequipped for our work. The only instance that he can cite in support of this charge is that we had to borrow in our earliest days a few blankets. Plenty of blankets were sent by the committee from home and they got here by the time we were fit to declare a section of our hospital "ready," but before we were so ready Surgeon General W. D. Wilson, P.M.O., urgently requested us to place a few beds at his disposal at the earliest

possible date, and it was in order to comply with the request and so to help by every means in our power, even though our equipment was not yet complete, that we had to ask for a loan of some blankets—a loan that we have more than repaid already by the odds and ends of equipment which we have from time to time been called upon to contribute to others whose stock was exhausted or lost. In this way we have been able to lend a hand to many surgeons with battalions of Yeomanry as they went past us, and Lord Chesham only this week took back with him to his battalion at the front a supply of warm underclothing, Balaclava helmets, and so on, which he said were urgently needed, and which we had been placed in the position to afford by the kindness and energy of friends at home. Many people have been extremely generous in the way they have responded to the appeal in one of these letters some weeks ago for tobacco and sweets. Quite a large number of the officers here do not smoke, but almost all the men do, and it takes my wife between five and six hours every day, Sundays included, to accomplish her round of the hospital now that there are from 700 to 800 patients. She tells me that each week she distributes about 70 lb. of cake tobacco, 40 lb. of cut or packet tobacco, and 7000 cigarettes—that or more, besides many other "comforts." Idiosyncrasies and longings come out strong in such a large and varied collection of men. One poor fellow who died from cancer last Saturday had a special craving, sometimes very weird, almost every day he saw her. On the morning of the day he died he enjoyed some Madeira cake and a glass of port wine and soda-water. The day before nothing would content him but a dish of potatoes. For a few days before that he practically lived on oranges, which luckily we are able to get here now. One day he suddenly asked her for a stick of "Spanish." Liquorice was what he meant, so we wired to Cape Town and got some up in time for him thoroughly to enjoy munching a great stick and having some more dissolved in water so that everything he ate or drank for a day or two was flavoured with it.

Deelfontein, June 25th.

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(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

We are gradually getting the best of the epidemic, but still have a number of cases sent from outlying stations. At present there are roughly 1000 cases under treatment here in the various civil and military hospitals, but I trust that as the cold weather advances these numbers will materially decrease. No. 2 General Hospital went up to Pretoria yesterday and will be followed by the Irish Hospital in a few days. From all accounts there is not a great amount of sickness in Pretoria or Johannesburg, and it is at present doubtful, considering the very excellent hospitals that exist in these two towns whether it will be necessary to order up more general hospitals. One point has struck me during the war, and that is how well the enteric fever cases have done whilst under canvas; in fact, I think those treated in tents have certainly made more rapid recoveries than those treated in buildings. The cold is intense here mornings and evenings. There is a white frost on most days, but the sun has great power during the day, and given the absence of rain the climate at present ought to do wonders for the convalescents. I am glad to bear testimony to the excellent work performed by the men of the St. John Ambulance Corps who are out here; they have amply justified the good things said about them and they do their duty in an uncomplaining and willing manner and have been of the greatest assistance to us in our manifold duties. The lesson to be learnt for our next big campaign will, I trust, be impressed on the military authorities and the Treasury, and the system of starving the Royal Army Medical Corps during peace time with its attendant disadvantages rectified. The vital subject of transport, too, will require to be well looked into, as half of our difficulties at the present time are the result of deficient means of transporting the sick and wounded. In my own opinion, it is an absolute necessity in future wars that the medical transport should be in our own hands and should not be diverted from the purposes it is intended for. I hear to-day that there is a possibility of demands being made on our already impoverished ranks for duty at the Gold Coast and that volunteers for that work are likely to be called for. It is to be fervently hoped that the business will be of short duration, as the climate of West Africa can hardly be called salubrious, and the casualties are likely to be numerous at this season of the year.

Bloemfontein, June 23rd.

# THE UNIVERSAL EXHIBITION AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Four Medical Congresses: Press Arrangements and Festivities.*

HENCEFORTH the medical press will not be able to complain of indifference on the part of the powers that be. Even the newly elected Municipal Council of Paris, which has shown a disposition to slight and to neglect what its predecessors had organised, is making an exception in favour of the International Congress of the Medical Press and has expressed the desire to give this congress an official reception at the Town Hall on Thursday, July 26th. As with the Guildhall or the Mansion House in London, so with the Hotel de Ville in Paris, foreigners are generally pleased to have an opportunity of visiting this historic municipal palace. But whatever lukewarmness the Nationalist majority of the Paris municipality may show, the Government is leaving no stone unturned to render the Exhibition and all the congresses connected therewith successful. Thus M. Millerand, Minister of Commerce, has promised to assist at the opening ceremony of the Medical Press Congress. This will take place at the Press Pavilion in the Exhibition grounds on Thursday afternoon, July 26th. On the following Saturday evening there is to be a banquet and entertainment in the picturesque reproduction of Old Paris which is one of the attractions of the Exhibition and it is anticipated that M. Waldeck Rousseau, the Prime Minister, will be present. On Friday evening, the 27th, there will be private receptions, and on Sunday, the 29th, excursions to Chantilly and Versailles will be organised. On Monday, the 30th, the Minister of the Interior will give a reception to the members of congresses present in Paris, and on Sunday, August 5th, the President of the Republic will give a garden party to the members of the Medical Press Congress and of the International Medical Congress which will then have assembled in Paris. Indeed, from July 23rd up to August 17th, may be qualified as devoted to medical men. It is unfortunate that the Medical Press Congress should meet during the last three days of the International Congress on Medical Ethics. With the exception of the opening ceremonies both congresses meet close together at the Faculty of Medicine and it is thought that the members of the medical press who are attending both congresses will be able to flit from one to the other according to the interest of the proceedings. This, in my opinion, is a serious mistake. It is the duty of the representatives of the medical press not to neglect questions affecting medical ethics, yet they are expected to meet at a congress of their own while the Congress on Medical Ethics is proceeding. But it is said that during the four days between July 28th when the Congress on Medical Ethics concludes and August 2nd when the General Medical Congress begins the members of the medical press will be usefully employed in organising the reporting of the Medical Congress. In view of such organisation a meeting of all the members of the medical press has been convoked at the Press Bureau of the Faculty of Medicine for Wednesday August 1st. But there has already been some organisation in this respect. For instance, all members who intend to read papers at the Medical Congress are requested to write in their own language a summary of 50 lines in length and to bring with them 200 printed copies of the same. The Press Bureau of the Faculty of Medicine, will then see that these slips are properly distributed and thus the authors of the papers, &c., will be relieved from all further trouble. Those members, however, who have neglected to do this will find at the Press Bureau an agency ready to have the 200 copies printed for them, and the cost will only amount to eight francs. This having been done, and as the press representatives are not convoked before the Wednesday, I cannot understand why the Medical Press Congress does not meet on the Monday and Tuesday instead of meeting at the end of the previous week when the Congress on Medical Ethics will also be holding its sittings.

*Presidents of the Medical Press Congress.—Where to Put Up.*

It is not necessary to describe anew the origin, object, and organisation of the International Congress of the Medical Press. The details will be found in my letter published in THE LANCET on May 5th (p. 1324). But I

should now add that Professor Virchow has taken the greatest interest in this congress, has promised to attend, and will preside over the sitting held on July 28th. Professor Baccelli of Genoa will preside on Friday afternoon and Professor Cornil will act as president for the French language Even at this, the eleventh hour, any member of the medical press will be welcome on payment of his entrance fee of £1 to the general secretary of the Congress, Dr. R. Blondel, 8, rue de Castellane, Paris. The temporary receipt given should be exchanged at any time on or after July 20th, at the offices of the French Association of the Medical Press, 93, Boulevard Saint Germain. These offices are not far from the Faculty of Medicine, and, indeed, it must be borne in mind that the Latin Quarter is the centre for all the four medical congresses. The sections will meet in the lecture halls of the Faculty of Medicine, of the Sorbonne, and of the great schools that have given to this quarter its name. Therefore, not only is there no necessity for the members of these congresses to put up in the expensive West-end of Paris or anywhere near to the Exhibition, but it would be inconvenient to do so. Rooms had better be sought on the south side of the river and as near to the lower part of the Boulevard St. Michel as possible. Excepting to attend one or two of the opening ceremonies or a banquet the members of the four medical congresses will have no occasion to go anywhere near the Exhibition, or the exclusive cosmopolitan part of Paris which has the Madeleine for its centre. Their work will be done in the University building, and therefore it will be more convenient, and many will find it more pleasant, to live in the University quarter.

*The Opening Papers of the Medical Press Congress.*

The two principal questions to be discussed at the International Congress of the Medical Press are the proposal to form an international association of the medical press, and, secondly, all that relates to the copyright of medical literary work. On the first of these questions Professor Posner of Berlin, Dr. Laborde of Paris, and Dr. Rubino of Naples have prepared reports. These papers are now in the press and will be printed in time for the opening of the Congress; but as I shall then have so much to say about the Congress on medical ethics, which will have held the greater part of its sittings, I had better profit by the present opportunity to give some account of these papers. Professor Posner commences by lamenting the present recrudescence of nationalism and individualism, each nation and each person seeking their own advancement and fiercely competing against their neighbours. But he claims that the ancient principle of professional confraternity has nevertheless survived among medical men, and he trusts that it may in time replace entirely the spirit of rivalry and competition. Yet there is no denying that the profession is in danger of being absorbed in the general current. It is to be hoped that the congress will inspire its members with a higher ideal than that of each striving solely for his individual advancement. As to-day the printed word is the greatest power extant for good or for evil, the medical press should strive not merely to spread scientific knowledge, but to study and defend the higher ethical interests of the profession. The learned professor then goes on to say:—"The conviction that this task can be more easily accomplished by the coöperation of all the forces than by mere individual efforts was first realised in France. The association of the medical press, founded in France, has become a prototype for analogous tendencies in other countries. The medical press of Germany and of Austria, which I have here the honour to represent, have followed the French example. If we examine the work of the medical press associations of Germany and Austria we can already congratulate these two bodies upon having succeeded in solving many problems submitted to them, though many of the ideal dreams on which these associations were based are not yet realised." To begin with the mere existence of such organisation has revealed a community of intellectual interests and a spirit of solidarity that had not been understood before. Friendships have been created, disputes avoided, and the better spirit engendered has been reflected in the columns of the medical journals much to the advantage of their readers. But practical advantages have ensued notably in regard to the reporting of medical congresses, though much remains to be done in this respect. Also by mutual understanding and common action the medical press could usefully influence legislation on all that relates to the public health. In this latter respect the German and Austrian associations of the medical press of those countries have barely realised the power they possess. The national organisations being thus so young and inexperienced it may well be questioned whether they are as yet strong enough to go a step further and to seek to establish an international organisation. Proceeding, Professor Posner says: "The extraordinary difficulties which the organisers of the Eleventh International Medical Congress held at Rome had to combat, and more especially those that were related to the organisation of the medical press, led my friend Marcel Baudouin and myself to elaborate a plan born out of our conversations. This plan was discussed at the banquet organised by the French medical journalists assembled at Rome." The plan was approved in spite of its difficulties and it will be the task of the present congress to elaborate the scheme. If the journalists would group themselves according to their language and then exchange their notes with those taken in other languages a much more accurate and complete review of the proceedings of international congresses could be obtained, also the work done in this collective manner would cost much less. Professor Posner then points out that as congresses depend for their success on the press, representatives of the press should have a voice in the organisation of such congresses. Such coöperation sometimes occurs, but it is not recognised as a principle and systematically regulated. Apart from the reporting of congresses there is need of an understanding as to what should be considered a legitimate quotation, the exchange of drawings or other illustrations, and the universal adoption of the same technical terms. Then something should be done to regulate the right of reply when controversies arise. But if it is necessary to go further than the mere expression of a pious wish, should there not be a representative executive power or committee the business of which it shall be to see that the rules accepted are uniformly applied? But no committee could exercise this power if it were not the representative of solid and durable organisations. Then there is the question of the relations to be established between the journalists of various nations. Professor Posner concludes by proposing that an International Association of the Medical Press shall be established having for its purpose to promote fraternal relations between the medical press of different nations, to represent and defend all common interests, to regulate the exchange of reports, newspapers, and news, and that an executive committee be elected to prepare a scheme on these lines.

The next report on this subject is by Dr. J. V. Laborde, President of the French Association of the Medical Press and editor of the *Tribune Médicale*. He commences by explaining that the whole trend of modern progress shows the necessity of bringing civilised nations closer together. Such "mutual penetration" is best assured by the press which conveys knowledge to each nation of what its neighbours have accomplished. When we consider how much the world has to benefit from the growth of biological and medical sciences, we need not insist on the necessity of facilitating the work of the medical press by which this knowledge is propagated. But, as science does not recognise political frontiers, its mouthpiece, the scientific press, should be internationally organised. This conception found public utterance at the Congress of Rome in 1894, and was eloquently expounded by Professor Posner of Berlin and Dr. Marcel Baudouin of Paris. Dr. Dobrozycki of Warsaw wanted to create, under the presidency of Dr. Laborde, a special section of the medical press at the International Medical Congresses. An international provisional committee was appointed. It met and drew up some proposals. Medical press associations were formed in Germany and Austria, but unfortunately no practical results were obtained when the International Medical Congress subsequently met at Moscow. Since then the German Association, and notably Professor Posner, has taken an active initiative, and this support has rendered the present Paris Congress possible. In this a great leader of modern science as well as of medical journalism, Professor Virchow, also lent efficient aid. Then came Dr. Selous of Philadelphia and Professor Alfredo of Naples. Dr. Laborde proceeded to give very elaborate rules for the future International Association of the Medical Press. These rules have a tendency, however, to put the cart before the horse; for instance, the members are to accept the regulations for the protection of medical literary property, other rules for the exchange of medical

journals, and the idea of publishing an international bulletin. This is going perhaps a little fast. But one proposal is very useful and practical—namely, that every medical journalist belonging to the International Association should have a card which will serve as an introduction in all countries. If the medical press organisations of each country would further take care that this card was recognised by their police, university, and hospital authorities, then a very great service would be rendered. It would take far too much space to analyse the numerous rules proposed and if they are to be adopted with any real knowledge of what is intended many days of very arduous discussion will be necessary. At the very onset a huge stumbling-block presents itself when the question is raised as to who shall be admitted as members of the association. Dr. Laborde says directors, editors, and general delegated secretaries. Are the special correspondents, the regular contributors, the writers on the staffs of the medical papers to be excluded, or are they considered as delegated secretaries, and if so, by whom delegated? Then, what is meant by directors? Are these the business and advertisement managers of papers or the proprietors of the papers? There are some so-called medical journals owned by wholesale druggists and published solely for the purpose of selling certain drugs. The motive of the association, we are told, will be the "moralisation of the profession"—a very good motive; but, in the same sentence we are informed that this end is to be obtained by protecting literary property. It is difficult to see the connexion. Is the druggist's property of an ingenious literary puff of a patent remedy to be protected by the united strength of an international association of medical journalists? No one could be more scandalised at such a suggestion than Dr. Laborde himself. Yet to avoid such contingencies the first step would be to define what constituted a medical journal and a medical journalist worthy of the name. At present and in different countries there are a good many sheets published that bear medical titles, deal with medical subjects, and yet are issued solely for the purpose of advertising the business of their proprietors. As the practice of medicine is a profession and not a trade such commercialism should be rigorously excluded. It would seem, however, as if the organisers of the Congress have failed to draw a sharp line between business and professional pursuits. In any case one of the papers which is to form a basis of discussion has for its author Monsieur F. Alcan, the Paris publisher, and surely publishing is a business and not a profession. Monsieur Alcan has written an interesting and appropriate paper. He is doubtless animated with the very best intentions, but he is neither a medical man nor a professional journalist. His paper deals with the reproduction of illustrations which, with existing photographic processes, is done on a very large scale and without the authors and owners of such illustrations being even aware that they have been reproduced. Then M. Alcan immediately speaks as a publisher might be expected to speak. He says that if the author of a medical treatise asks his publisher to send an artist or a photographer to his hospital or laboratory the drawing or photograph then made belongs undoubtedly to the publisher. But if the author supplies to the publisher a drawing or photograph the publisher is only the proprietor of the reproduction of the same. The author can give the same designs to some one else who may in his turn reproduce them. In both cases it should be the rule, says M. Alcan, to apply to the original publisher who should be willing to sell reproductions of the blocks for about half the original cost. The publisher would make a small profit and yet the purchaser would have to pay less than if he resorted to a photographic process. Then there is the question whether a publisher has the right to employ a design for other than the publication for which it was originally destined. Here M. Alcan speaks as a publisher and claims the right to do what he chooses with such blocks; but what would be the position of some eminent medical professor if some of the reproductions of his anatomical or other drawings fell into evil hands and were utilised to illustrate some quack or pornographic publication? It is most desirable that publishers should meet authors and discuss amicably their mutual interests, but to jumble both up together in one single congress can only lead to confusion. Each side must separately formulate their desiderata, then and then only may they meet to effect a common understanding or compromise. M. Alcan goes on to explain that in France it is not yet settled whether photographs come under the laws affecting literary and artistic property or those governing industrial property. With regard to portraits the photographer may give the publisher the right of reproducing the portrait if the person photographed consents. The publisher may have to pay for this permission. On the other hand, the person photographed may give his photograph to anyone else and authorise the latter to reproduce it. Thus the publisher's copyright becomes valueless. Doubtless this is important from the publisher's point of view, but it is less certain that eminent medical celebrities when giving their photographs to some friend or relative will take care first to obtain a pledge that the portrait shall never in any way be reproduced.

On this question of copyright there is another and lengthy report by M. de Maurans, editor of the *Semaine Médicale* and by two eminent barristers well known for their special knowledge of the subject—namely, M. M. Pouillet and M. G. Rocher. The author of a medical book has the same rights, they remark, as the author of a novel or any other book; but what is the position of the author of an idea or a discovery and of a clinical or other lecture delivered concerning the same? They continue: "The professor must give all his science to his pupils. The latter may take notes, even shorthand notes, learn what they have heard off by heart, and deduce from it the utmost possible personal instruction; but their rights go no farther than this. They cannot repeat the lecture or publish it. The professor's lecture is like an open book: the pupils may learn from it but must not attempt to make a pecuniary profit out of it." This principle was established by a verdict rendered in a Paris court on August 27th, 1828, and confirmed by another verdict on March 2nd, 1841. For the defence it was urged that as the State paid the professors their lectures became public property. The answer was that the State paid the professors to teach and not to provide the material for a book. In conformity with this judgment the reporters maintain that medical journals have not the right to reproduce clinical, university, or hospital lectures unless authorised to do so by the lecturer. Further, in giving such authorisation the lecturer should have the right to impose any conditions he may choose. This condition of affairs, I should imagine, will not be unanimously approved. The natural eagerness to create and to protect property should not efface from sight the fact that what is done publicly should be liable to public criticism; and how can lectures be criticised if they cannot be quoted. But it might with justice be urged that lecturers should be offered an opportunity of correcting the proofs of the reports of what they had said, and that as a matter of courtesy a copy of the paper in which they are mentioned might be presented to them. The reporters conclude by a humorous warning to medical authors and lecturers to be careful not so to describe their cases as to enable the personality of their patients to be recognised. The novelist Charette, to avoid trouble of this description, declared that he had selected for his heroes the names of bankrupts or of criminals who had been guillotined. But the dead leave relations who are apt to take offence. Thus a few years ago the author of a medical work on degeneration and criminality was prosecuted because some of his cases were recognised and one of them was precisely that of a man who had been guillotined. A descendant of this culprit went to law on the subject, and the tribunal ordered that the incriminating passage should be expunged from the book.

Dr. Marcel Baudouin has a paper on the Property of the Idea and the Form of the Idea in Scientific Journalism. Dr. Baudouin is Director of the International Institute of Scientific Bibliography and member of the Superior Commission of the Press at the Exhibition of 1900. He argues that an idea is a property and should be protected as such. But as yet the law has only attempted to protect the materialisation of ideas. For this it would be necessary to have some method of registering, nationally and internationally, scientific ideas. The International Institute of Bibliography, which registers day by day the intellectual productions of the entire world, might serve as a basis for such an organisation. Even now we are able to say who was the first person to give a written or drawn expression of an idea and to find this out promptly by the system of registering now adopted—*Répertoires idéologiques chiffrés*. By these methods of registering it would not be so difficult to ascertain what really does constitute a new idea. Dealing at great length with the existing copyright laws, Dr. Baudouin does not agree completely with the papers of

M. Pouillet, M. Rochet, and M. Alcan. He is not in favour of severe checks to prevent the reproduction of lectures, newspaper articles, speeches, &c., but he is anxious to protect a genuinely new idea. To check the reproduction of scientific drawings is to check the spread of education, excepting when such check is necessary so as to prevent disloyal competition. What needs special protection is not so much the literary construction of phrases to explain an idea or an artistic illustration, but the idea itself, however roughly expressed.

Several papers will be read on the constitution of the medical press in different countries. M. Lévy, editor of the *Revue Illustrée de Polytechnique Médicale*, will read a paper on the use of a pseudonym preceded by the term "Dr." in the writing of "puffs." M. de Maurcous has a paper on the affiliation of associations of the general or political press. There are to be papers on medical journals that are gratuitously distributed and have no *bonâ-fide* sale and on gratuitous publicity and its dangers. Dr. Blondel has a paper on the reports published of meetings of learned societies and the effects of such publicity on special reviews or magazines. M. Jayle, sub-editor of the *Presse Médicale*, will deal with personal controversies and the right of reply. Professor Bossi of Genoa will speak on the relation between medical journals that deal with sanitary questions and the general press. Professor Richet, editor of the *Revue Scientifique*, will treat the question of agreeing to employ an international decimal dictionary for the translation of figures, measures, &c., and another paper suggests a common agreement as to the spelling to be adopted in translating Slav names into the Latin alphabet; then there are some technical papers on the binding of journals or the wrapper problem, the reproduction of coloured illustrations, and the use of the phonograph and the kinematograph in reporting.

So far, therefore, as technicalities are concerned there is enough and more than enough to talk about, but it is in respect to organisation, the principle and basis of organisation, that the programme seems weak. However, this is but a first attempt. A great step forward will have been accomplished if a sort of professional feeling is engendered between medical journalists leading to the ultimate adoption of one ethical code for their moral guidance.

Paris, July 16th.

## BRITISH MEDICAL GUILDS AND THE INTERNATIONAL CONGRESS ON MEDICAL ETHICS.

ON Monday, July 23rd, the First International Congress on Medical Ethics or Deontology will hold its first sitting at the Press Pavilion on the Exhibition grounds and will meet for the rest of the week at the Paris Faculty of Medicine. We regret to hear that the British medical unions, guilds, and kindred organisations have not responded as fully to the widely distributed invitation as we had every reason to expect. The object and utility of an international congress dealing with the economic interests and position of the medical profession seem to have been better appreciated on the continent. Of course, the French members will be the most numerous as the Congress meets in Paris. The nation which so far and after France sends the greatest number of members is Italy. Then come Switzerland, Germany, the United States of America, Belgium, Spain, Russia, Denmark, and Great Britain is only ninth on the list, followed closely by Austria, Roumania, and Holland. The nations sending but three or four delegates are Portugal, Egypt, Turkey, Greece, Brazil, Venezuela, Sweden, Norway, and Canada, while Uruguay, Peru, Cuba, Japan, and Mexico have each one delegate only. Counting Canada this makes 27 different countries that will be represented and the list is not yet complete. Considering the importance of Great Britain as a nation, the political freedom to form organisations which we have long enjoyed, and our experience in the art of self-government, the representatives from Great Britain should have been more numerous and have taken a more active part in the preparation of papers or reports. Some English papers, as our readers are aware, have been announced, but these are not as numerous as might reasonably have been expected. Still, there is yet time to augment our list of members, and in any case a greater show of sympathy might be made. Of course, we can well understand that the medical unions that exist are of but recent creation and do not in most cases dispose of sufficient funds to pay the expenses of sending special representatives to Paris. But there are many members of these medical organisations who propose to visit the Paris Exhibition at their own expense, and they might have arranged to do so at the time when the Congress was being held so as to put in an appearance on behalf of their societies. Those practitioners who do not belong to any such organisations will also be welcome if they sympathise with the object of the Congress, and we hold at their disposal circulars of invitation if they will apply to us for them. The movement—namely, the forming of medical unions for the defence of the economical and ethical interests of the medical profession—is now so widespread that a proposal to establish an international federation of such unions has already been forwarded to the organisers of the Congress from several different quarters. It is also proposed that these congresses should be held at regular intervals and invitations for the next Congress on Medical Ethics have already been received from Brussels, Liège, Rome, Vienna, and St. Petersburg. Further, and so that the work of the Congress should be widely known, the General Association of the French Medical Press has made arrangements to act as secretary or agent of all the members of the Congress. The Press Bureau of this association will undertake to have 150 copies made of summaries of speeches, to pay the postage, and forward these to 150 different papers for 8*s*. if they do not exceed 15 lines and 15*s*. if they amount to 50 or more lines. The charge made, it will be seen, barely covers postage and stationery; it is a work of propaganda, not a commercial undertaking.

Finally, we would urge that those medical unions, guilds, &c., which are absolutely unable to secure the presence of representatives might, nevertheless, authorise their president or secretary to enrol himself as a member of the Congress. This implies the filling up of the form of application attached to the circulars of invitation and the forwarding of the subscription of 12*s*. to M. Masson, treasurer, 120, Boulevard St. Germain. This might be followed by a letter of apology for non-attendance, an expression of approval, and any statement which it might be thought useful to make. The name of the society would then appear in all the documents and in due course the society would receive the report of the proceedings, which will be a volume containing much useful information. For the modest outlay of 12*s*. the various societies that are not sending delegates would thus, nevertheless, contribute materially and morally to ensure the success of their colleagues of all nations who are struggling to promote the same cause that they are defending in England.

The programme and printed reports are now ready, and these, together with the card of membership which gives the right of free admittance to the Exhibition and to the sittings of the Congress, can be obtained on applying at the Masson Library, 120, Boulevard St. Germain. We are also asked to notify that the General Secretary of the Congress has changed his address and communications for him should now be addressed to Dr. Jules Glover, 23, rue de la Bienfaisance, Paris.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

### QUARTERLY MEETING.

A QUARTERLY meeting of the Council was held on July 12th, the President, Sir William Mac Cormac, Bart., K.C.V.O., being in the chair.

The PRESIDENT reported the re-election as members of the Council of Mr. John Tweedy and Mr. Alfred Cooper and the election of Mr. Ward Cousins and Mr. Alfred Pearce Gould.

Mr. Tweedy, Mr. Cooper, Mr. Ward Cousins, and Mr. Pearce Gould were introduced, made declarations in the terms of the oath as prescribed by the Charter of 1800, and took their seats as Members of the Council.

It was resolved that the salary of the conservator of the museum should be increased.

It was resolved to print 250 additional copies of the first

volume of the second edition of the "Physiological Catalogue."

It was resolved that the deputation to H.R.H. the Prince of Wales should consist of the President, the Vice-President, Mr. Bryant, as senior member of the Council, the Secretary, and the Assistant Secretary.

The Council then proceeded to the election of the Most Hon. the Marquess of Salisbury, K.G., and the Right Hon. the Earl of Rosebery, K.G., K.T., as Honorary Fellows of the College.

The alterations in the by-laws relating to the Fellowship were signed by the members of the Council who were present and they were sent to the Secretary of State for Home Affairs for approval.

The PRESIDENT reported that on the day appointed for a meeting of Fellows under Section XXIII. of the regulations of the Council the required quorum was not obtained, 20 Fellows only, including three members of Council, having attended, and accordingly no meeting had been held.

A letter was read from Mr. THOMAS BRYANT, reporting the proceedings of the General Medical Council at their late session, and the thanks of the Council were given to Mr. Bryant for his services as the representative of the College on the General Medical Council.

A report was read from Mr. MORTON SMALE, member of the Board of Examiners in Dental Surgery, upon Dental Education in the United States of America. Mr. Morton Smale was thanked for his report, which was referred to the Dental Board.

### ELECTION OF PRESIDENT AND OFFICERS.

Sir William Mac Cormac was unanimously re-elected President for the fifth time, and Mr. J. Langton and Mr. Henry Morris were appointed Vice-Presidents. Mr. Charles Stewart, Mr. Percy Furnivall, and Professor Christopher Addison were elected Hunterian Professors for the ensuing year. Dr. T. Grigor Brodie was elected Arris and Gale Lecturer and Mr. Walter Edmunds was elected Erasmus Wilson Lecturer. Mr. F. Canton was re-elected, and Mr. Storer Bennett was elected, a member of the Board of Examiners in Dental Surgery.

### THE HONORARY FELLOWS.

The following three distinguished Honorary Fellows have already been made:—

H.R.H. The PRINCE OF WALES, K.G., Elected June 14th, 1900.
The Most Hon. the MARQUIS OF SALISBURY, K.G. } Elected July 12th,
The Right Hon. the EARL OF ROSEBERY, K.G., K.T. } 1900.

The following is the list of Honorary Fellows of the Royal College of Surgeons of England who will be elected on Thursday next subject to their being present to receive the diploma:—

Albert, Eduard Professor of Clinical Surgery, University of Vienna.
Ball, Charles Bent, M.D., M.Ch., Regius Professor of Surgery, University of Dublin.
Bassini, Edoardo, Professor of Clinical Surgery, Royal University of Padua.
Bennett, Edward Hallaran, M.D., M.Ch., Professor of Surgery, Trinity College, Dublin.
Berg, John Wilhelm, Professor of Surgery, Royal Caroline Institute of Medicine and Surgery, Stockholm.
Von Bergmann, S. Exc. Professor Dr. Ernst, Geh. Med. Rath, Berlin.
Bloch, Oscar, Professor of Surgery, University of Copenhagen.
Bottini, Enrico, Professor of Clinical Surgery, Royal University of Pavia.
Cameron, I. H., Professor of Clinical Surgery, University of Toronto.
Cardenal Fernandez, Dr. Salvador, Vice-President Royal Academy of Medicine and Surgery, Barcelona.
D'Antona, Antonino, Professor of Surgery, Royal University of Naples.
Durante, Francesco, Professor of Clinical Surgery, Royal University of Rome.
Von Esmarch, S. Exc. Professor Dr. Friedrich, Wirkl. Geh. Rath, Kiel.
Halsted, William Stewart, M.D., Professor of Surgery, Johns Hopkins University, Baltimore.
Hingston, Hon. Sir William Hales, M.D., LL.D., D.C.L., Professor of Clinical Surgery, University of Laval.
Jameson, Surgeon-General James, C.B., M.D., LL.D., Director-General Army Medical Service.
Keen, William Williams, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia.
Kocher, Theodor, Professor of Surgery, University of Bern.
König, Professor Dr. Franz, Geh. Med. Rath, Berlin.
Küster, Professor Dr. Ernst Georg Ferdinand, Geh. Med. Rath, Marburg.
Lambotte, Elie, Brussels.
Lannelongue, Odilon Marc, Professor of Surgical Pathology, Faculty of Medicine of Paris.
Lennander, Karl Gustaf, M.D., Professor of Surgery and Obstetrics, University of Upsala.
Macewen, William, M.D., LL.D., F.R.S., Regius Professor of Surgery, University of Glasgow.
MacLeod, Colonel Kenneth, M.D., LL.D., I.M.S., Professor of Clinical and Military Medicine, Army Medical School, Netley.
Nicolaysen, Julius, Professor of Surgery, Royal University of Christiania.
Norbury, Sir Henry Frederick, K.C.B., Director-General, Medical Department of the Royal Navy.
Ollier, Leopold, Professor of Clinical Surgery, University of Lyons.
Pachoutine, Victor, President, Imperial Military Academy of Medicine, St. Petersburg.
Pozzi, Samuel, Professor, Faculty of Medicine of Paris.
Raye, Colonel Daniel Charles O'Connell, M.D., Indian Medical Service.
Roddick, Thomas G., M.D., C.M., Professor of Surgery, McGill University, Montreal.
Rubio y Gali, Federico, Member of the Royal Academy of Medicine of Madrid.
Sklifossovsky, Nicolas Wassilievitch, Director and Emeritus Professor, Imperial Clinical Institute of the Grand Duchess Helena Pavlovna, St. Petersburg.
Tillaux, Paul, Professor of Clinical Surgery, Faculty of Medicine of Paris.
Veliaminoff, Nicolas, Professor of Surgery, Imperial Military Academy of Medicine, St. Petersburg.
Warren, John Collins, M.D., Professor of Surgery, Harvard University.
Weir, Robert Fulton, M.D., Professor of Clinical Surgery, Columbia University, New York.

A deputation will attend at Marlborough House on July 24th to present the Diploma of Honorary Fellowship to H.R.H. the Prince of Wales.

The Marquis of Salisbury and the Earl of Rosebery and all the other Honorary Fellows have expressed their intention of attending the meeting to be held on July 26th, at 3 P.M., in the theatre of the University of London, Burlington-gardens, to receive their diplomas.

## COMMEMORATION DINNER OF THE EPIDEMIOLOGICAL SOCIETY.

A HIGHLY successful dinner of this society was held at the Grand Hotel, Trafalgar-square, on Friday, July 13th, to commemorate the fiftieth anniversary of the foundation of the society. The President, Dr. FRANKLIN PARSONS, occupied the chair, and among the guests who accepted the hospitality of the society were Sir Joseph Fayrer, Bart., K.C.S.I., F.R.S., honorary member of the society, Sir William Broadbent, Bart., F.R.S., Sir Douglas Powell, Bart., Sir Henry Norbury, K.C.B. (Director-General of the Royal Navy Medical Department), Sir Archibald Geikie, F.R.S. (Director-General of the Geological Survey), the President of the Royal College of Physicians (Dr. W. S. Church), the Parliamentary Secretary of the Local Government Board (Mr. T. W. Russell, M.P.), the Director-General of the Army Medical Department (Surgeon-General Jameson, C.B.), the Permanent Secretary of the Local Government Board (Mr. S. B. Provis, C.B.), the Legal Adviser to the Post Office (Sir Robert Hunter), the President of the Medical Society of London (Dr. Frederick Roberts), Dr. Farquharson, M.P., Mr. Harry Farnall, C.M.G. (of the Foreign Office), Professor Macfadyen (Director of the Jenner Institute), Professor Sims Woodhead, Sir James Crichton Browne, K.C.B., F.R.S., Professor Haldane, F.R.S., Dr. Dawson Williams, Mr. Fryer (of the Board of Trade), Dr. Hector Mackenzie, Mr. W. F. Blake, L.C.C., Dr. F. J. Allan, and many others, while among the members of the society present were Dr. W. A. Bond, Mr. R. M. Bruce, Dr. G. S. Buchanan, Dr. Bulstrode (honorary secretary), Dr. F. F. Caiger, Dr. Childs, Professor Corfield, Dr. J. W. H. Eyre, Dr. Wilfred Fletcher, Dr. E. W. Goodall, Dr. Russell Harris, Dr. Bruce Low, Dr. Spencer Low, Dr. J. MacCombie, Dr. Patrick Manson, C.M.G., F.R.S., Mr. Shirley Murphy, Dr. Newsholme, Colonel Lane Notter, R.A.M.C., Mr. W. C. C. Pakes, Dr. J. Frank Payne, Dr. R. Reece, Dr. J. Robertson, Mr. W. N. Shaw, F.R.S. (Secretary of the Meteorological Council), Dr. Steegmann, Mr. Hugh Stott, Dr. R. D. R. Sweeting (treasurer of the society), Dr. J. F. J. Sykes, Dr. Theodore Thomson, and Dr. B. A. Whitelegge. Each guest was presented with a little commemoration volume giving a short history of the foundation of the society and a list of its founders, presidents, treasurers, and honorary secretaries since the foundation.

The toast of "The Queen" having been proposed by the CHAIRMAN and duly honoured by the singing of the National Anthem by an admirable quartette, Sir ARCHIBALD GEIKIE proposed "The Navy and Army

and Auxiliary Forces" which was responded to by Sir HENRY NORBURY, K.C.B., and Surgeon-General JAMESON, C.B. The latter in the course of a very vigorous speech, which was listened to with great attention, discussed somewhat in detail the allegations directed against the hospital and ambulance arrangements in South Africa. The Royal Army Medical Corps have in the past not been without honour and appreciation, but now a change seemed to have come over the spirit of their dreams and criticism was in certain quarters rife. The service had still, however, its friends; and the support of such men as Sir William Mac Cormac, Mr. Treves, and Sir Redvers Buller, none of whom would give praise where it was undeserved, would have to be reckoned with. Lord Roberts, too, whose sympathy with the soldiers was a household word, would not have expressed his satisfaction at the arrangements had they been, as is alleged by some, insufficient in character and extent. There was also one other opinion that he (Dr. Jameson) valued most highly, and it was that of the German military medical attachés. They were with the British medical staff and had afforded them valuable assistance on many occasions. When the Germans returned to England he asked them if they had any improvements to suggest and they answered, "We have nothing to suggest." On the other hand, what were the qualifications of the men who criticised them? He (Dr. Jameson) had read the criticisms in question when he was on his way to Ireland; he thought they were much exaggerated and he determined, like Mr. Rhodes, to come back to London and "face the music." As he drove back through the streets of London the placards referring to "hospital scandals" and "atrocities" raised a question in his mind whether they were not working up to a prominent position in Madame Tussaud's collection. His duty was to provide beds for 10 per cent. of the troops and this had been done, and a *personnel* of over 8000 men and women had been provided for these beds. So liberal, indeed, had been the allowances that on several occasions he had been asked to furnish no further equipment, and on Thursday last he received a telegram from South Africa in these words: "Please do not send any more base hospitals." It was well known to the medical officers that exigencies might arise with which no service in the world could deal, and had the outbreak of enteric fever which was here the subject of consideration occurred in London itself the hospitals of the metropolis would not have been able to cope with the situation. The commission which had been appointed would bring out the truth, and the Army Medical Department asked for nothing other than this.

Sir JOSEPH FAYRER proposed the toast of "The Founders of the Epidemiological Society," and in a most interesting speech traced the history of the society's foundation. He referred to the circumstances which obtained in England just prior to 1850 and to the fact that the society, arriving, as it were, at the psychological moment, carried all before it. Amongst its founders were numbered the leaders of science and medicine of the day and the work which the society did was so much appreciated in Europe that Hirsch in 1860 dedicated the first edition of his now classical "Historical and Geographical Pathology" to it. Sir Joseph Fayrer referred to the valuable work performed by the several committees of the society and to the influence which the society had had in directing the Legislature with regard to the control of small-pox by means of vaccination. A reference to the list of presidents would at once convince the reader that in this particular the society, which might justly be termed "the father of preventive medicine societies," had been exceptionally fortunate. As regards the jubilee it had been determined that the event might be well and usefully marked by publishing an Index of the valuable papers which have appeared in the Transactions. Sir Joseph Fayrer paid a fitting tribute to the valuable contributions which had been made to the science of epidemiology by the writings of the outgoing President, Dr. Franklin Parsons, and he predicted that under the guidance of the President-elect, Dr. Patrick Manson, whose work in tropical diseases had been recently appreciated by the Royal Society, the society would enter upon the second 50 years' work with unabated vigour and utility. Of the names which appeared upon the historic roll of the founders there were but two survivors, Sir John Simon, K.C.B., and Sir Edward Sieveking, and age alone prevented their attendance at the feast. He proposed, however, that the names of these gentlemen should be coupled with the toast and that a telegram be despatched to each of them conveying to them a hearty greeting, a suggestion which was most cordially accepted and acted upon.

The toast of "The Public Health Service" was proposed by Dr. FARQUHARSON, M.P., and responded to by Mr. T. W. RUSSELL, M.P.

Dr. PATRICK MANSON proposed the toast of "The Visitors," and coupled with it the names of the President of the Royal College of Physicians and Sir James Crichton Browne.

Dr. CHURCH, who met with a very cordial reception, was unable to pass over in silence the fact that he had consented to take a place in the commission which was to proceed to South Africa to investigate the provisions made for the sick and wounded. He felt when Lord Lansdowne sent for him that unless he (Dr. Church) did what an Englishman never did—i.e., shirked his duty—he could not refuse to take part in the commission in question. He trusted, however, that all who knew him felt that he would enter upon the arduous and responsible duty which had devolved upon him with perfect impartiality. He could not but have a high regard for the Army Medical Service, but he trusted that this fact would in no sense preclude him from approaching the inquiry with a mind entirely free from bias. Dr. Church referred in a highly appreciative manner to the admirable work performed by the Epidemiological Society in elucidating the causes of epidemic diseases, and expressed regret that he had not himself been actively engaged in the work of the society. He trusted, however, that in spite of his having no special knowledge in this sense he was not without a certain amount of that commodity which the House of Commons were unwilling to allow that the medical profession possessed—i.e., common sense—and he hoped that by making use of that faculty he might be able to be of some use to his country.

Sir WILLIAM BROADBENT proposed the toast of "The President and Officers of the Society," which was responded to by Dr. PARSONS and Dr. BULSTRODE. The society had, Dr. Parsons stated, received many letters of regret and appreciation from different parts of the world and one which had just arrived from Russia ran as follows: "The young Russian Society of Preventive Medicine greets the venerable Epidemiological Society and heartily wishes it further flourishment.—President, Prince Petr of Oldenburg; Member of Council, Dr. Leo Berthenson; Secretary, Dr. Vonitch." Dr. Parsons referred in appreciative terms to the manner in which his work as President had been supported by the efforts of the treasurer and honorary secretaries, one of whom, Dr. Washbourn, was at that moment serving his country in South Africa. The Index to which Sir Joseph Fayrer had referred was, he added, compiled by Mrs. H. T. Bulstrode.

## ASYLUM REPORTS.

*The Nottingham City Asylum, Mapperley Hill (Annual Report for 1899).*—The average number of patients resident during the year was 659 and comprised 311 males and 348 females. There were 22 private patients in residence during the year, eight of them being males and 14 females. 152 patients were admitted during the year, 74 being males and 78 females. The admission rate was the lowest since 1891 and was 16 below the average for the past five years. Among the admissions there was an unusual number of senile cases, and many of the patients were in a weak and emaciated physical condition. Mr. Evan Powell, the medical superintendent, states in his report that the cases admitted were on the whole of an unfavourable character as regards hope of recovery. As to causes there was nothing unusual noticed; drink and hereditary influences headed the list. There were 62 patients discharged as recovered during the year, 32 being males and 30 being females, a total of 9·4 per cent. of the average number resident. Four female chronic patients were removed to the workhouse to make room for acute cases. The number of deaths during the year numbered 59, as against 53 in the previous year, or 9 per cent. of the average number resident. Of the deaths three were due to cardiac valvular disease, three to senile decay, three to epilepsy, four to bronchitis, four to cerebral atrophy, seven to phthisis, and 19 to general paralysis of the insane. "There is still much overcrowding in the female division, and as a consequence of this erysipelas has made its appearance on more than one occasion.

Besides the danger to the health of the patients the congested state of the wards renders it very difficult to treat the cases properly." The report states that the new female wing of the asylum will probably be ready for occupation in midsummer, 1900, when the overcrowding will be relieved temporarily, but the further steps to be taken for providing additional accommodation will be a matter for very serious consideration. Two of the sanitary blocks on the female side have been enlarged in a satisfactory manner. A female patient who was admitted in February gave birth to a full-term male child in August. The child was removed by the father, but the mother is still a patient in the asylum and is not likely to recover. The only casualty of a serious nature occurred in the female side, where a patient who was accidentally pushed down by another sustained a fracture of the neck of the femur. Four male and three female patients made their escape, but all were retaken after short periods of absence except two of the men, who succeeded in remaining away for the statutory 14 days when they were considered as discharged. The Lunacy Commissioners in their report state that a small isolation block should be provided for infec tious cases. "Had it not been that a patient recently attacked by scarlet fever was a small idiot child and could therefore be treated in the public fever hospital the present isolation hospital would have had to be emptied of the patients now residing there and much inconvenience and discomfort would have arisen." The Commissioners have had one grievance brought to their notice which they think is a substantial one, and that is "that the patients are taken to the Guildhall to be seen by the justices before they are sent to the asylum, as if they were criminals, and not visited in their own homes as sick persons would expect to be." The Commissioners advert to the insufficiency of the staff in No. 8 ward, where there were 45 patients, of whom 11 were in bed and eight were actively suicidal, in charge of four nurses. Post-mortem examinations were made in 88 per cent. of the deaths, and bed-sores were found to be present in 7 per cent. The case-books and other medical records are carefully kept and some pathological work is done, the committee having made the necessary additions to the appliances for the latter purpose.

*Leicester Borough Asylum, West Humberstone (Annual Report for 1899).*—The average population of the asylum was 561 patients—viz., 262 males and 299 females. The admissions during the year were 118, and comprised 49 males and 69 females. Dr. J. E. Montague Finch, the medical superintendent, states in his report that of the 118 admissions 27 had previously been patients in the asylum. "Many of the cases were in extremely feeble health when admitted. Two died on the day of admission and one on the third day. Many were bedridden and two were over 80 years." The chief cause of insanity among the patients admitted was hereditary tendency, which was a factor in 42 cases. Among the other causes were the following: intemperance in drink nine causes, mental worry and domestic trouble 10 cases, and senile brain decay five cases. The cases discharged as cured during the year amounted to 57—viz., 25 males and 32 females—a total of 10·1 per cent of the average number resident. The number of deaths during the year amounted to 30—viz., 19 males and 11 females, or 5 3 per cent. of the average number resident. Of the deaths two were due to cancer, two to phthisis, three to renal diseases, three to senile decay, five to cardiac disease, and nine to general paralysis of the insane. One death—viz., that of an elderly male patient—was due to suicide by cutting the throat. "Three inquests were held upon patients who died during the year. In two of these cases the patients were in a moribund condition when admitted." One of them died within an hour of admission from pulmonary apoplexy, and the other died within 12 hours of admission in an advanced stage of phthisis. The third inquest was on a case of suicide which occurred while the patient was out upon trial in charge of his friends after an absence from the asylum of some weeks. The general health of the asylum has been fairly good, and no disease of an epidemic character has occurred with the exception of a few sporadic cases of influenza. The only accident of a serious character was a fracture of the radius sustained by a patient during a struggle with another. A male patient escaped while at work on the farm and was not recaptured. On July 20th the memorial stone of the asylum extension was laid by Mr. George Clifton, the chairman of the committee, who at the time was also Mayor of Leicester. The main structure is now approaching completion, but there still remains a large amount of woodwork and other fittings to be done. "In the meantime it becomes more and more difficult to find accommodation for the increasing number of patients. ..... As at present determined, the contemplated additional blocks for 100 male patients and 30 female patients are not to be proceeded with, but it is more than probable that these will be required before many years have elapsed." The changes in the staff of attendants have been numerous, more especially towards the end of the year, when several reservists had to join the army. In these cases it was arranged by the committee that the dependent relatives should have an amount equal to half-pay during the absence of the attendant, and that he should be reinstated upon his return to civil life. The Lunacy Commissioners in their report state that they hope the committee will consider the propriety of erecting a new and detached building in preference to enlarging the present building for patients. An adequate staff continues to be maintained, giving one attendant for every 11 male patients and a nurse for every 10 female patients. The case books and medical records are stated to be well kept.

*East Sussex County Asylum, Hayward's Heath (Annua Report for 1899).*—The average number of patients resident during the year was 921, and comprised 388 males and 533 females. The number of admissions during the year amounted to 271, including 119 males and 152 females. Of these 44—viz., 19 males and 25 females—were re-admissions. Dr. C. E. Saunders, the medical superintendent, states in his report that the admissions show an actual increase of four males and 24 females on those of the previous year. As regards the expectancy of recovery 51 out of 109 males and 68 out of 150 females are tabulated as bad or hopeless. Of the male patients admitted 35 are regarded as actively suicidal and of the females 54 are so included. The patients discharged as recovered during the year amounted to 85 and comprised 38 males and 47 females, a total of 9·2 per cent. of the average number resident. The deaths during the year amounted to 90—viz., 44 males and 46 females—a total of 9·7 per cent. as calculated on the same basis. Of the deaths three were due to renal disease, four to pneumonia, two to broncho-pneumonia, three to bronchitis, five to phthisis, six to senile decay, seven to cardiac disease, 18 to organic brain disease (cerebral softening, atrophy, or tumour), and 18 to general paralysis of the insane. In one instance only was a coroner's inquest held, viz., in a case of death due to peritonitis caused by the perforation of a gall-stone. Accidents and casualties have been for the most part of an unimportant character and in no instance fatal. "This is a matter for congratulation, because the number of suicidal cases have been very numerous, and at one time there were no less than four patients admitted with cut throats within a few weeks of one another." Temporary buildings to accommodate 50 males and 50 females in two blocks were commenced in October, 1898, and will be shortly occupied. In June there was an outbreak of scarlet fever on the male side, and 16 persons were attacked, but all the cases had a non-fatal termination. The origin of the outbreak could not be traced, but there was a considerable epidemic in the neighbourhood at the time. Lectures were given to nurses and attendants during the winter to qualify for the certificate of the Medico-Psychological Association, and no less than eight nurses and 13 attendants were successful in obtaining certificates. The Lunacy Commissioners in their report draw attention to the fact that post-mortem examinations were made in only 34 per cent. of the fatal cases, and they "regret that so few post-mortems should be made here in comparison with most other asylums," for much importance is attached by them to the practice. Influenza appeared during the year and attacked 19 patients and 12 members of the staff. The number of patients deemed to be actually suicidal is returned as 75, or 8 per cent. of the total number resident, and the Lunacy Commissioners point out that "a staff of the strength which exists here must find it impossible to obey strictly the injunction of the cautionary parchment issued for these patients that they should never be left alone. It may be a question whether the feeling by attendants that this is so may not lead to a perfunctory discharge of the duty." The sanatorium is badly furnished with exits in case of fire, there being but one central staircase, and the Commissioners urge "that the defect should be somehow remedied. The medical records are duly kept. We must

express the opinion that with the addition of 100 patients to be housed in the iron buildings the services of a third assistant medical officer will be necessary." A third assistant medical officer has since been appointed.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Extent of the Famine.—The Prospects of the Plague Epidemic.—A New Policy in Calcutta.*

THE gifts of grain and money which are being sent from all parts of the world to relieve the starving natives of India show very imperfectly the real state of affairs. The accompanying table, which gives the number of persons in receipt of relief during the two weeks ending June 23rd in each province, pictures the enormous numbers affected as well as the widespread character of the distress:—

| Name of Province. | Week ending June 16th. | | | Week ending June 23rd. | | | Increase or decrease. |
|---|---|---|---|---|---|---|---|
| | Relief works. | Gratuitous relief. | Total. | Relief works. | Gratuitous relief. | Total. | |
| BRITISH PROVINCES. | | | | | | | |
| Madras | 12,701 | 3,150 | 15,851 | 13,704 | 3,140 | 16,844 | +998 |
| Bombay and Sindh | 1,104,086 | 204,509 | 1,308,595 | 1,149,633 | 228,667 | 1,378,300* | +69,705 |
| Bengal | 7,417 | 160 | 7,577 | 5,100 | 1,892 | 6,992 | -585 |
| North-West Provinces and Oudh | 1,048 | 727 | 2,135 | 1,974 | 781 | 2,755 | +620 |
| Punjab | 134,772 | 31,147 | 165,919 | 128,297 | 32,143 | 160,440† | -5,479 |
| Central Provinces | 1,237,632 | 733,899 | 1,971,531 | 1,123,640 | 817,743 | 1,941,383 | -30,148 |
| Berar | 361,857 | 103,610 | 465,467 | 359,802 | 120,101 | 479,903 | +14,436 |
| Ajmere-Merwara | 106,356 | 28,729 | 135,085 | 113,229 | 30,050 | 143,279 | +8,194 |
| Total British Provinces | 2,966,229 | 1,105,931 | 4,072,160 | 2,895,379 | 1,234,517 | 4,129,896 | +57,736 |
| NATIVE STATES. | | | | | | | |
| Rajputana States | 364,494 | 123,879 | 488,373 | 350,426 | 142,069 | 492,495‡ | +4,122 |
| Central India States | 178,868 | 38,095 | 216,963 | 117,987 | 31,681 | 149,668 | -67,295 |
| Hyderabad | 419,528 | 65,941 | 485,469 | 410,126 | 82,919 | 493,045 | +7,576 |
| Baroda | 56,672 | 35,141 | 91,813 | 64,884 | 34,153 | 89,037 | -2,776 |
| Bombay Native States | 492,819 | 62,458 | 495,277 | 414,201 | 53,241 | 467,442 | -27,835 |
| Punjab Native States | 27,308 | 22,498 | 49,006 | 24,056 | 12,285 | 35,341 | -13,465 |
| Central Provinces Feudatory States | 40,306 | 27,593 | 67,899 | 33,922 | 30,178 | 64,100 | -3,799 |
| Kashmir (Jammu) | — | — | — | 1,062 | — | 1,062 | +1,062 |
| Total Native States | 1,519,995 | 375,605 | 1,895,600 | 1,406,664 | 386,526 | 1,793,190 | -102,410 |
| Grand Total | 4,486,224 | 1,481,536 | 5,967,760 | 4,302,043 | 1,621,043 | 5,923,086 | -44,674 |

* Figures incomplete. † Return for the Umbala district wanting; the previous week's figures have been included.
‡ Returns for the States of Kherwara, Dungapur, Kotra, and Kushalgarh in Rajputana, and for the States of Dewas (Senior and Junior Branches), Bagli, Pathari, and Karaudia in Central India, are wanting; the previous week's figures for these States have been included.

I have to record a still further diminution in the number of deaths from plague throughout India. Last week there were only 282 deaths officially returned as due to plague. Of these, 106 occurred in Bombay and 108 in Calcutta. The North-West Provinces, the Punjab, the Central Provinces, Rajputana, and Aden were clear. Bombay city still returns a high general mortality—viz., 1048 for last week—a rate of over 66 per 1000 per annum. There were only 89 deaths from cholera returned and no other epidemic disease exists to explain the excess. It is pretty obvious that plague continues and is unrecognised to a much larger extent than is supposed. This rapid diminution in the mortality from plague in all parts of India must not be allowed to lull us into false hopes of a final disappearance of the disease from the country. The chances seem to be that while certain places hitherto severely attacked may not suffer so markedly in the future there are numerous areas only recently infected which will go through a series of recurrences.

The Bengal Government have just issued a letter concerning the prevalence of cases of plague in certain areas of Calcutta and directing that those areas should be more extensively disinfected. It is suggested by Government that disinfection of the entire tenement in which a case of plague has occurred should be carried out, the principle underlying the memorandum being that wider measures of disinfection should be practised. This seems at first sight a very reasonable policy; but it is by no means novel. The extraordinary part of this plague measure is that it is not accompanied by the conferring of any further powers on the plague authorities. The person who enters a tenement where a case of plague does not exist or has not existed is a trespasser and the authorities have no legal powers. The only way to carry out this extra disinfection is by an assumption of legal power which the officers do not possess. It would be much more straightforward to say outright that wholesale disinfection has got to be done, and that the officers concerned will have the full legal powers to perform it. At the present time it is not uncommon, I am informed, for offers of disinfection to be rejected. Considering that this measure of disinfection is now the sum and substance of all plague policy it seems extraordinary that it should be left to the will of the people. The consequence is that a very large number of houses which ought to be disinfected escape being treated.

June 28th.

THE SWANSEA GENERAL HOSPITAL.—The annual general meeting of this institution was recently held under the presidency of Colonel Morgan. The report stated that 892 in-patients had been admitted during 1899, the daily average number of occupied beds being 90·1, against 84 in 1898. The out-patients numbered 4392. The financial statement showed that during the year the adverse balance was reduced from £1391 to £845. The annual income was greater by £244. The workpeople's contributions showed an increase of £359, Baroness Patti-Cederstrom's concert realised £360 for the charity, and the house-to-house collections reached £418. During the year several much-needed improvements had been carried out in the building.

# Public Health and Poor Law.

## LOCAL GOVERNMENT DEPARTMENT.

### REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

*On Enteric Fever in the City of Chichester*,[1] by Dr. THEODORE THOMSON and Colonel J. T. MARSH, R.E.—This inquiry was ordered by the Local Government Board in response to local appeal from Chichester for help to ascertain the reason of the excessive typhoid fever prevalence in that city in recent years and particularly in 1898. The liability of this town to repeated recurrence of enteric fever in serious amount was well known and investigations had already been made by the Local Government Board in previous years.

The present area of Chichester is 1595 acres and its population is estimated at about 11,500. In general it may be said to stand on a gravel flat overlying clay of the London and Reading beds. Its water is derived partly from private wells sunk in the gravel but principally from a public supply obtained from deep wells in the chalk. Excrement disposal is effected either by water-closets or by cesspit privies; water-closets drain either to the sewers or to cesspools. An extensive and apparently well designed sewerage system was carried out in 1893–95, and nearly three-fourths of the houses now drain to the sewers. The principal difficulty with Chichester sewers has been to exclude subsoil water. Notwithstanding many alterations since the sewers were laid down subsoil water is still admitted in very large quantities; correspondingly, no doubt, sewage escapes into the subsoil water. Enteric fever prevalence in Chichester may be illustrated by the following table given by the inspectors:—

| Period. | City of Chichester. | | | England and Wales: enteric fever death-rate per 1000 living. |
|---|---|---|---|---|
| | Estimated population. | Enteric fever deaths. | Enteric fever death-rate per 1000 living. | |
| 1871–75 ... ... | 7,890 | 11 | 0·28 | 0·37 |
| 1876–80 ... ... | 8,020 | 26 | 0·65 | 0·28 |
| 1881–85 ... ... | 8,040 | 17 | 0·42 | 0·22 |
| 1886–90 ... ... | 7,920 | 12 | 0·23 | 0·18 |
| 1891–95 ... ... | 7,760 | 3 | 0·08 | 0·17 |
| 1896–98 ... ... | 11,000 | 21 | 0·64 | 0·17 |

It will be noticed that typhoid fever mortality in Chichester, having been in excess of that of England and Wales throughout the 15 years 1876–90, fell below it in 1891–95, but again rose to a very high level in the three years 1896–98. As regards notified cases of the disease, in 1896 there were 116, in 1897 there were 129, in 1898 there were 100, and in 1899, according to a postscript to the report, 76 cases had occurred up to the end of September. Dr. Thomson gives an account of a comprehensive study of the incidence of enteric fever on locality in Chichester, illustrated by two series of maps. One set shows the position of invaded dwellings in each of the years 1896, 1897, and 1898—the dates on the maps themselves have evidently been misprinted—another shows the distribution of deaths referred to enteric fever and continued fever during (*a*) the period 1870–84 and (*b*) the period 1885–98. This last set is instructive. No safe conclusions as to distribution of enteric fever on locality could be drawn from the comparatively small number of deaths in any given year, but in the combinations of 15 and 14 years, notwithstanding obvious possibilities of error, there is a much greater chance of obtaining an approximation to the facts. Similar maps might be constructed with advantage for other places than Chichester.

Study of the maps shows that in the three years 1896–98 enteric fever has shown a distinct preference for particular quarters of Chichester, especially certain parts which lie outside the line of the old city walls. During the remaining 25 years under consideration, however, the distribution does not always appear to have been the same. Thus in the earlier years the area within the line of the city walls seems to have had no such comparative immunity from typhoid fever as has latterly been the case.

Space does not allow us to follow Dr. Thomson in his discussion of the sundry causes of enteric fever in their possible application to the phenomena of its endemic prevalence in Chichester. After exhaustive consideration he is able to eliminate from any important share in the maintenance of the disease the consumption of infected milk and shellfish—no reference is made to other foods which occasionally have been known to convey typhoid infection—the use of infected drinking-water, infection by way of sewers, changes in rainfall, and variations in level of the subsoil water. Accusations which some of the inhabitants of Chichester appear to have brought against their recent works of sewerage that these works had directly or indirectly brought upon the town the recrudescence of its enteric fever the inspectors show good grounds for disbelieving. There was not, as a whole, a disproportionately heavy incidence of fever on the sewered population, there was no parallelism between the behaviour of the fever in the several subdivisions of the town and the sewerage conditions of those subdivisions, nor were there any facts indicating that infective sewer air could have explained the local incidence. By a process of exclusion of the above factors the question of soil is arrived at. The localities specially affected during 1896–98 are considered in their relation to soil and to opportunities of soil pollution. One point is particularly worthy of attention—that the poorer neighbourhoods where the fouling of the soil is likely to be greater than elsewhere have during the three years 1896–98 suffered most heavily. Nevertheless this does not seem to have held good during the earlier period 1870–84, when no special preference for the poorest neighbourhoods seems to have been shown. Again, although in some instances there seems to have been a greater proportionate incidence of fever upon neighbourhoods where cesspit privies preponderate over cesspools, when the whole period is reviewed cesspool and cesspit privy neighbourhoods seem to have suffered in much the same degree. From these and many other considerations the inspectors conclude that the mere fact of there being abundant opportunities of soil pollution in Chichester does not suffice as an explanation of the long-continued prevalence of enteric fever in serious amount there. Nevertheless as a result of a careful investigation of local circumstances they are disposed to see a possible explanation in the existence of certain soil conditions peculiar to Chichester or which Chichester may share with other towns in which enteric fever is endemic. "Hypothesis of the existence in Chichester of soil conditions especially favourable to the viability and growth of the infective material of enteric fever is not inconsistent with the facts ascertained by us and set out in this report. But, on the other hand, such hypothesis, while not inconsistent with these facts, does not at present afford an adequate explanation of features that have characterised the fever in its distribution in time and place in Chichester. Fuller knowledge of soil conditions in their relations with fever prevalence may account for these features; without that knowledge it is not possible to arrive at definite conclusions." Few will question the desirability of further research into the subject. Not the least valuable part of this report is that containing suggestions as to the lines upon which an inquiry should be conducted, which is "urgently called for in the interests not only of Chichester but also of not a few other localities in this country where enteric fever is endemically prevalent in such amount as to take year after year a toll of deaths greatly in excess of the proportion claimed by this disease in England and Wales as a whole."

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Dublin: Hodges, Figgis, and Co. Price 4s. 6d.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6470 births and 3476 deaths were registered during the week ending July 14th. The annual rate of mortality in these towns, which had been 15·1 and 14·5 per 1000 in the two preceding weeks, rose again to 15·6 last week. In London the rate was 14·2 per 1000, while it averaged 16·5 in the 32 provincial towns. The lowest death-rates in these towns were 9·6 in Portsmouth, 11·1 in West Ham, 11·3 in Brighton, and 11·5 in Croydon; the highest rates were 19·7 in Oldham, 19·8 in Newcastle, 20·0 in Manchester and in Gateshead, and 20·9 in Liverpool. The 3476 deaths in

these towns included 427 which were referred to the principal zymotic diseases, against 419 and 344 in the two preceding weeks; of these 104 resulted from measles, 102 from diarrhœa, 96 from whooping-cough, 72 from diphtheria, 27 from "fever" (principally enteric), 24 from scarlet fever, and two from small-pox. No fatal case of any of these diseases occurred last week in Norwich; in the other towns they caused the lowest death-rates in Portsmouth, Bolton, Preston, Bradford, and Leeds, and the highest rates in Cardiff, Derby, Sheffield, and Gateshead. The greatest mortality from measles occurred in Derby, Oldham, Sunderland, and Newcastle; from whooping-cough in Derby, Burnley, Sheffield, and Gateshead; from "fever" in Huddersfield and Wolverhampton; and from diarrhœa in Blackburn, Sheffield, and Gateshead. The mortality from scarlet fever showed no marked excess in any of the large towns. The 72 deaths from diphtheria included 26 in London, nine in Leicester, five in Cardiff, five in Salford, and five in Sheffield. One fatal case of small-pox was registered last week in Liverpool and one in Oldham, but not one in any other of the 33 large towns. There were 17 cases of small-pox in the Metropolitan Asylums Hospitals on Saturday last, July 14th, against 16 and 17 at the end of the two preceding weeks; four new cases were admitted during the week, against eight and four in the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1861, against numbers increasing from 1754 to 1843 in the five preceding Saturdays; 208 new cases were admitted during the week, against 219, 210, and 229 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 268 to 140 in the five preceding weeks, rose again to 160 last week, but were 26 below the corrected average. The causes of 34, or 1·0 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, Hull, and Newcastle; the largest proportions of uncertified deaths were registered in Brighton, Birmingham, and Liverpool.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·9 and 17·7 per 1000 in the two preceding weeks, further declined to 17·2 per 1000 during the week ending July 14th, but was 1·6 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 10·6 in Leith and 15·1 in Aberdeen to 18·1 in Edinburgh and 20·5 in Dundee. The 533 deaths in these towns included 23 which were referred to diarrhœa, 21 to whooping-cough, 17 to measles, seven to scarlet fever, four to diphtheria, one to small-pox, and not one to "fever." In all 73 deaths resulted from these principal zymotic diseases, against 83 and 85 in the two preceding weeks. These 73 deaths were equal to an annual rate of 2·4 per 1000, which was 0·5 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had increased from 19 to 32 in the three preceding weeks, declined again last week to 23, of which nine occurred in Glasgow, five in Greenock, two in Edinburgh, two in Dundee, two in Aberdeen, and two in Paisley. The deaths from whooping-cough, which had been 26 and 22 in the two preceding weeks, further declined to 21 last week, and included 12 in Glasgow, two in Dundee, and two in Paisley. The fatal cases of measles, which had risen from 14 to 20 in the three preceding weeks, declined again last week to 17, of which nine were registered in Glasgow, six in Edinburgh, and two in Paisley. The deaths from scarlet fever, which had been seven and four in the two preceding weeks, rose again to seven last week and included five in Glasgow. The fatal cases of diphtheria, which had been two in each of the two preceding weeks, rose last week to four, of which three occurred in Glasgow, where the fatal case of small-pox was also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 97 and 72 in the two preceding weeks, further declined last week to 71, but exceeded by 18 the number recorded in the corresponding period of last year. The causes of 35, or nearly 7 per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 20·0 and 17·8 per 1000 in the two preceding weeks, rose again to 18·2 during the week ending July 14th. During the past four weeks the death-rate in the city has averaged 18·5 per 1000, the rate during the same period being 13·9 in London and 17·1 in Edinburgh. The 122 deaths belonging to Dublin registered during the week under notice were three in excess of the number in the preceding week, and included eight which were referred to the principal zymotic diseases, against three and six in the two preceding weeks; of these, four resulted from whooping-cough, three from "fever," and one from diarrhœa. These eight deaths were equal to an annual rate of 1·2 per 1000, the zymotic death-rate during the same period being 1·8 in London and 1·9 in Edinburgh. The fatal cases of whooping-cough, which had been one, two, and three in the three preceding weeks, further rose to four last week. The deaths referred to "fever," which had been two, nil, and one in the three preceding weeks, rose last week to three. The 122 deaths in Dublin last week included 16 of infants under one year of age and 28 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons exceeded the number recorded in the preceding week. Eight inquest cases and five deaths from violence were registered; and 60, or nearly one-half, of the deaths occurred in public institutions. The causes of two, or 1·7 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

Deputy-Inspector-General H. T. Cox is appointed to Plymouth Hospital.

### ROYAL ARMY MEDICAL CORPS.

During the absence on leave of the Principal Medical Officer in Ireland till August 4th his duties will be performed by Lieutenant-Colonel F. G. Adye-Curran. Surgeon (on probation) A. D. Jameson has arrived in London for temporary duty. Major F. M. Baker, from half-pay, to be Major, with precedence next below Major S. C. B. Robinson, vice J. Minniece, deceased. Lieutenant-Colonel Samuel James Flood retires on retired pay on account of ill-health. Temporary Lieutenant George Black, Surgeon-Lieutenant 2nd Volunteer Battalion the Royal Sussex Regiment, is granted the temporary rank of Captain whilst employed in South Africa.

### INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the promotion of Lieutenant-Colonel John Thomas Brownrigg Bookey, Bengal Establishment, to Colonel. Her Majesty has also approved of the retirement from the service of the undermentioned officers:—*Bengal Establishment:* Lieutenant-Colonel Charles Joseph McCartie, Lieutenant-Colonel Dennis Wood Deane Comins, and Lieutenant-Colonel John Francis Tuohy.

### VOLUNTEER CORPS.

Submarine Miners: The Severn Division: John David Williams to be Surgeon-Lieutenant. *Rifle:* 1st Volunteer Battalion the King's Own (Royal Lancaster Regiment): Captain Richard John Morris resigns his commission and is appointed Surgeon-Lieutenant. 2nd Volunteer Battalion the Royal Scots Fusiliers: Surgeon-Lieutenant W. Roxburgh to be Surgeon-Captain. 1st Volunteer Battalion the Northamptonshire Regiment: Surgeon-Captain E. P. Dickin resigns his commission. 1st Volunteer Battalion the Gordon Highlanders: John Farquhar Christie to be Surgeon-Lieutenant. 24th Middlesex: Surgeon-Captain J. D. Grant to be Surgeon-Major.

### TRANSVAAL WAR NOTES.

Lieutenant-Colonel Kenny, R.A.M.C., Major Tuke, R.A.M.C., Major Blenkinsop, R.A.M.C., and Major Hathaway, R.A.M.C., left Cape Town invalided in the *Aurania* on July 7th for England.

We understand that the Sick and Wounded Officers' Surgical and Medical Aid Committee, originally formed to provide medical and surgical aid for those who have suffered in South Africa, are equally prepared to render assistance to

officers returning home from other theatres of war. Applications should be addressed to the Hon. Arthur Brodrick at Hampden House.

The *Times* announces that in connexion with Princess Christian's Homes of Rest for Discharged Soldiers and Sailors now in course of erection at Bisley, Her Majesty the Queen has been graciously pleased to endow two beds, their Royal Highnesses the Duke and Duchess of York endow one bed for a soldier or sailor, her Royal Highness Princess Christian of Schleswig-Holstein one bed for the King's Royal Rifles, and their Highnesses Princess Victoria of Schleswig-Holstein and Princess Aribert of Anhalt a bed for a "Greenjacket."

The following steamships have arrived at Southampton carrying invalids and wounded men from South Africa. The *Kildonan Castle* arrived on July 11th and the *Dunera* on July 12th. From the former 100 patients were admitted at the Royal Victoria Hospital, Netley, and from the latter 11 cases. Only the severe cases were sent to Netley, the remainder being sent on to other stations. At Netley eight wards are now full of patients suffering from enteric fever.

Major A. S. Rose is in medical charge of the hospital ship *Arcoa* which left Southampton for South Africa on July 18th.

Lieutenant Morris, R.A.M.C., has left England for duty in South Africa.

### THE SOUTH AFRICAN COMMISSION.

This matter has now been definitely settled and the commission has been increased from three to five by the addition of two lay members with undeniable business qualifications. An objection was raised from the first to one of the three eminent names submitted by the Government. It is absurd to suppose that a man of the high personal character and integrity of Professor Cunningham will not bring to the work a perfectly unbiased judgment; it would be an insult to him to suppose otherwise. It is rather on the score of his scientific attainments in a special direction that we ventured to think that a man of far less scientific reputation might have proved better adapted and more useful for conducting such an investigation. We think, too, that the commission will, in the first instance, have to learn its business from the evidence that will be brought before it, and that for various practical reasons it would have been well if it had someone at hand well versed in military systems. There was no reason why such an individual should have taken part in the deliberations of the commission or signed its report. But it has been ruled otherwise. We may call our readers' attention to an article in the *Standard* of July 18th on the subject of this commission.

### DEATHS IN THE SERVICES.

Surgeon-Lieutenant-Colonel William Wellington Lake, M.M.S.C., Volunteer Company Royal Army Medical Corps, at Bloemfontein of Bright's disease, on July 13th. Educated at St. Thomas's Hospital, he was admitted a Licentiate of the Royal College of Apothecaries in 1876, and a Member of the Royal College of Surgeons of England in 1877. In 1898 he was appointed surgeon-major of the Militia Medical Staff Corps and volunteered for service and went to South Africa with the Volunteer Company of the Royal Army Medical Corps in the early part of this year. For active service in the field as a surgeon in the Ottoman army he received the medal and the fourth class of the Medjidieh for his services during the Russo-Turkish war of 1877-8. Mr. Wellington Lake held many public appointments, among them being those of deputy coroner for West Surrey and medical officer of health for the Guildford and Woking districts of the same county.

### THE ASHANTI CAMPAIGN.

With so many other and bigger matters on hand in China and South Africa it is not surprising that recent events in Ashanti and the little campaign for the relief of Kumasi have been comparatively lost sight of. But there has been a fine exhibition of British courage, endurance, and skilful management of late in this very unhealthy and malarious part of the world. What with the fighting with savages and fever, short rations, flooded districts, and trying marches there must have been a good number of wounded and a great deal of sickness, and the wonder is whether medical aid, quinine, and suitable or even sufficient food for the sick were obtainable. It seems to be nearly certain, however, that Colonel Willcocks has succeeded in relieving the hard-pressed garrison at Kumasi.

### LEAN'S ROYAL NAVY LIST.

Lean's Royal Navy List, published by Messrs. Witherby and Co., 326, High Holborn, and 4, Newman's-court, Cornhill, price 7*s.* 6*d.*, is so well known and is of such practical utility that scarcely anything is required but a reminder to our readers that a new issue is ready. We note, however, that the July issue of this quarterly "complete encyclopædia of our first line of defence," which is now ready, includes the war and meritorious services in South Africa of naval officers connected with that campaign.

### THE ORDER OF THE MEDJIDIEH.

The Queen has given her Royal authority that Major Richard Hugh Penton, D.S.O., R.A.M.C., may accept and wear the insignia of the Imperial Ottoman Order of the Medjidieh (third class) conferred by His Highness the Khedive of Egypt, authorised by His Imperial Majesty the Sultan of Turkey in recognition of service in the Soudan during the year 1899.

### MILITARY HOSPITAL, DEVONPORT.

280 invalid soldiers arrived at the Military Hospital, Devonport, on July 14th, and 350 were disembarked at Plymouth subsequently.

# Correspondence.

"Audi alteram partem."

## FACTORY GIRLS' COUNTRY HOLIDAY FUND.

*To the Editors of* THE LANCET.

SIRS,—We again beg for the powerful aid of the press on behalf of the Factory Girls' Country Holiday Fund. Owing to the liberal help of the public we were able last year to give a country holiday of a week or more to 2200 working girls and women employed in all parts of London in factories and workshops. So many are again waiting to go that we are compelled to make a very urgent appeal for funds. Many of these toilers know nothing of the delights of country life and surroundings. Those who have been away appreciate the change and rest more every year and for months save a few pence weekly out of their scanty earnings towards their expenses; £515 were contributed by them in this way last year. They are sent to the seaside and to country villages, and the greatest care is taken in making all arrangements for their holiday. The cottagers with whom they are boarded and the ladies, clergy, and others who look after them during their stay do their utmost to give them a happy holiday; the cottagers in many cases beg to have the same visitors year after year. When it is remembered that many of the girls are little more than children of 14 years of age and upwards, spending the best part of their lives in hot crowded factories, and that in many cases they are in large measure the bread-winners of the family, we feel sure that their claim for a short holiday in fresh air and country surroundings with freedom from daily toil and worry will not be disregarded.

We are, Sirs, yours obediently,

(Signed) M. LONDIN,
EDW. ROFFEN,
BEATRICE B. TEMPLE,
G. F. BRISTOL,
E. GARRETT ANDERSON, M.D. Paris,
FRANK LLOYD,
H. ADLER, Chief Rabbi,
EDWARD CANNEY,
Chairman of the Executive Committee.
MARGARET A. WYATT,
Honorary Treasurer.

S. Peter's Rectory, Saffron Hill, London, E.C., July 12th, 1900.

## THE NEED FOR REFORM IN DEATH REGISTRATION.

*To the Editors of* THE LANCET.

SIRS,—A few weeks ago the vestry of Plumstead addressed a letter to the Westminster vestry informing them that in the Plumstead registration district almost 3·5 per cent. of the deaths were uncertified either by a medical practitioner or by a coroner. As this seemed a large percentage of uncertified deaths in one district alone I took some trouble in finding out how the law stands at present and how its provisions are carried out. At the outset I was appalled to discover that it is apparently

not necessary for the cause of death to be certified by a medical practitioner or by a coroner. In fact, it seems fairly clear that all the law demands is *registration* and not *certification*, and that the act of registration without certification is made easy in some districts and difficult in others. The act of registration is performed by the registrar, who need not necessarily have information either from a medical practitioner or a coroner, but can register a death on the information of a layman present at the death—"a qualified informant"—if he has no reason to suppose that the death was due to violence or accident or occurred under suspicious circumstances. These last must be referred to the coroner.

A Committee of the House of Commons was in 1893 appointed to consider the question and amongst other recommendations the following is particularly noticeable: "Your Committee ..... have come to the conclusion that uncertified deaths should as a class cease to exist and that means should be devised whereby a medical certificate should be obtained in every case not certified by a registered medical practitioner in attendance." The reason given for this is that there is no uniformity of practice amongst registrars and that in some districts cases are registered which in others would be referred to the coroner. Most uncertified deaths occur amongst infants and especially amongst illegitimate children, and it is not difficult to see how, in the case of infants, registration without certification makes murder easy. From the report of the Committee it is evident that uncertified deaths are on the whole diminishing steadily, but further examination of the figures shows that in some districts the percentage is still very large, and that it is extremely probable that under the existing law there will always be an irreducible minimum. To get rid of this quantity an alteration of the law is urgently necessary. The Committee recommended that a medical certifier should be appointed to make a personal inquiry into all uncertified deaths. They further recommended that he should be the medical officer of health, and probably their recommendation is the best one, though there are several reasons against it. The only other medical man likely to be appointed would be the police surgeon, but there would be in the public idea great sentimental opposition to a police surgeon inquiring into a cause of death. It would immediately create objection as implying suspicion of foul play. But whoever the certifier may be I am sure that he should not be allowed to perform a post-mortem examination without a coroner's order and that he should always send his report to the coroner, and that the latter should be, as now, the authority for determining whether an inquest should be held or not. That an alteration of the law is necessary has been asserted by a Committee of the House of Commons, whose recommendation has been approved by the London County Council, by the Society of Medical Officers of Health, and by the Coroners' Society.

I am, Sirs, yours faithfully,

Buckingham Gate, S.W., July 16th, 1900. H. A. DES VŒUX.

## "THE COMPARATIVE GERMICIDAL ACTION OF SOME DISINFECTANTS."

*To the Editors of* THE LANCET.

SIRS,—I have read Mr. A. H. Burgess's article under the above heading in THE LANCET of June 23rd (p. 1797) with much interest and no little surprise. The results set forth in the article are of such an extraordinary nature and so altogether opposed to those obtained by myself when working with many of the same disinfectants that I feel constrained to express considerable doubt in the efficiency of the *thread method* as employed by Mr. Burgess. This method was condemned as long ago as 1890 by Dr. V. von Gerlach. Commenting on the results obtained by Remouchamps and Sugg when estimating the comparative value of certain preparations of phenol and cresols—in *solution* and *emulsion*—Von Gerlach states that he suspended threads in solutions and emulsions of phenoloids for an hour, after which he hung them for another hour in about 400 cubic centimetres of water, at the expiration of which time the threads which had been suspended in the emulsions "smelt plainly of the disinfectant," and that he "had to ascribe absence of growth in the gelatin to insufficient washing of the threads, *as subsequent inoculation with vigorous cultures proved.*" From which it will be seen that when working with emulsions there must ever be a certain amount of doubt attaching to investigations carried out with this method, as an alternative to which I should like to recommend one I have employed in several thousands of experiments with most regular and consistent results. This method has the further advantage of being extremely simple. Briefly stated it is as follows. To a known volume of an active culture of the organism add an equal volume of the dilute disinfectant; shake and take sub-cultures in suitable media at definite intervals. Incubate for at least two days at 37° C. In practice I prefer to take five cubic centimetres of a 24-hours' blood-heat culture of the organism to five cubic centimetres of, say, 0·2 per cent. disinfectant. This reduces the percentage of the latter to 0·1. (I may add the disinfectants are allowed to act at a room temperature of about 15° C.) Sub-cultures are then taken every two and a half minutes up to 15 in tubes containing about 10 cubic centimetres of bouillon. No exception can be taken to this method as regards the introduction of disinfectant during inoculation. I have made careful weighings and find that any disinfectant in the bouillon tubes introduced with the "loopful" employed in inoculation is present in such an extreme state of dilution (1 in 6,000,000) as to be quite innocuous.

I am, Sirs, yours faithfully,

Clapham, S.W., July 14th. J. T. A. WALKER.

## PADDLING IN THE SEA.

*To the Editors of* THE LANCET.

SIRS,—My object in writing is to try to do a good turn to the thousands of children who are now going to the seaside. For some reason or other paddling is very generally condemned by the medical profession. My own experience, extending over some 30 years, is that the practice is most beneficial. The children love it and a child who has once paddled, when at the seaside always craves to do it again. I have no idea on what grounds the medical objection is based, but for some reason or other the prohibition is strongly impressed on the parents. The parents think the cold water to the feet sends the blood to the head, and believe that the hot sun on the head and the cold water to the feet are injurious. No doubt the same blood which is cooled in the legs is circulating through the brain and certainly the children's legs are red after paddling, so I suppose if it does anything it what people call "draws blood" to the legs and tends to prevent congestion elsewhere. A child on a very hot day is fretting and sweating, but a child paddling on such a day is perfectly happy and does not feel the heat. There is certainly no undue fatigue in standing, walking, or trotting about in the shallow water. Paddling seems a trivial subject for a letter in THE LANCET, but I am so convinced that it does the children good that I trust this may get inserted.

I am, Sirs, yours faithfully,

WM. KNIGHT TREVES, F.R.C.S. Eng.

Margate, July 12th, 1900.

## THE JOINT COMMITTEE TO OPPOSE MIDWIVES REGISTRATION: AN APPEAL FOR FUNDS.

*To the Editors of* THE LANCET.

SIRS,—I have been directed to request the favour of space and permission to appeal to the readers of THE LANCET for donations to the voluntary fund to carry on the work of this committee. Its operations thus far have, on very limited resources, been most successful, being based on the broad principle of maintaining the rights of the profession as essential to the public welfare. Memorials to Members of Parliament have been well signed in large and important centres, and signatories have besides given letters introducing the representative of my committee, who has thus obtained personal interviews with about 20 and correspondence with over 30 Members of Parliament on the influential introduction of electors. Of these the most successful were the memorials and introductions of Mr. Griffith-Boscawen's medical constituents, securing his valued support, serviceable motion to consider the Bill "upon this day three months," and admirable speech imparting a new and improved tone to the debate.

Although the Bill is probably dead for this session very vigorous action is necessary in the constituencies to rouse

medical electors to bring home to Members of Parliament the real nature and grave danger of the proposed recognition of midwives by law to render *medical services* in labour. The registration of midwifery or monthly nurses is not opposed. The distinction taken is that diagnosis of presentation and conditions in labour is a difficult and highly responsible medical service which can be safely entrusted only to medical skill and knowledge. This my committee finds Members of Parliament readily grasp A medical Parliamentary division has been formed at Lewisham for local medico-political work. For the extension and organisation of our work in Parliamentary divisions funds are urgently required. About £30 have been expended, but to carry out our procedure throughout England and Wales at least £200 are needed.

Donations may be sent to the honorary treasurer, Dr. F. Lorimer Hart, Kirkdale, Sydenham, S.E., and further information may be obtained from the honorary secretaries, Mr. R. B. Anderson, and Mr. S. R. Russell Matthews, at the secretarial address, 32, Montague-place, London, W.C.

I am, Sirs, yours faithfully,

July 18th, 1900. F. S. TOOGOOD, M.D. Lond., Chairman.

## "THE NATIONALISATION OF TRINITY COLLEGE, DUBLIN."

*To the Editors of* THE LANCET.

SIRS,—The controversy in THE LANCET on the above subject will, I feel sure, have convinced your readers not only that Irish university education is a difficult and thorny question, but that it is futile to put forward "the nationalisation of Trinity College, Dublin," as a settlement of it until there is some agreement as to what this phrase really means.

Your correspondent "A.M., M.D. Dub. University," says that what he understands as "The Nationalisation of Trinity College, Dublin," is its "desectarianising" *plus* the removal and endowment of its divinity school. On the other hand, I hold that the "complete desectarianising" of Trinity College will not make it a "national" university or college. To "nationalise" a university or college you must have among its governing body—professors, Fellows, and officials—representatives of all classes and creeds. Irish Roman Catholics and Presbyterians must have a fair share in its government and administration; the other existing colleges in Ireland must have their claims duly recognised; and, finally, the degrees of a "nationalised" university must be thrown open freely to the members of both sexes.

Now, Sirs, suppose—to look at the question from a practical point of view—a statesman of either of the great political parties adopts as the solution of the Irish University question, "the nationalisation of Trinity College, Dublin," in the narrow sense recommended by your correspondent, and brings forward such a measure in Parliament. He will soon find that he will be opposed, as indeed "A.M., M.D. Dub. University" freely admits, by the authorities of Dublin University; the Presbyterians of Ireland (who number 446,687) would not accept such a solution of the question because they would have no adequate representation on the governing body; the other colleges in Ireland would be up in arms against such a scheme, fearing their extinction; the Irish Roman Catholics would also decline to accept such a settlement; and women of all political parties would protest against the establishment of any new, or the rearrangement of any old, university unless all its degrees were open to their sex. No statesman, not even "a Government endowed with a backbone" (to quote your correspondent) could overcome such opposition. If, on the other hand, the statesman would propose as his measure the more thorough nationalisation of Trinity College, Dublin, such a scheme as I have foreshadowed, it would be opposed even more fiercely by the authorities of Trinity College, and I am sure it would not satisfy the demands of the Roman Catholic hierarchy in Ireland, and so the statesman after such unfortunate experiences would be compelled to agree with your original view—"the proposal to nationalise Trinity College is therefore as useless as it is impracticable"—while, I may be allowed to add in conclusion, adopting the classical diction of "A.M., M.D., Dub. University," no one "outside the walls of a lunatic asylum" would put forward as the settlement of Irish University education any form of "nationalisation of Trinity College, Dublin."

I am, Sirs, yours faithfully,

July 17th. IRISH GRADUATE.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*The Liverpool School of Tropical Medicine: Official Recognition by the Government.*

THE Liverpool School of Tropical Medicine, which had only received partial recognition, has now been fully recognised by the Government as a training school for medical men proceeding to the colonies to take up Government appointments. Mr. Chamberlain, in a complimentary letter recently addressed to Mr. Alfred L. Jones, the chairman of the school, expressed his appreciation of the admirable work which is being done by the school, together with his cordial good wishes for the success of the new expedition in connexion with the school which had recently sailed for the region of the Amazon. Mr. Chamberlain concluded a flattering letter by intimating that the steps necessary to give effect to his decision will be taken at an early date. Lord Salisbury has also informed Mr. Alfred Jones that all medical officers proceeding to the African protectorates under the administration of the Foreign Office will be required to undergo a course of instruction for two months, either at the London or the Liverpool school of tropical medicine. The enterprise and public spirit shown by the Liverpool School of Tropical Medicine in the despatch within 12 months of three expeditions to the tropics for the elucidation of the causes of malaria, dysentery, and yellow fever, fully entitled it to official recognition by Government (in conjunction with the London School of Tropical Medicine) as a training school for colonial medical officers. Liverpool is to be congratulated on the position which its school of tropical medicine will now take in the world, and there can be no doubt that, with such an auspicious beginning, it will go on and prosper.

*Liverpool Stanley Hospital.*

The vacancy on the staff of physicians at the Stanley Hospital, through the resignation of Dr. C. J. Macalister, has been filled by the appointment of Dr. R. J. Buchanan, assistant physician. Dr. Buchanan had a successful career at the medical school of University College, Liverpool, and his promotion to the higher post at the Stanley Hospital is fully endorsed by his professional brethren. The method of election in the matter of proxies was taken exception to by the other candidates, and there can be no doubt that the system ought to be abolished. The electorate at this hospital is cumbersome, consisting of some hundreds of subscribers of one guinea and upwards, so that here also there is room for an improved method of election to the higher medical posts.

*The Joint Parochial Hospital for Tuberculosis.*

The joint committee of the unions of Liverpool, West Derby, and Toxteth Park have decided to purchase land at Heswall for the erection of the joint parochial hospital for tuberculosis at a cost of about £4200. The site of the new hospital is a pleasant plot of land on the slope of the hill overlooking the river Dee and the distant Welsh mountains. Mr. C. H. Lancaster has been appointed the architect and he is now engaged on the plans of the proposed building.

*Low Death-rate in Liverpool.*

The medical officer of health reports the interesting fact that there were 64 deaths less during the week ending July 7th than in the corresponding week of last year, the rate of mortality being 18·2 per 1000 of the inhabitants as compared with 23·2 per 1000 at the same period of last year, when there were 299 deaths.

*Liverpool Country Hospital for the Chronic Diseases of Children.*

The garden fête which was held last week at Woolton Wood, the residence of Mr. Holbrook Gaskell, in aid of the funds for the proposed Country Hospital for the Chronic Diseases of Children realised £528 2*s.* 6*d.* The institution, which commenced work in November, 1899, has a temporary home in the Children's Convalescent Institution at West Kirby, in which 20 beds were placed at the disposal of the committee at an annual rental. Mr. Holbrook Gaskell announced his intention of giving a second donation of £1000, whilst Mr. Andrew Gibson promised £500 towards the purchase of the new site. These donations are in addition to those already announced in THE LANCET.

*The Heath Essay of the University of Durham.*

The Heath Scholarship of the value of £200 has been

awarded to Dr. Nathan Raw, medical superintendent of the Mill-road Infirmary, Liverpool, and Major J. R. Dodd, R.A.M.C. The Heath Essay, which was founded by the late Professor Heath, is awarded every two years to graduates of the University of Durham. The subject of the essay for this year was "The Urinary Tract, its Injuries and Surgical Diseases, their Pathology, Diagnosis, and Treatment." Dr. Raw has also recently been elected a Fellow of the Royal Society of Edinburgh for his valuable contributions on the subject of tuberculosis with which his name has become identified in Liverpool. It is an interesting fact that the Heath Scholarship was awarded four years ago to Mr. G. P. Newbolt of Liverpool.

*Death of Mr. Nicholas Smith Glazebrook.*

Mr. N. S. Glazebrook, M.R.C.S., L.S.A., died at his residence, Hayman's-green, West Derby, on July 14th, in his eighty-eighth year. The deceased was at one time one of the best-known practitioners in the suburbs of Liverpool. He was closely associated with the public life of Liverpool in many of its phases, and for many years was a member of the West Derby Local Board. The deceased's eldest son is the Director of the National Physical Laboratories and was for some time the principal of University College, Liverpool—Mr. Richard Tetley Glazebrook, M.A., F.R.S. The interment took place on July 17th, at the parish church, Knotty Ash, amidst universal demonstrations of public respect.

July 17th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Edinburgh University Court.*

AT a meeting of the Edinburgh University Court held on July 16th it was intimated that the Court's Ordinance No. 1 (Separation of the Teaching of Medical Jurisprudence or Forensic Medicine and Public Health in the University of Edinburgh) had been approved by Her Majesty in Council and that therefore the ordinance would come into force as from Oct. 1st next. Various grants were made from the Earl of Moray's endowment for purposes of original research, the recipients being Professor E. A. Schäfer, Dr. Alfred C. Sandstein, Dr. H. E. Gibbs, Dr. John S. Flett, Dr. J. Wilson Dougal, Dr. Evan H. Fraser, and Dr. Sutherland Simpson. Recognition was again granted to the Edinburgh Medical College for Women for the ensuing year.

*Farewell Banquet to Sir William T. Gairdner.*

On the occasion of Sir William T. Gairdner leaving Glasgow to reside in Edinburgh a considerable number of his medical and other friends entertained him to a banquet in the Windsor Hotel. In replying to the toast of the "Guest of the evening" in a pleasing and excellent speech Sir William Gairdner remarked that he had lived for 38 years before he was professor and 38 years after he had been appointed to a chair in Glasgow University, and that the two things he had ever asked for in life were his wife and his professorship. All the rest had come to him in spite of himself.

*Health of Aberdeen.*

Last week there were 38 cases of whooping-cough and 33 of measles reported to the medical officer of health, there being an increase in the number of cases of measles.

*Thomson Medical Bursaries, Aberdeen University.*

In consequence of the fall in the rate of interest the Senatus has been compelled to resolve that in future there shall under this foundation be three bursaries of £22 each, three of £20 each, and three of £18 each instead of six of £24 10*s.* each and three of £20 each, as hitherto.

July 17th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Belfast Workhouse.*

THE Belfast Board of Guardians have in committee drawn up a report in reply to the scathing letter of the Local Government Board, which is a piece of ingenious special pleading. They admit that there has been a technical breach of the regulations, but they say that the irregular expenditure was upon necessary works; they are convinced that the best value was obtained for every penny, and that a large proportion of the outlay was incurred in connexion with the infirmary in carrying out repairs recommended by the Local Government Board, and of such a nature that they had to be carried out piecemeal and were unsuitable for contract. To break rules and then offer as an excuse that such irregularities are "technical" will not satisfy the Local Government Board. The guardians, had they been alive to their duties, ought surely to have been aware of such irregularities and in future the Belfast public will hold them responsible if they do not exercise a proper supervision over the official management of the institution. A discussion which took place on June 26th in reference to the salary of the new master does not tend to secure the confidence of the public. It was recommended in a report that this should be £250 per annum, and an amendment to make the sum £200 was only lost by the casting vote of the chairman. The proposed salary is much too low. Where can a man thoroughly versed in local government acts and in Poor-law procedure and who will manage the largest workhouse in the three kingdoms with over 3000 inmates be procured at this sum? A master of such an institution—a small town, in fact—whom every official and inmate would respect cannot be secured at such a paltry salary. This "penny-wise-and-pound-foolish" policy will only tend to incompetency and further mismanagement.

*The Royal Victoria Hospital, Belfast.*

From a report of the Working-men's Committee read at their annual visit to the Throne Convalescent Hospital on June 30th it appears that for the 16 months ending Dec. 31st, 1899, the sum of £3429 8*s.* 8*d.* was subscribed by the working-classes, this being the largest amount received from this source since the Working-men's Committee was formed 13 years ago. During the past 16 months 34,320 extern and 3255 intern patients have been treated at the Royal Victoria Hospital. The report concluded with the special thanks of the working-classes of the city to the medical and surgical staff of the hospital (as well as to the nurses) for the very efficient and gratuitous services rendered to the patients under their care.

*Bangor District Nursing Society.*

The annual meeting of this society was held under the chairmanship of the Marquis of Dufferin and Ava on June 26th. The report stated that the district nurse had attended 450 cases and had paid over 11,000 visits. There was a balance in the hands of the treasurer of £10 4*s.* 1*d.* An interesting speech was delivered by Lord Dufferin, to whom, as well as Lady Dufferin, the success of the society is largely due.

*The Epidemic of Typhoid Fever in Belfast.*

At a meeting of the Belfast City Council on July 2nd an animated discussion took place in reference to the outbreak of typhoid fever. Dr. H. Whitaker, medical officer of health of the city, reported that between May 20th and June 16th, 1900, 227 cases of typhoid had been notified and there had been 37 deaths. In the corresponding period of last year 152 cases of typhoid were reported with only 18 deaths. The discussion resolved itself far too much into a question as to whether it was the water or the sewage which was at fault in the outbreak, and as to the relative responsibilities of the city council and of the water commissioners. Very strong statements were made by some of the members of the city council as to the insanitary state of the streets, while equally incriminating remarks were made as to the water. By this line of discussion, however, no progress is made, and the Lord Mayor, who is a very practical man of business, said that if the water was bad the city council could bring the matter under the notice of the Local Government Board which could order an inquiry, and, he added, the Stoneyford water "had been subjected to the examination of the best analysts, and while they had not declared that it was a first-class water they found that it was a safe, healthy, and sound water." Finally, at the suggestion of the Lord Mayor, it was arranged that the Improvement and Public Health Committee should be instructed to consider the question of the health of the city, with the view of seeing what better provision could be made to improve it, and to report at an early date. The city surveyor has prepared an elaborate scheme for the bacterial treatment of the main drainage sewage which is at present emptied into the

Belfast Lough and which causes so much annoyance to the inhabitants living on each side of that estuary. To carry this plan out the Local Government Board will have to approve the works and to sanction the borrowing of £80,000 for their execution. It was decided, after a long discussion, to refer the matter to the council in committee and to employ a specialist to report on it.

A joint committee, formed of members of the Public Health Committee and Improvement Committee of Belfast who were appointed to consider the question of the health of the city and how it could be improved, with special reference to typhoid fever, has instructed the executive sanitary officer and the city surveyor to prepare reports on this important matter. The former recommends (1) that the sewers and drains be more efficiently cleansed, ventilated, and flushed; (2) that old courts, alleys, and back passages, and drains connected therewith, be flushed out; (3) that sewer atmosphere generated in the main drains be prevented from rising to the main levels of the city; (4) that the milk-supply of the city be more effectively controlled; (5) that the sale of shell-fish from Belfast Lough be prohibited within the city; (6) that a sufficient number of officers be provided for drain-testing (it is impossible for two officers, as at present, to do this duty for 71,000 houses); (7) that the domestic scavenging of Belfast be improved; and (8) that pollution of streams in the city be prevented, as was recommended in a report on Nov. 9th. These precautions, it is thought, will keep down the normal rate of typhoid fever (the endemic disease), but the executive sanitary officer reports that there will be no protection against epidemics of the disease until the Water Commissioners carry out the powers which they obtained from Parliament last year, when, in referring to their catchment, the chief engineer of that trust stated that "a condition of things like that on the catchment is a standing menace to the health and life of the people in the town where the water is consumed." The city surveyor agrees with these recommendations of the executive sanitary officer and adds suggestions as to structural improvements in the present sewage system of the city of Belfast. He advises more ventilation in many of the sewers and that arrangements be made that some of the higher parts of the city should not have more than their due share of discharge of sewer-gas as at present. He advises improved modern sewers for the old, leaky, and defective ones, more facilities for flushing sewers and house-drains, the use of the water-pressure test for the drains of all houses built on "filled-in" ground, and that "concreting" and "asphalting" should be required on all doubtful or "filled-in" sites.

*The Illuminating Gas-supply of Dublin.*

The alarm caused many months ago by the letter from Professor J. Emerson Reynolds warning gas consumers of the fact that the amount of the poisonous ingredient carbonic oxide had been much increased in the town gas has not been allayed by any definite statement from the Alliance Company. At the last meeting of the Dublin Sanitary Association an important discussion took place on the subject, and it was alleged that the ordinary coal-gas in use in Dublin up to February last, containing about 6 per cent. of carbon monoxide (such as seems to be unavoidable), was now replaced by a mixture of coal and water-gas containing as much as 17·9 per cent., indicating a mixture of about 40 per cent. of water-gas. The Alliance and Dublin Gas Consumers Company has long held a complete monopoly of our gas-lighting as an independent company outside the control of the municipal authorities or corporation. Their delay in affording any definite information available to the public as to the quality of the illuminant which they supply has naturally given much dissatisfaction, for it is alleged that many of their iron conduits for gas are old and so corroded as to allow of considerable leakage. The electric light cannot be widely used owing to the comparative failure of the corporation installation, and but very few private houses in Dublin are now supplied with it. There seems, moreover, but a poor prospect of their obtaining it for a long period, the corporation having quite recently succeeded in having the Bill of a private electric light company who proposed to supply it thrown out in the House of Commons. The citizens have much to complain of in this regard. They practically cannot get the modern and clean electric illuminant and they are forced to depend upon a gas mixture the precise nature of which is concealed. The price of this gas has recently been lowered to 3*s.* 4*d.* per 1000 feet, but even this figure does not compare favourably with the expense of gas in other towns.

*Coroner for Ballymoney District.*

At a meeting of the Antrim County Council held on July 10th Mr. J. C. Woodside of Ballycastle was appointed coroner for the Ballymoney district in the room of the late Dr. Carnac.

*The Water-supply of Belfast.*

For some time a good deal of discussion has been raised in Belfast in reference to our water-supply, especially as some people believe the present catchment areas may be in part, owing to their contamination, the cause of the present outbreak of typhoid fever, and this has been brought home still more to the public by the fact that the officer of health of the city has publicly advised that all water used for domestic purposes should be boiled. We are promised a new supply from the Mourne mountains, but even in reference to it some curious statements have been made; and hence, to clear up all doubts, an interviewer of one of the city papers has put the whole matter before the chairman of the Works Committee of the Water Board, and as a result a great deal of authentic information has been placed in the hands of the people of Belfast. The reason why the Water Commissioners have built the conduit first and have left the storage reservoirs to be constructed afterwards is that by taking them separately they will save expense, and also because by taking the water direct from the Kilkeel river and the Annalong river, through the help of weirs, a supply of water can be obtained in a short time. The present catchment areas—Woodburn and Stoneyford, which have cost £700,000—give 11,500,000 gallons per diem all the year round, and just now 13,000,000 gallons are the daily consumption. The present wet summer saved matters this year, but another summer cannot be faced without an additional supply, and if the city of Belfast increases as it has done since 1894 in seven years hence 16,000,000 or 17,000,000 gallons per diem will be needed. It is hoped that between April and July from 2,000,000 to 3,000,000 gallons per day may be obtained from these rivers at Kilkeel, and during the other eight months 10,000,000 gallons per diem. Whether there will be such a supply or whether the water will be quite clear of sediment or peat remains to be seen. It is hoped that before the end of this year this supply may be ready for use and for the present this water will be given to residents on the County Down side of the river Lagan which divides Belfast. By this means the strain on the Stoneyford and Woodburn supplies will be relieved, and then when the bridge is built to carry the mains across the river Lagan those living on the County Antrim side will also be supplied. The commissioners also propose to build simultaneously the new reservoirs in the Silent Valley at Kilkeel and the iron bridge across the river Lagan in Belfast; but in the meantime, by means of the conduit and the tapping of the Kilkeel and Annalong rivers, the city will be kept safe as far as a necessary supply of water is concerned. The reservoir dam at Kilkeel will cost a large sum—it may be a quarter of a million—as there is a deposit of sand and drift of unknown depth which will have to be cleared out. When this dam is finished 10,000,000 gallons per diem will come from Kilkeel and it is intended by this supply to add to, but not to supersede, the existing supplies from Woodburn and Stoneyford. When the whole new scheme is finished it will cost about £1,000,000, or about £100,000 per 1,000,000 gallons per day for 10,000,000 gallons of water.

*New Medical Magistrate.*

Dr. Henry O'Neill, surgeon to the Royal Hospital, Belfast, and a city councillor, has been made J.P. of the county of the city of Belfast.

July 17th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Cerebellar Abscess.*

THIS condition, which is by no means common, was the subject of an important communication made to the Academy of Medicine by Professor Dieulafoy at a recent meeting. In his opinion cerebellar abscess is always consequent upon an otitis. Whether the otitis be acute or chronic and whether there be discharge or not matters little; once the cavity of the tympanum is infected the

organisms can exalt their virulence under most favourable conditions in the closed cavities of the antrum and the mastoid cells. From there they propagate themselves in different directions. The intra-cranial lesions consecutive to the various forms of otitis are many in number, such as cerebro-spinal meningitis, pachy-meningitis, phlebitis and thrombosis of the sinuses, cerebral and cerebellar abscesses. As a rule cerebellar abscess gives rise to the cerebellar group of symptoms, namely, occipital headache, ictus, loss of equilibrium, vertigo, staggering, vomiting, nystagmus, cervical contraction, optic neuritis, muscular asthenia, and a torpid condition bordering upon coma. These symptoms make up the cerebellar *syndrome* in its purity and are found whether the lesion be in the right lobe, in the left lobe, or in the vermiform process. If two other symptoms—namely, facial paralysis and paralysis of the external ocular motor nerve—are present the lesion can be assigned to one in either lobe. This was the case in a patient under the care of Professor Dieulafoy. The cerebellar *syndrome* closely resembles the auricular or labyrinthine *syndrome*. The following are points of difference for the purposes of diagnosis. Labyrinthine headache is not so severe or so persistent nor is it in the same place as that due to cerebellar mischief, while the drowsiness and torpor which increase from day to day in cerebellar mischief do not appear in labyrinthine disease. Abscess of the cerebellum has to be distinguished from abscess of the cerebrum situated in the temporo-sphenoidal or occipital lobes. In a cerebral abscess the motor disturbances, whether paralysis, contraction, or spasm, are situated on the opposite side to the lesion or the otitis, and disturbances of speech and hemianopsia are two important symptoms. Tumours of the cerebellum, such as glioma, gliosarcoma, tubercle, and parasitic tumours, also give rise to the cerebellar *syndrome*, but it is not so well marked in the case of a tumour, owing to the e giving rise to other symptoms attributable to their growth. Cerebellar syphilis stands upon a different plane both as regards diagnosis and treatment. Surgical intervention at the right time is the only treatment for cerebellar abscess. At the same meeting M. Laborde showed various animals, such as cats and guinea-pigs, in which different intra-cerebellar lesions had been brought about. In these the cerebellar group of symptoms was complete—cervical contraction, muscular weakness, and rotation in the long axis towards the same side as the lesion. Experimental reproduction of pathological lesions was thus complete.

*Medical Tours to French Mineral Springs.*

Last year Dr. Carron of La Carrière organised under the patronage of M. Brouardel, M. Landouzy, M. Cornil, M. Fournier, and M. Huchard a system of tours intended to combine instruction and pleasure and the object of which was to enable medical men and medical students, both French and foreign, to make themselves practically acquainted with the French health resorts. Last year the tour consisted of visits to the places in the central districts and Auvergne. This year the tour will be to the Pyrenees and the south-west districts. Luchon is the starting-place and thence the party will visit Capverne, Bagnères de Bigorre, Argelès, Barèges, Saint Sauveur, Cauterets, Pau, Saint Christau, Eaux Bonnes, Eaux Chaudes, Salies de Béarn, Biarritz, Cambo, the Sanatorium at Hendaye, and Dax and Arcachon. As was the case last year Professor Landouzy, the scientific head of the expedition, will deliver lectures upon the properties of, and the therapeutic indications for, the use of the different places.

*Completion of the Faculty of Medicine.*

In view of the forthcoming International Congress of Medicine and also the Congress of the Medical Press most of the medical institutions in Paris are getting ready for the reception of visitors. I have already described the hospital alongside of the Pasteur Institute. The new Academy of Medicine will, unfortunately, not be ready in time but the Faculty of Medicine is quite ready. The works have been going on for 23 years and were at a standstill for a space of six years. Work was recommenced in 1898 with the large wing in the Rue Hautefeuille. This is now just open and includes a magnificent vestibule opening upon the interior quadrangle of the faculty and ending at the great staircase of the library. On the first floor are large examination rooms, waiting rooms, and a spacious common room for the different professors. This is ornamented with busts of distinguished physicians and surgeons, while the walls are hung with the magnificent Gobelins tapestry which was presented to the old school of surgery, which occupied the present site of the Faculty of Medicine, by Louis XV. While the works were in progress the architect came across the foundation-stone of the old school of surgery, still bearing its bronze plate upon which were inscribed the details of the former ceremony of inauguration. Only recently, too, a subsidence in the courtyard revealed the cellars of the old Franciscan convent which formerly existed on this site, and the chapel of which, used as an examination room, was only pulled down during the progress of the present works.

*Sanitary Instructions for the Troops going to China.*

The Minister of Marine has issued an excellent circular for the troops who, in increasing numbers, are daily starting for China. The circular deals with the climatology of Northern China and gives details as to water, food, and other points of vital importance for the well-being of the troops. Next week I shall lay some further details before your readers.

*The Culture of Gonococci in Gelatinised Blood.*

Everybody knows the difficulties which are experienced in cultivating gonococci in the usual culture mediums employed in the laboratory. A great step in advance has been taken and was described in a report which M. F. Bezançon and M. F. Griffon recently laid before the Society of Biology. These observers found that blood mixed with gelose made an admirable medium for the culture of gonococci. Tubes of this material infected with gonorrheal pus showed at the end of about 24 hours in a temperature of 37° C. numerous round flat transparent colonies of variable dimensions. If these colonies were examined at the end of the first 24 hours the microbes appeared under their characteristic forms and not as misshapen granules as is the case with other methods of culture. The cocci survive for a considerable time and in one tube the observers were able to preserve the organisms alive for a period of six months. This peculiarity, together with the advantages resulting from the early growths of the colonies and the marked morphological characteristics of the microbes which appear by this method, make it an eminently practical one for the culture of this organism.

July 17th.

# Obituary.

## BENJAMIN HOWARD, M.A., M.D. NEW YORK, M.R.C.S. ENG., F.R.C.S. EDIN.

THE death is announced, in his sixty-fourth year, of Dr. Benjamin Howard of New York. He had been ill for some months, suffering from nephritis. He died at the country house of his old friend, Dr. Andrew H. Smith of Elberon, New Jersey, where he spent the last few weeks of his life. Dr. Howard was born in 1836 and studied medicine in Paris, Vienna, and Berlin, as well as in New York. In 1858 he graduated as M.D. of the University of New York, serving through the Civil War as an assistant surgeon. He afterwards held the posts of professor of surgery and surgeon to Long Island College Hospital, New York State, and of lecturer upon operative surgery in the Medical Department of the University of New York. He was also professor of surgery in the University of Vermont. A frequent visitor to this country, he became a Member of the Royal College of Surgeons of England in 1877 and a year or two later a Fellow of the Royal College of Surgeons of Edinburgh. He was deeply interested in the study of methods for artificial respiration, and having come to the conclusion that there were faults both of omission and commission in the respective methods of Marshall Hall and Silvester he devised a method of his own called the "direct" method, which he demonstrated at a clinical lecture at King's College Hospital on July 7th, 1877.[1]

A supplement to this lecture, giving the method in more detail, was published by Dr. Howard in THE LANCET of May 25th, 1878, p. 748. The outcome of these demonstrations was that a committee of the Royal Medical and Chirurgical Society was appointed to report upon the methods adopted by the Royal Humane Society (which, to put it shortly, combined Marshall Hall's method of removing fluid with Silvester's method of respiration) and that recommended by Dr. Howard. The result of the preliminary report was to show that no one method could be said to be the best, but that a combination of the three would probably be superior to

[1] THE LANCET, August 11th, 1877, p. 194.

any one.[2] Another subject in which Dr. Howard took an abiding interest was that of ambulances for large towns. His attention had been first drawn to the matter when on the battlefield of Antietam he had suddenly become responsible for the ambulance service there. London, as he said in his paper upon the subject read before the Medical Society of London, is a *quasi*-battlefield[3] and needs an efficient ambulance service. 18 years have elapsed and we are but little better off than before in the way of horse ambulances, although owing to Dr. Howard's efforts a meeting was held to consider the matter, when the general hospitals were represented and the Duke of Cambridge was in the chair. Still, at page 119 of our issue of July 14th will be found an annotation stating that a scheme formulated by Mr. S. Osborn, F.R.C.S., for the establishment of an ambulance system for London is before the London County Council. Therefore it seems probable that coincidently with Dr. Howard's death steps are at length being taken to bring about the fulfilment of the object he so ardently desired.

## GEORGE SAMUEL GREGORY, M.R.C.S., L.S.A.

MR. BRUDENELL CARTER writes: "The death, on July 9th, in his eighty-eighth year, of Mr. George Samuel Gregory removes from the ranks of the medical profession not only one of its oldest, but also one of its most accomplished members. Mr. Gregory obtained his qualifications in 1835, and, after a period of practice in London, and some time spent in travelling, much of it in Spain during the Carlist war, settled at Pewsey, in Wiltshire, but removed in 1848 to Stroud in Gloucestershire, where he conducted an extensive practice for 35 years and was also certifying surgeon under the Factories Act for the district. He retired in October, 1883, and resided first in Bloomsbury and for the last three years in Kensington, able until the 13th of June to take almost daily walking exercise, and to enjoy the society of his friends. On the 14th of June he suffered from a cerebral hæmorrhage, producing left-sided paralysis, and he passed quietly away on the 9th of July. Mr. Gregory was not only a remarkably skilful and successful practitioner, but was also a man of very unusual attainments in various ways. A fair mathematician, a clever mechanic, a good scholar, and an accomplished linguist, he was deeply read in many directions, especially in dogmatic theology and in the mental philosophy of the earlier portion of the century. He was a learned art critic, an amateur architect of no mean ability, had designed most of the furniture of his pretty house at Stroud, and was a most successful gardener, especially in the cultivation of the cyclamen. A keen observer of men and manners, with a retentive memory and a great command of picturesque and telling language, he was an animated and brilliant talker, and was frequently visited at Stroud by men who had attained celebrity in different walks of life. Wilkie Collins wrote much of "The Woman in White" while staying with Mr. Gregory, and gathered the names of some of the characters from tombstones in neighbouring churchyards. Another of his intimate friends was the late Mr. St. John Mivart, F.R.S., and another was Mr. Frank Dicksee, R.A., some of whose early work still adorns the house at Stroud. Although a bachelor, and not altogether free from a tendency to criticise the foibles of the opposite sex, he was conspicuous for his old-fashioned and graceful courtesy to women, and was a very general favourite with them. There could perhaps be no better evidence of his sterling and loveable character than the fact that among those who stood around his grave there were three men of different callings who were united to him by ties of close and uninterrupted friendship which had existed, in the case of the writer for 38, in another for 48, and in the third for 60 years."

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced :—Dr. James T. Whittaker, Professor of Medicine in the Ohio Medical College, Cincinnati.—Dr. A. Schetelig of Nervi, whose researches on archæological subjects are well known. He was in early life assistant to Professor Esmarch of Kiel and during the Franco-German war was in charge of the Hamburg Red Cross Ambulance at Metz.

[2] THE LANCET, Nov. 1st, 1879, p. 659.
[3] THE LANCET, Feb. 4th, 1882, p. 172.

# Medical News.

UNIVERSITY OF OXFORD.—The following candidates at examinations for the degree of Bachelor of Medicine, Trinity Term, were successful in the subjects indicated :—

FIRST EXAMINATION.

1. *Organic Chemistry.*—George Basil Doyne Adams, Christ Church; Owen Alfred Rowland Berkeley-Hill, Trinity College; George Henry Crosfield and Turner Henderson, University College; Reginald Jamison, Trinity College; William Herbert Lee, Balliol College; Cuthbert Taunton Raikes, Trinity College; and Charles Joseph Singer, Magdalen College.
2. *Materia Medica and Pharmacy.*—Launcelot Toke Burra, University College; Edward Burstal, Trinity College; Henry Roy Dean, New College; Gerald Edward Friend, Keble College; Reginald Charles Jewesbury, Christ Church; James Edmund Rutherfurd, Corpus Christi College; Arnold Shelley, Keble College; Charles Joseph Singer, Magdalen College; and Cyril Aubrey Smallhorn, Wadham College.
3. *Human Anatomy and Human Physiology.*—Philip Edward Homer Adams, Exeter College; Edward Frederic Beaumont,* Wadham College; John Martin Bickerton, Merton College; Walter Brinsmead Billinghurst, St. John's College; William Edward Blackall,* non-collegiate; William Leigh Maule Day, Exeter College; Harold Frankish, Worcester College; Arthur Frederick Hertz, Magdalen College; Dudley William Carmalt Jones, Corpus Christi College; Henry Wynyard Kaye, Magdalen College; Harold Lionel Laws, Wadham College; Richard Ernest Howell Leach, Merton College; Douglas Reginald Pike,* Jesus College; James Edmund Rutherfurd, Corpus Christi College; and Richard Harvey Sankey, Christ Church.

* Offer Human Anatomy only, being exempt from examination in Human Physiology.

SECOND EXAMINATION.

1. *Pathology.*—Arthur Edwin Boycott, B.A., Oriel College; Lawrence Henry Carr-Birkbeck, B.A., Trinity College; William Morris Gladstone Glanville, B.A., Christ Church; Edmund Henderson Hunt, B.A., Balliol College; Alfred Edward Arthur Loosely, B.A., Pembroke College; Reginald Cuthbert Mullins, B.A., Keble College; Lionel James Picton, B.A., Merton College; and Charles Ernest West, B.A., Balliol College.
2. *Remaining Subjects.*—Edmund Delafosse Bond, B.A., and Reginald Cuthbert Mullins, B.A., Keble College; John Davy Rolleston, B.A., Brasenose College; Albert Edward Thomas, B.A., Merton College; and Richard Warren, B.A., New College.

UNIVERSITY OF GLASGOW.—The following candidates have passed the final examinations for the following degrees :—

*M.B., C.M.*—John Lunn, Alexander M'Donald Nevin, John James Robertson, James Wallace Shane (old regulations), and Archibald Stevenson.

*M.B., Ch.B.*—Matthew Aikman, M.A., George Arthur, Gavin Barbour, Thomas Thomson Bathgate, James Freeborn Bennett,‡ Alexander Binning, Alexander Birch, Harry Egerton Brown, John Douglas Brownlie, Thomas Carruthers, M.A., Alexander Henderson Cassells, Edward Provan Cathcart,‡ Daisy Annabella Murdoch Clark, B.Sc., John Thomson Clark,‡ Robert Clark, Charles Campbell, Cuthbert, M.A.,† Archibald William Wallace Davidson,‡ Frank Lindsay Dickson, David Curr Douglas, John Pinkerton Duncan, B.Sc.,† Leonard Findlay,*† Alexander Fraser, M.A., Lizzie Thomson Fraser, Gilbert Garrey, David George Somerville Gartshore, William Gibson, Edward Gillespie, William Girvan, Helen Mary Gordon, Charles Aikman Gourlay, M.A.,‡ John Gracie, Charles Herbert Gunson, Archibald Wilson Harrington,‡ Isaac Mackay Huey, Thomas Inglis, Pierce Jones, William Bryce Kerr, James Dickson Laidlaw,* John Francis Lambie, Norman Maclean Leys,‡ James Dunlop Lickley,‡ Mary Forbes Liston, John Lockhart, Alexander Logan, David Longwill, Anderson Gray M'Kendrick,‡ James Mackinnon,‡ George Todd Maclean, M.A., Alfred Robert Maclurkin,‡ Burgess M'Phee,‡ Andrew Mair, Robert MacNab Marshall,‡ Allan Martin, M.A., B.Sc.,‡ James Millar, M.A., Ernest Wardlaw Milne, Alexander Robert Moir, Alexander Munro, William Barr Inglis Pollock, Robert Rennie, John Duncan Richmond, Margaret Mitchell Ritchie, David Russell, James Scott, M.A., Edgar William Sharp, James Shearer, David Ap Simon, Christian Cleland Wood Smith, James Johnston Smith, John Steele Smith, Andrew Stewart, Gertrude Florence Fleetwood Taylor, Robert Taylor, Thomas Bird Tierney, James Cameron Turnbull,† William Dinning Walker, George White, Morgan Watkin Williams, Alexander Wilson,*‡ Thomas Watson Wilson, and Hugh Patrick Wright.‡

* Surgery and Clinical Surgery.
† Practice of Medicine and Clinical Medicine. ‡ Midwifery.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore:* Dr. F. S. Cullen and Dr. W. W. Russell have been appointed Professors of Gynæcology in the Johns Hopkins University.—*Jena:* Dr. Friedrich Schultz has been promoted to an Extraordinary Professorship of Physiological Chemistry.—*Marburg:* Dr. Axenfeld of Rostock has been offered the chair of Ophthalmology.—*Montpellier:* Dr. Bosc has been appointed to the chair of Pathological Anatomy.—*St. Petersburg (Military Medical Academy):* Dr. A. Gerwer has been recognised as *privat-docent* of Neurology and Psychiatry.—*Strasburg:* Dr. Edwin Faust has been recognised as *privat-docent* of Pharmacology.—*Vienna:* Dr. Gustav Braun von Fernwald, Director of the Third Midwifery

and Gynæcological Clinic, a brother of the well-known gynæcologist, Professor Karl Braun, is about to retire, having reached his seventy-first year.

WATER CARRIAGE.—It is not often that attempts are made to go back to the old methods of dealing with excreta, but at a recent meeting of the Manchester City Council an alderman proposed the following motion:—"That in considering the plans of new buildings the Improvement and Buildings Committee be instructed not to insist upon the provision of water-closet accommodation, unless special circumstances render it desirable." His idea was that water should be carefully used until the laying of the second pipe from Thirlmere is completed, which will take three years. It was stated, however, that the effect of the present water-closet system on the water-supply was not appreciable. The motion was rejected.

THE HEATH SCHOLARSHIP.—The Heath Scholarship, value £200, which is awarded every two years by the University of Durham, has this year been awarded to Dr. Nathan Raw of Liverpool, and Major J. R. Dodd, R.A.M.C. The subject of the essay was, "The Urinary Tract, its Injuries and Surgical Diseases, their Pathology, Diagnosis, and Treatment."

THE ROYAL VETERINARY COLLEGE.—The Duke of Cambridge presided at the annual meeting of the Royal Veterinary College, of which he is president, on July 11th. The twenty-fifth annual report showed that during the financial year 1899-1900 59 students had entered the college, as compared with 66 last year. At the examinations held by the Royal College of Veterinary Surgeons in July last 73 per cent. of the students presenting themselves proved successful, while at the December examinations 66 per cent. passed. 70 per cent. of the 226 students of the college who presented themselves for examination during the year passed, while 66 per cent. of the 244 students who presented themselves for the same examination from the other veterinary colleges were successful. During the year 43 students obtained the diploma of the Royal College of Veterinary Surgeons, 32 students succeeded in passing the first professional examination, 43 the second, and 40 the third. In the research department complete or partial post-mortem examinations in 355 cases of disease had been made for members of the Royal Agricultural Society and for veterinary surgeons. The gratuitous supply of mallein to veterinary surgeons in private practice had been continued and the manufacture of tuberculin was begun in the early part of last year with a view of supplying the requirements of qualified members of the veterinary profession. The chairman of the governors, Sir Nigel Kingscote, stated that two investigations were being made at the college, one with regard to the reliability of tuberculin as a test for tuberculosis, towards which the Royal Agricultural Society had made a grant of £400, and the other into the cause of African "horse-sickness," towards which the War Office had given £200. Lord Egerton of Tatton was elected a vice-president in place of the late Duke of Westminster, and Lord Moreton and the Hon. W. F. D. Smith, M.P., were appointed governors.

ST. MARY'S HOSPITAL.—PRIZE AWARDS.—On July 13th Dr. T. Clifford Allbutt, Regius Professor of Physic in the University of Cambridge, distributed the prizes won by the students of St. Mary's Hospital. Dr. W. B. Cheadle presided.—Dr. H. A. Caley (the Dean), who read the report, which referred to the reconstitution of the University of London, said that the medical school had become one of the first schools of the London University. The medical school had upwards of 50 representatives with the Imperial forces in South Africa, and they had to deplore the deaths of Captain R. H. E. G. Holt, R.A.M.C., from wounds, and of Lieutenant G. W. G. Jones, R.A.M.C., from enteric fever, in Ladysmith, as well as of Lieutenant-Colonel A. Baird Douglas, a former student of the school, who was killed while in command of the 4th Battalion Sherwood Foresters at Roodeval. The record of academic distinctions for the year was high, notably at the University of Cambridge. In athletics the students had been remarkably successful. Important advances in the pathological department had been made during the year.—Professor Allbutt in distributing the prizes said that though Ruskin had said that the great achievement of modern education had been to teach people to think wrongly on every conceivable occasion he did not think that this applied to the education of the end of the nineteenth century. Nowadays students were taken through natural phenomena and taught to observe and to think, and the result was seen in the excellent work brought forward at examinations. There had been an extraordinary improvement in teaching and in the accessibility of knowledge, the tendency being to take the student away from the lecture-room into wards and laboratories. The process of verification thus instituted was most useful and was happily gaining ground.—On the motion of Sir W. Broadbent a vote of thanks was accorded to Professor Allbutt, and the usual courtesies to the chairman terminated the proceedings.

THE Victorian Convalescent Home for Surrey Women and the Duchess of Teck Memorial Home of Rest for Working Women were opened by the Duchess of York at Bognor on Monday, July 9th. The buildings are in the Renaissance style of architecture and fitted up according to the most modern improvements of sanitary science. The Victorian Convalescent Home is Surrey's memorial of Her Majesty's long and glorious reign, while the Duchess of Teck Memorial Home of Rest for Working Women is the nation's memorial to the late Princess Mary.

# Parliamentary Intelligence.

## HOUSE OF LORDS.

TUESDAY, JULY 17TH.

*The Question of Death Certification.*

LORD MONKSWELL called the attention of the Government to the report of the Select Committee of the House of Commons on Death Certification and asked whether they proposed to introduce legislation on the lines of the recommendations of the committee.—Lord HARRIS, replying for the Government, said that for some time the subject had engaged the attention of the President of the Local Government Board with a view to legislation. There were, however, a good many difficulties connected with it and Mr. Chaplin was at present having inquiry made by the officers of the department in the hope of overcoming these difficulties. Mr. Chaplin was in hopes that at no distant date he would be able to introduce a Bill on the subject.

## HOUSE OF COMMONS.

THURSDAY, JULY 12TH.

*Anti-typhoid Inoculation.*

MR. BARTLEY asked the Under Secretary of State for War whether his attention had been called to a report from Dr. Conan Doyle on the Langman Hospital, South African Field Force, Bloemfontein, in which he stated that there had been no death from enteric fever up to June 5th from among the inoculated; whether the War Office had yet any official statistics on the results of inoculation; and whether any further efforts were being made to increase the number inoculated in men now going out to South Africa and China.—Mr. WYNDHAM replied: As I have already explained to the House the statistics at present available are not sufficient to enable me to give a reply to the first and second paragraphs of the question. Inoculation is offered to all men embarking from home for a country such as South Africa or China where enteric fever is prevalent, but such inoculation is purely voluntary.

FRIDAY, JULY 13TH.

*Medical Acts Amendment Bill.*

The Bill to strengthen the disciplinary powers of the General Medical Council to give universities and medical corporations power to withdraw their diplomas from practitioners whose names have been removed from the Medical Register because of misconduct, and to provide that fines and penalties recovered under the Medical Acts shall be paid to the treasurer of the General Medical Council, was introduced at this sitting by Sir Richard Jebb and formally read a first time, the order for the second reading being put down for Thursday, July 19th. The Bill is backed by Sir Richard Jebb, Sir William Anson, Mr. J. A. Campbell, Sir Michael Foster, Mr. Lecky, Mr. Talbot, and Sir John Batty Tuke, all of whom are university representatives.

*Oil in Manufactured Tobacco.*

The Chancellor of the Exchequer introduced a Bill to restrict the amount of oil in manufactured tobacco.

*The Employment of Retired Army Medical Officers.*

Mr. MACNEILL asked the Under Secretary of State for War if he could state what was the number of the retired army medical officers who were liable to be recalled to service, and of these gentlemen how many had been recalled to service since the outbreak of hostilities in the Transvaal, and how many were now with the field forces in South Africa or in hospitals at the bases.—Mr. WYNDHAM replied: There are 98 retired army medical officers liable to recall; of these 18 are holding permanent appointments reserved for officers on retired pay. The services of 25 others who volunteered to return to the service have been accepted and they have been employed at home and abroad. None have been recalled by compulsion. Four officers are employed in South Africa and on hospital ships.—Mr. MACNEILL asked: Then out of 98 officers on the retired list only four are employed in South Africa?—Mr. WYNDHAM replied: Yes. The 18 who are holding permanent appointments are officers of high rank and it is thought better to employ in South Africa young civilian doctors who have more recent experience of hospital work.

*Lead and Phosphorus Poisoning.*

These subjects were discussed at this sitting in Committee of Supply on the vote for the Home Office. Sir MATTHEW WHITE RIDLEY, in the course of his reply, said that with regard to lead poisoning in the earthenware manufactories in the Potteries although the improvement had been steady and substantial it had not been all that they could wish. Whether the figures were good or bad the fact remained that lead poisoning in the Potteries was a fearful thing and far more serious than phosphorus poisoning. He was, therefore, prepared to admit, on the part of the Home Office, that the case demanded the most urgent attention, and on their part they should do everything that they possibly could to secure that the industry should be carried on in a manner as little harmful as possible to those engaged in it. They had not been altogether idle in this matter. He admitted to the full that the existing code of rules was not sufficient, but it had done a considerable amount of good. They had been engaged on a new code of rules which would shortly be published and which he hoped would carry out substantially everything recommended by Dr. Oliver and Dr. Thorpe, with the exception that there was no absolute prohibition of the use of raw lead in every case. He had every hope that the rules would be accepted and he was almost confident that they would get them without arbitration, but he should go to arbitration rather than that the present state of things should continue. With reference to the case of the phosphorus special rules, which had already been debated this session, he was very much astonished to find that so many members took the view that the rules had really not been strengthened. There were one or two points in which the rules were weakened contrary to their desire, but he claimed for them in the first instance that they were drawn up in the main to carry out the recommendations of their experts. They were to a certain extent altered, but if those alterations were minutely examined it would be found that they were not really of that importance which some members attached to them. He did not know if he needed to go into them in detail, but to take, for instance, the distinction between the wet and the dry process. He could not say they were in a position to decide that they had the same positive evidence in regard to the injury in the one case as they had in the other. He was not prepared to admit that the rules regarding the matchmaking industry were weak or that they were not a considerable improvement upon the rules passed some years ago. There again he did not see how it was possible to prohibit absolutely the use of this particular kind of phosphorus. As the result of what had been done there had only been one case of necrosis reported in the past six months and the department had, to a large extent, got hold of the disease. The effect of the attention paid by manufacturers to the new process was that one large firm had abandoned altogether the use of dangerous phosphorus; and if it was possible to supply strike-anywhere matches as cheaply without the use of this dangerous stuff the public could do a great deal in encouraging its disuse. With regard to an international arrangement to do away with the use of white and yellow phosphorus, he feared that there was not much hope of it. As to the phosphorus trade, he hoped that those who had criticised the rules would test them by experience. If there were a loophole in them further action could be taken.

MONDAY, JULY 16TH.

*Civil Surgeons in South Africa.*

Mr. MACNEILL asked the Under Secretary of State for War if he could state the number of civil surgeons whose services had been accepted since the outbreak of hostilities in South Africa for the field hospitals and base hospitals, and the number of civil surgeons who were at present employed in these hospitals, and how many army medical officers within two years from their entrance into the Army Medical Service had been sent to the war in South Africa; whether his attention had been drawn to the fact that of 98 army medical officers who were liable to be recalled to service four only were employed in South Africa or in hospital ships, and that although many of them have requested to be sent to the seat of war their offers were refused; whether the authorities at the War Office were aware that the sending of army medical officers without previous experience in campaigns, and the recognition of the services of civil surgeons while the services of retired army medical officers had been rejected, had led to discontent and a feeling that the medical treatment of the troops would be wholly subordinate to purely military considerations; and would he cause inquiries to be made in the matter.—Mr. WYNDHAM replied: The services of 385 civil surgeons have been accepted principally for base hospitals and general duty; of these 363 are now in South Africa. This does not include those locally employed or attached to private hospitals or to the Yeomanry or the Rhodesian Field Force. 117 Royal Army Medical Corps officers under two years' service have been sent out. Of the 98 officers liable to recall, as has been already stated, 18 hold permanent military appointments at home, and very few volunteered for service in South Africa. Nothing is known of any general discontent to which the honourable gentleman refers in his question.

*A Vaccination Case.*

Mr. SINCLAIR asked the Home Secretary whether he was aware that Mr. F. J. Chatting was imprisoned for not paying a fine for non-compliance to an order for vaccination; that the warrant for his arrest was for Pentonville, but that he was taken to West Ham Police-station, then taken to Stratford Police-court, and kept without food from 8 A.M. to 8 P.M. on July 7th; and that on his arrival at Pentonville, instead of being treated as a first-class misdemeanant, his clothes were taken from him, and that he was forced to wear a prison suit, and that he was subjected to other treatment which the Act did not permit; and whether he would take such steps as would prevent a recurrence of such proceedings.—Sir MATTHEW WHITE RIDLEY replied: Chatting was not arrested till about 8.40 P.M. on the 6th. It was then too late to take him to Pentonville, so he was taken to West Ham Police-station and thence on the next morning to the police-court in accordance with the usual practice in order that he might go on to Pentonville by the afternoon van. He had breakfast at the station and might have had lunch at the police-court, but on being twice asked whether he wanted anything replied in the negative. At Pentonville the reception officer made a mistake and treated him like an ordinary prisoner. For this mistake he will be duly dealt with by the Prison Commissioners and it is not one which is likely to recur.—Mr. SINCLAIR: As I understand that no compensation will be paid to Mr. Chatting will some apology be offered to him?—Sir MATTHEW WHITE RIDLEY replied: I have not considered any question of compensation.

*Hospital Provision in Scotland.*

Mr. WEIR asked the Lord Advocate whether the Secretary for Scotland was aware that the medical officer of health for Ross and Cromarty in his report for last year stated that, in a township in the island of Lewis there were 41 cases of typhoid fever in a population of 300 within a period of six months and pointed out that, although an isolation hospital was urgently necessary the local authorities were powerless to provide one owing to the rates for the various parishes throughout the island being already so high; and in view of the insanitary condition of many of the parishes in the island would he consider the expediency of either urging the Treasury to provide the requisite funds for the erection of an isolation hospital or introduce legislation at an early date such as will admit of the Congested Districts Board applying a portion of the funds at its disposal for the erection and maintenance of isolation hospitals where urgently needed in the congested area.—Mr. WEIR further asked the Lord Advocate whether he was aware that the report of the medical officer showed that if the sanitary clauses in the Public Health (Scotland) Act were strictly enforced in the island of Lewis a large number of the inhabitants would be homeless; and could he state what steps he proposed to take in order to place the island on a satisiactory sanitary basis.—The LORD ADVOCATE replied: As to the sanitary condition of the island of Lewis, I must point out that the enforcement of the new provisions of the recent Public Health Act can be undertaken only gradually and with caution, both for the reason adduced by the hon. Member himself and because of the reluctance which he must know exists in the Highlands to removal and to isolated treatment of infectious cases. The Local Government Board are not inactive and I know from official and other channels that progress is being made, and that in some districts the present conditions compare very favourably with those observed not many years ago. I am informed by the Local Government Board that they are at the present moment in communication with more than one local authority in the island districts regarding new hospital accommodation, and plans are in hand for an hospital in the Carloway district. The Secretary for Scotland is not prepared at present to undertake legislation in connexion with the matter.

*The Lunacy Bill Withdrawn.*

The Bill of the Government for the reform of the Lunacy Laws, which had passed through all its stages in the House of Lords, was at this sitting of the House of Commons withdrawn.

TUESDAY, JULY 17TH.

*The South African Commission.*

Mr. BALFOUR announced that Mr. Harrison, general manager of the London and North-Western Railway Company, and Sir David Richmond, ex-Lord Provost of Glasgow, have agreed to serve on this commission in addition to Lord Justice Romer, Dr. Church, and Professor Cunningham.

# Appointments.

***Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.***

BERTHON, ELLEN M. T., M.B. Lond., has been appointed a Locum Tenent by the St. Pancras Board of Guardians.

BRISCOE, WILLIAM THOMAS, A.B., M.D., M.Ch. Dubl., has been re-appointed Medical Officer of the Pewsham District by the Chippenham Board of Guardians.

BUCHANAN, R. J. M., M.D. Vict., M.R.C.P. Lond., has been appointed Honorary Physician to the Liverpool Stanley Hospital, vice C. J. Macalister, retired.

EMANUEL, J. G. M.B., B.S., B.Sc. Lond., has been appointed Pathologist to the General Hospital, Birmingham.

GRIFFITHS, CORNELIUS A., F.R.C.S., has been appointed Honorary Assistant Surgeon to the Cardiff Infirmary, vice W. Sheen.

HAWTHORNE, C. O., M.D., M.R.C.P., has been appointed Physician to the Central London Ophthalmic Hospital, Gray's Inn-road, W.C.

MEACHEN, G. NORMAN, M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Resident Medical Officer to the Tottenham Hospital, N.

NEWINGTON, C. W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Sixth Sanitary District of the Sevenoaks Union, vice C. F. Gregory.

PECK, HERBERT, M.D., D.P.H., has been appointed Medical Officer of Health to the Borough of Chesterfield, vice H. Meredith Richards.

PRANCE, C. H. G., L.R.C.P. Lond, M.R.C.S., has been appointed Medical Officer to the Workhouse and No. 1 Sanitary District, Plympton, and Public Vaccinator.

TROTTER, ALEX., M.D. St. And., L.F.P.S. Glasg., has been appointed House Surgeon to the Perth City and County Royal Infirmary.

WARDALE, J. D., M.B., B.S. Durh., has been appointed Honorary Ophthalmic Surgeon to the Royal Infirmary, Newcastle-upon-Tyne, vice G. E. Williamson, F.R.C.S.

WATTS, ELIZA T., M.B. Lond., has been appointed a Locum Tenent by the St. Pancras Board of Guardians.

WHITE, ANTHONY A. T., M.R.C.S., L.R.C.P., has been appointed by the Egyptian Government Medical Officer to the Directeur Générale des Reservoirs, Assouan District.

WILSON, H. C., L.R.C.P. Irel., L.F.P.S. Glasg., has been appointed Medical Officer for the South Sanitary District of the Poplar Union, vice W. M. Leslie, resigned.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BEDFORD COUNTY HOSPITAL, Bedford.—House Physician for six months. Salary £25 for that period, with board, lodging, and washing.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 yearly for cabhire, with furnished rooms, fire, lights, and attendance.

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, increasing by three equal increments up to £150, with board, lodging, and washing.

BRADFORD ROYAL INFIRMARY.—House Physician for 12 months, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

CARDIFF INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £75 per annum, with board, washing, and apartments.

CARLISLE DISPENSARY (not provident).—House Surgeon. Salary £150 per annum, with apartments (not board).

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Registrar. Annual re-appointment, but tenable for three years. Honorarium 20 guineas per annum.

CHESTER GENERAL INFIRMARY.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with residence and maintenance in the house.

CITY ASYLUM, Gosforth, Newcastle-upon-Tyne.—Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c., and rising £10 per annum up to £150.

CITY OF LEEDS, BECKETT-STREET FEVER HOSPITAL.—Resident Medical Officer. Salary £130 a year, increasing £10 annually to £150, with board, lodging, and washing. Applications to the Medical Superintendent, Manston Hospital, Seacroft, near Leeds.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

CORPORATION OF BIRMINGHAM.—CITY HOSPITAL, Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

GENERAL LYING-IN HOSPITAL, York-road, Lambeth.—House Physician for four months. Salary at the rate of £50 per annum, with board and residence.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, 74, King-street, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

ITALIAN HOSPITAL, Queen-square, Bloomsbury, London, W.C.—House Surgeon. Salary £60 per annum, with board and residence.

JENNER INSTITUTE OF PREVENTIVE MEDICINE, Chelsea-gardens, London.—Assistant Bacteriologist to the Antitoxin Department at Sudbury, Harrow. Salary £200 per annum, with rooms.

LIVERPOOL DISPENSARIES, 34, Moorfields, Liverpool.—Four Assistant Surgeons, unmarried. Salary £100 per annum, with board and apartments.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence in the Infirmary.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer to the Out-patient Department, Hardman-street, Manchester. Honorarium £40 per annum.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Surgeon. Salary £120 per annum, increasing, conditionally, by £10 a year, with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £90 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

ROYAL NATIONAL HOSPITAL AT VENTNOR.—Clinical Assistant. Salary £40, with board and residence. Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL SOUTHERN HOSPITAL, Liverpool.—Resident Locum House Surgeon for one month. Terms 3 guineas weekly.

SALOP INFIRMARY, Shrewsbury.—Assistant House Surgeon for six months. Salary at the rate of £60 per annum, with board and washing.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer for the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

STATE OF SARAWAK, BORNEO.—Medical Officer for this Government, unmarried. Will be required to sign an agreement for three years. Salary $3600 (about £360) per annum, with free unfurnished quarters. Applications to Messrs. the Borneo Company, Sarawak Government Agents, 28, Fenchurch-street, London, E.C.

TEIGNMOUTH HOSPITAL, South Devon.—House Surgeon. Salary £70 a year, with board, lodging, and washing. In lieu of stimulants or mineral waters £6 per annum will be given.

THE Secretary of State for the Home Department gives notice of a vacancy for a Medical Referee under the Workmen's Compensation Act, 1897, for the Leith District of the Sheriffdom of the Lothians and Peebles.

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. An honorarium at the rate of £20 per annum given, with board, residence, and laundry.

TUNBRIDGE WELLS EYE AND EAR HOSPITAL.—House Surgeon. Salary £60 per annum, with board, lodging, and washing.

UNIVERSITY OF GLASGOW.—Chair of Clinical Medicine.

WANDSWORTH AND CLAPHAM UNION.—District Medical Officer for the No. 2 District of the Parish of Battersea. Salary £100 per annum, with certain fees. The successful candidate will be appointed Public Vaccinator for the same District. Applications to the clerk, Union Offices, St. John's-hill, S.W.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST KENT GENERAL HOSPITAL, Maidstone.—Assistant House Surgeon for six months. Honorarium at the rate of £50 per annum, with board and residence.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £130, rising £10 a year to £160, with board, residence, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

GILLETT.—On June 30th, at Brooke, Norfolk, the wife of George Edward Gillett, M.R.C.S., L.R.C.P., of a daughter.

MACKAY.—On July 17th, at Castlegate, Berwick-upon-Tweed, the wife of William Bertie Mackay, M.D., M.R.C.S., of a daughter.

MATHESON.—On July 12th, at 72, Trafalgar-road, Greenwich, the wife of John Matheson, M.A., M.B., C.M., of a daughter.

PEAKE.—On July 14th, at The Limes, Marden, Kent, the wife of W. Harland Peake, M.D., B.S., of a daughter.

QUINBY.—On July 13th, at West View, Formby, Lancs., the wife of Edward M. Quinby, M.R.C.S., L.R.C.P. Lond., of a daughter.

SALISBURY.—On July 11th, at Evering-road, Stoke Newington, the wife of C. R. Salisbury, L.R.C.P, M.R.C.S. of a daughter.

SHAW.—On July 11th, at New Cavendish-street, Cavendish-square, W., the wife of John Shaw, M.D. Lond., M.R.C.P. Lond., of a son.

SINCLAIR.—On July 9th, at Cranbourne, Westerfield-road, Ipswich, the wife of Walter W. Sinclair, M.B., of a daughter.

SMITH.—On July 17th, at 229, High-street, Watford, the wife of G. Francis Smith, M.R.C.S., L.R.C.P. Lond., of a son.

STEAD.—On July 3rd, at Moor Lodge, Hawkhurst, the wife of C. C. Stead, M.B. Camb., L.R.C.P. Lond., of a daughter.

SWAIN.—On July 11th, at Victoria-square, Clifton, Bristol, the wife of James Swain, M.S., M.D. Lond., F.R.C.S., of a son.

## MARRIAGES.

EDEN—BAIN.—On July 18th, at St. Mary Abbots', Kensington, by the vicar, the Rev. Canon Pennefather, assisted by the Rev. G. T. Harvey of Navenby, Thomas Watts Eden, M.D., M.R.C.P., to May, only daughter of Mrs. Bain, and granddaughter of the late Sir James Bath of Glasgow.

GOUGH—LONGSTAFFE.—On July 17th, at SS. Mary and John Church, Oxford, by the vicar, Rev. W. Scott, assisted by the Rev. W. D. Macray, rector of Ducklington, Bernard Bradly, son of Henry Gough, barrister-at-law, of Redhill, to Annie S., second daughter of Mrs. Longstaffe, of Oxford.

HENTSCH—PETERKIN.—On Thursday, the 12th inst., at St. Stephen's, Paddington, by the Rev. W. E. Burkitt, B.A., rector of Buttermere, Wilts, George Frederick Hentsch, L.R.C.P. Lond, M.R.C.S., younger son of the late George Hentsch of Chancery-lane and Barnsbury, to Beatrice M., youngest daughter of William Peterkin of Cl theroe, Lancashire.

WALDO—EXTON.—On the 14th July, at the parish church, Hampstead, by the father of the bride, Frederick Joseph Waldo, M.D., barrister-at-law, to Marion, elder daughter of the Rev. R. B. L. Exton, formerly vicar of Strood, Kent.

## DEATHS.

GLAZEBROOK.—On July 14th, at Haymans-green, West Derby, Liverpool, Nicholas Smith Glazebrook, M.R.C.S., in his 87th year.

HEYCOCK.—On the 9th instant, at Hounslow, Francis Raworth Heycock, M.D., F.R.C.S., second son of the late Rev. C. Heycock, J.P. of Pytchley House, Kettering, aged 58 years.

LAKE.—On July 18th, at Bloemfontein, W. Wellington Lake, Militia Medical Staff, of Topcroft, Guildford, aged 46 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## "SAD DEATH AT MARHAMCHURCH."

UNDER the above title the *Western Morning News* of July 14th prints the followir g story:—

Mr. D. Thompson, county coroner, held an inquest at Marhamchurch on Thursday on Selina Matthews, wife of a farm labourer, who died on Wednesday morning. James Matthews said his wife, 30 years of age, was confined of her fifth child on Monday night. She was attended by an "occasional" nurse, and had no doctor. After her confinement she complained of her head, and he went to Mr. Braund on Tuesday afternoon and got some medicine, but did not ask him to visit her. She took some medicine and afterwards for a while was cheerful, but then became drowsy and never rallied, dying on Wednesday morning. She was very sick. Her sister was with her on Tuesday and the neighbours looked in.—The Foreman (Mr. Greenaway): Is it usual for a medical man to supply medicine to patients without seeing them?—The Coroner: It is not unusual. If medicine only is applied for he would do the best he could without a visit. Of course, if asked to see a patient he would not supply medicine until he had first seen the patient.—Mr. Greenaway thought it unusual and would have liked to have heard whether the effects of the medicine given were such as were expected.—The Coroner offered to adjourn the inquest to procure medical evidence, but the jury thought it not necessary.—Mary Ann Cowling, the occasional nurse, said all went satisfactorily. When deceased complained of her head witness recommended sending for a doctor. She was slightly convulsed just before her death.—Emily Jones, a neighbour, said she saw the deceased daily and did not anticipate any danger. She seemed pretty well on Tuesday night, but still complained of her head. On Wednesday morning she was heavy and drowsy and did not speak. She then considered her condition alarming and asked that a doctor be sent for. One was sent for, but death took place before his arrival.—The jury returned a verdict of "Death from natural causes—failure of the heart's action after convulsions."

We cannot agree with the jury that it was unnecessary to hear medical evidence in this case. In the interests of the medical man the jury should certainly have ascertained (1) what the husband told Mr. Braund that his wife was suffering from and (2) what Mr. Braund felt himself able to prescribe under the circumstances. We agree with the foreman that to give medicine to a patient who is not visited is unusual and we may add that as a rule it is very inadvisable; but we do not say that it was inadvisable in this case because we have no notion what the husband said. The "occasional" nurse who said that "all went satisfactorily," might also have been asked what significance she attached to the word "satisfactorily" and under what circumstances she was in the habit when occasionally nursing of sending for medical assistance.

## "THE EVER-READY ELECTRIC LIGHT."

*To the Editors of* THE LANCET.

SIRS,—We notice in THE LANCET of July 14th (p. 111) a description of the "Ever-Ready" Electric Light which Mr. Dale states is made by him. We should very much like to know if he is the manufacturer as we can supply the identical article which is made in America. We beg to hand you a drawing which you will see is the same in every way.

We are, Sirs, yours faithfully,

London, July 17th, 1900. ARNOLD AND SONS.

*** The drawing sent to us by Messrs. Arnold and Sons is undoubtedly identical with that which we published last week. Mr. Dale will, perhaps, state whether he is the inventor or maker. We certainly supposed one or other to be his position.—ED. L.

## A QUESTION OF LIABILITY.

AN interesting point was raised in a case which came before Judge Stonor on July 10th at Brompton. A surgeon dentist had rendered professional services to one of the students at the hospital to which he was attached. The latter was under age at the time, and had since joined the troops in South Africa, leaving his dentist's account unpaid. The action in question was for the recovery of 16 guineas from the young student's father, who is a medical man. The plaintiff said that had he charged his usual fees the account would have amounted to £36, and that he made the reduction because the young fellow had studied under him at the hospital. The student, it was stated, always said that his father would pay the dentist's fees, and about a year later the account was accordingly sent in to the father. The latter returned the account repudiating liability; and, in the course of correspondence, said that his son appeared to have been under the impression that a surgeon, medical man, or dentist would not as a rule make any charge when attending a medical student, especially when both, as in the present instance, were connected with the same hospital. The father went on to remark that the fees seemed to be rather high, and asked to be favoured with the views of the dentist as to payment by students in such cases. In another letter the father stated that he had consulted certain hospital authorities, and that they had advised him not to pay the account. The plaintiff, in his evidence, stated that he distinctly told the young fellow that he could not afford to attend the students at the hospital free of charge. His Honour said it was evident that the student had pledged his father's credit, but there was some doubt as to the father's liability. Counsel for the plaintiff maintained that the attendance in question was necessary to the young fellow's health, and that the father was therefore liable. Counsel for the defence contended, on the other hand, that if the son had been living with his father at the time that the services were rendered, there might have been something in the submission of the plaintiff's counsel, but as a matter of fact the son was in lodgings at the time. The learned counsel went on to contend that as the plaintiff had not the defendant's authority to render the services, the latter was not liable. His honour said he was not convinced that the attendances in question came under the heading of necessities within the meaning of the Acts relating to the point. There was evidence that the student pledged his father's credit, but there was no evidence that the father gave him authority to do so. This being so, his Honour found that the defendant was not liable. The case was struck out, no costs being allowed.

## WANTED—A HOME.

*To the Editors of* THE LANCET.

SIRS,—Could any of your readers inform me of a medical man residing in a small seaside place or in the country about North Wales or in the north of England or some quiet place over 100 miles from London, who would be willing to receive into his house a lady subject to periodical fits of depression and who at these times is inclined to excessive indulgence in stimulants. The lady is between 50 and 60 years of age, is troubled six or seven times a year, and is willing to be advised and guided to overcome her weakness. She would pay £1 15s. per week for her board, &c., as a paying guest, and the undersigned can testify that the lady is an intelligent and pleasant person.

I am, Sirs, yours faithfully,

Earl's Court-road, W., July 16th, 1900. J. ROSS MACMAHON.

## SANITARY PROPAGANDA.

*To the Editors of* THE LANCET.

SIRS,—In many rural districts the sanitary authorities issue printed leaflets for distribution amongst cottagers. These leaflets contain instructions how to act when notification diseases appear. Can you kindly inform me where such can be obtained and which is the best form for scarlet fever and diphtheria?—I am, Sirs, yours faithfully,

July 16th, 1900. HEMERA.

*** The medical officer of health composes his own propaganda to the people under his sanitary charge. (See the paragraph entitled "Precautions against Diarrhœa.") If any medical officer of health has designed a leaflet that he thinks would be useful to our correspondent and will send it to us we will forward it to its destination and say at the same time who is its author.—ED. L.

## PRECAUTIONS AGAINST DIARRHŒA.

DR. E. M. SMITH, medical officer of health of York, has issued a leaflet for distribution which contains valuable advice to the community under his charge. He is dealing with the prevention of summer diarrhœa, and the burden of his words is that cleanliness, and cleanliness alone, will prevent this disease that is so often fatal in epidemic form to children. "Keep your house clean in every part,' he says. "Keep yourselves and your children and their clothing clean. Keep your sinks, gulleys, and closets clean with brush or mop and hot water and soda. Flush them frequently with cold water. Keep the windows of your living rooms and bedrooms open by day and your bedroom windows open by night. Don't block up your bedroom chimneys and fire-places. Keep all feeding utensils constantly clean and sweet with boiling water. Don't let dust, or manure, or kitchen refuse (vegetable refuse, potato parings, tea leaves, bits of meat or fish, &c.) collect in the house or yard. Burn the kitchen refuse on the fire. Never allow choked drains, or choked closets, or offensive accumulations near your house to remain unattended to. Report them and also report badly-paved yards. Don't keep poultry in your yard. Use disinfectants such as chloride of lime freely to drains, gulleys, closets, and privies. Ask for some at the sanitary office. Don't allow your house to be damp without reporting it to the sanitary office." We trust the people of York will take this excellent advice.

## "WHO IS MR. W. HARTLEY AUSTIN"?

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of July 14th, p. 147, you are good enough to refer to a circular issued by myself to medical men on the subject of investments at compound interest and simple interest. You evidently desire to know the *bona fides* of the investment referred to, and as it is a subject which has created much interest amongst medical men (many of them investing largely) I have pleasure in replying to your queries. I do not wish to obtain a gratuitous advertisement, but I trust you will give my reply the same prominence that you have given your criticism. The company referred to as guaranteeing the investment is the Sun Life Insurance Company of Canada. The assets of this office (invested under stringent supervision of the Canadian Government) at the

present moment exceed £2,000,000 sterling. It reports annually to the Board of Trade in this country and it has appointed three trustees to look after the interests of policy-holders and investors here—viz., the Marquis of Dufferin and Ava, the Earl of Albemarle, and Sir Charles Dalrymple, Bart., M.P., who holds £100,000 in trust as special security. The company has been established since 1865 and its bankers are the Bank of Scotland. Regarding the investment itself, as stated in my circular the principal attraction is that under it any healthy man can set aside a moderate sum each year (just so much as he can afford to save against retirement later on in life, with the drop in income which retirement always entails to a medical man), accumulate same at compound interest, drawing the result either in cash or as a yearly addition to the income. You are, of course, perfectly right when you say that most medical men know that an investment at compound interest increases more rapidly than one at simple interest, but how many men realise the extraordinary difference there is between compound and simple interest. Here is an example (very far-fetched, of course, but it serves to illustrate my meaning) which appeared in one of your contemporaries a short time since. If a penny had been invested in the year 1 at 5 per cent. compound interest it would now amount to no less than 56,535,727 quintillions of pounds sterling. The same penny invested at 5 per cent. simple interest would not amount to eight shillings! I do not suggest that any medical man can set aside a penny and accumulate it for 1900 years, but I do suggest, and that most emphatically, that he cannot do better than set aside £10, £20, £50, £100 a year, or any sum he can spare, and let it accumulate for, say, 20 years under the security I have named. Should the investor unfortunately die, even a day after payment of his first deposit, all further cost immediately ceases, and the company guarantees to hand over either a large sum in cash, or to pay a yearly income to wife, child, or other dependant. Thanking you for the very fair criticism you made on my circular, and holding all further information at your disposal,

I am, Sirs, yours faithfully,
W. HARTLEY AUSTIN.

93, Queen Victoria-street, E.C., July 14th, 1900.

## THE WAY TO SPREAD DISEASE.

IN spite of legal enactments, of health lectures, and the advance of general intelligence of which we are so proud, instances of ignorance or recklessness still occur. An inspector of nuisances saw a child playing in the street at Weaste on July 1st "in the peeling stage of scarlet fever." On the next day he went to the house and found the child, instead of being isolated, playing in a living room. On the 5th the child was seen again in the street. A fine of £1 and costs was imposed. The stipendiary spoke seriously to the parents, and we may presume that they were impressed thereby.

## REMEDIES FOR SEA-SICKNESS.

*To the Editors of* THE LANCET.

SIRS,—I have been appointed surgeon to a steamer of one of the Atlantic lines and whilst a good sailor myself I have no doubt I shall find many of my fellow voyagers suffering from sea-sickness. Could any of your sea-faring readers kindly tell me what remedies he has found most effectual in the treatment of this distressing complaint? Any suggestions will be esteemed a favour by

Yours faithfully,
July 13th, 1900. SHIP'S SURGEON.

## "A GOOD BICYLE SADDLE."

A CORRESPONDENT, "B," asks a question in THE LANCET of July 7th, page 70, to which, in ignorance of the querist's physique, it is impossible to give a satisfactory answer. A cyclist requires to be measured for his saddle just as much as for the garments he wears when riding. What suits a man with lean thighs will be found extremely uncomfortable by the possessor of rounded limbs, and *vice versâ*. Again, there are riders who cannot bear pressure on the perineum, whereas others—with, for instance, a tendency to procidentia recti—must have support in that region. There are many so-called anatomical saddles in the market, but no particular pattern can be recommended for all and sundry. If "B" were to write to any well-known firm of saddle-makers describing his physical conformation and disabilities (if any) he would no doubt succeed in obtaining what he wants. There are so many firms turning out equally good articles that it would be invidious to make a selection. "B" can, however, find names and addresses in the advertising columns of cycling journals. With regard to position it is unquestionably true that by perching himself upon an inclined plane and bending his body forwards at an acute angle in the ungraceful manner that is adopted by the numerous class of cyclists known as "scorchers" the rider is able to exert a slightly greater amount of propelling force than he can when sitting upright, but there are happily objections to the stooping posture which more than counterbalance this advantage. In the first place persistence in the hunchbacked attitude not only conduces to the production of high shoulders, narrow chests, and rounded backs, but it also, to a great extent, deprives the devotee of speed of the ability to enjoy delightful scenery and objects of interest. His neck curved downwards and his head protruding in tortoise guise, he can see nothing but the space immediately in front of his rapidly revolving wheel. At a rate which cannot but be startling to even experienced pedestrians he silently flashes past, the embodiment of anything except the poetry of motion, and as he momentarily glances upwards the expression in his straining eyes is precisely the same as that which their misfortune has imposed upon the victims of dorsal caries. A dignified cyclist holding his head heavenwards like a man and not earthwards like a beast is a spectacle to admire; but although he may succeed in covering more miles within the hour the grovelling scorcher is nevertheless an execrable object who, for no good or useful purpose is content to sacrifice everything that is æsthetic on the altar of celerity.

## RADIOGRAPHIC EQUIPMENT.

MESSRS. ISENTHAL & Co., of 85, Mortimer-street, Cavendish-square, W., have submitted to us their new list of radiographic apparatus. We note that their "x" ray laboratory is connected with both the continuous and alternating current so that the working of every instrument in the list can be shown by those who contemplate studying the subject in its practical aspects. The list contains a description of the "tubes" which according to experience are best for all practical purposes. In addition all the photographic and other accessories which make an equipment complete are given.

*Senex.*—The purchase value is estimated on the gross annual receipts and a three years' average would be a fair way of estimating it. The purchaser is sure to require an inspection of the books and so will be able to judge how far the last three years' work represents an increase or decrease in the practice. With the introduction that "Senex" proposes to give, it would be usual to ask for the half share a sum equivalent to the gross average annual receipts of the practice. We think our correspondent would be well advised to employ an agent.

*W. H.*—The notice would certainly seem to be designed to steal a march upon a professional brother. Where is the said notice "put up" and how much publicity has it received? Our correspondent will understand that if we comment on this matter the fact that we obtained our information from him may be obvious whether his name is mentioned or not.

*Delta.*—We cannot say whether the General Medical Council would, on a complaint being made, construe such an action as infamous in a professional respect, but thus to assist an unqualified person to practise medicine by writing the legal certificates for him is, in our opinion, covering and a very grave breach of professional manners.

*Rivers.*—We understand that it is the author's intention to treat the subject as a whole and it would be as well to make the illustrations generally illustrative and not to confine them to views of one sanatorium.

*Jupiter* will find the information he requires in THE LANCET of Sept. 9th, p. 724, and of Sept. 23rd, 1899, p. 851. The lists are no longer exhaustive.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, July 19th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. in Shade. | Min. Temp | Wet Bulb. | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| July 13 | 29·79 | N. | ... | 123 | 86 | 63 | 65 | 69 | Hazy |
| ,, 14 | 29·93 | S.W. | ... | 121 | 72 | 61 | 62 | 65 | Cloudy |
| ,, 15 | 29·95 | S.W. | ... | 123 | 84 | 58 | 63 | 70 | Fine |
| ,, 16 | 30·05 | S.E. | ... | 136 | 95 | 64 | 68 | 72 | Overcast |
| ,, 17 | 30·22 | N. | ... | 123 | 86 | 65 | 65 | 70 | Hazy |
| ,, 18 | 30·20 | S.W. | ... | 123 | 89 | 64 | 65 | 70 | Fine |
| ,, 19 | 30·03 | S.E. | ... | 124 | 92 | 65 | 65 | 70 | Hazy |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (23rd).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (24th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (25th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

**THURSDAY (26th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY (27th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

**SATURDAY (28th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (23rd).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Consultation. (Skin.)

LONDON THROAT HOSPITAL (204, Gt. Portland-street, W.).—4.30 P.M. Dr. Cathcart: Miscellaneous Cases. (Post-graduate Course.)

WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. Bidwell: The Preparation of Patients before and the Treatment after Operation.

**TUESDAY (24th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. E. Squire: Consultation. (Medical.)

**WEDNESDAY (25th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Hillier: Consultation. (Medical.)

**THURSDAY (26th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. J. Hutchinson: Consultation. (Surgical.)

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND (11, Chandos-street, Cavendish-square, W.).—9 A.M. Educational Committee. 9.30 A.M. Parliamentary Committee. 10 A.M. Council Meeting. 11 A.M. Fifty-ninth Annual Meeting. Election of Officers and Committee. 2 P.M. Dr. F. Beach: Presidential Address.—Dr. W. W. Westcott: Inebriety, its Causes, Results, and Treatment.—Dr. F. Daunt will read a paper. 8 P.M. Annual Dinner at the Whitehall Rooms, Hôtel Métropole.

**FRIDAY (27th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. M. Gunn: Consultation. (Eye.)

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND (11, Chandos street, Cavendish-square, W.).—10 A.M. Microscopic Demonstrations, Preparations, Specimens, and Lantern Slides:—Dr. W. F. Robertson, Dr. J. S. Bolton, and Dr. G. A. Watson. Dr. H. H. Newington will exhibit and describe the Plans of the New East Sussex Asylum. Dr. D. Orr and Dr. T. P. Cowen: A Contribution to the Morbid Anatomy of General Paralysis of the Insane (microscopic and lantern demonstration).—Dr. J. O. W. Barratt: Two Cases of Lepto-meningitis (microscopic and lantern demonstration).—Dr. J. Turner: Some Alterations produced by Disease in the Giant Nerve-cells of the Cortex (microscopic and lantern demonstrations).—Dr. L. C. Bruce and Dr. H. de M. Alexander: Observations upon the various Physical Changes in the Acute and Subacute Stages of Melancholia. 2 P.M. Mr. C. F. Beadles: The Insane Jew.—Dr. W. C. Sullivan: Alcoholic Homicide.—Dr. D. Blair: Non-diabetic Glycosuria.—Dr. A. F. Shoyer: An Angeioma of Broca's Convolution in a Lunatic.—Dr. F. W. Edridge-Green: Psycho-physical Perception.

## EDITORIAL NOTICES.

**It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.**

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## BRITISH MEDICAL ASSOCIATION MEETING AT IPSWICH.

DURING the forthcoming meeting of the British Medical Association at Ipswich the representatives of THE LANCET can be consulted at the Great White Horse Hotel, Ipswich, with regard to our reports of papers and proceedings.

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

### TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied, Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

**During the week marked copies of the following newspapers have been received:** *Derbyshire Courier, Newcastle Daily Chronicle, Manchester Guardian, East Anglian Daily Times, Blackburn Telegraph, Gainsborough Leader, Staffordshire Sentinel, Norfolk Weekly Standard, Dover Standard, Midland Free Press, Liverpool Daily Post, Middlesborough Morning Mail, Daily Mail, South Wales News, Bristol Mercury, Bradford Observer, Market Harborough Mail, West Morning News, Yorkshire Post, Citizen, Scotsman, Builder, Times of India, Arbroath Herald, Daily Express, Architect, Leeds Mercury, Local Government Chronicle, Hertfordshire Mercury, Daily Express (Dublin), Mining Journal, Surrey Advertiser, Irish Times, Kentish Mercury, Liverpool Journal of Commerce, Local Government Journal, City Press, Reading Mercury, Ripley Advertiser, Warwick Times, Evesham Standard, Clapham Observer, Thirsk News, Stafford Advertiser, Wigan Observer, Woolwich Herald, Wiltshire Telegraph, Grimsby News, Cheshire Observer, Gloucester Standard, Pioneer Mail, Ilkeston Advertiser, &c., &c.*

## Communications, Letters, &c., have been received from—

A.—Mr. A. Anderson Sunderland; Messrs. Arnold and Sons, Lond.; Messrs. Allen and Hanburys, Lond; Aston Hall, Sutton Coldfield, Secretary of; A. D. H. Mone, Alcan, Paris: *Australian Trading World*, Editor of.

B.—Dr. J. A. Black, Winchester; Bedford County Hospital, Secretary of; Mr. W. Bowles, Lond.; Mr. D. Berry, Cambridge; Mr. H. Butterfield, Northampton; Mr. E. Baker, Birmingham; Messrs. Burroughs Wellcome and Co., Lond.; B. L. T.; T. B. Browne, Ltd., Lond.; Mr. C. Birchall, Liverpool; Mr. A. Boisselier, Lond; Mr. T. W. Bevan, Nantyglo; Mr. J. R. de C. Boscowan, Truro; Mrs. L. H. Burrows, Godalming; Mr. E. Backett Lond.; Mr. E. Blake, Lond.; Dr. W. J. Beveridge, Caylloma.

C.—Dr. J. M. Clarke, Clifton; Messrs. A. H. Cox and Co., Brighton; Cornwall County Asylum, Bodmin, Secretary of; Messrs. Crossley and Co., Lond.; City Asylum, Gosforth, Clerk of; Mr. H. Collier, Llandudno; Professor Corfield, Lond.; Mr. H. Y. Childs, Portland; Dr. Contremoulins, Paris; Dr. E. Cantley, Lond.; Mr. P. Carmody, Trinidad.

D.—Mr. J. A. W. Dollar, Lond.; Messrs. H. Dawson and Co., Lond; Dr. C. Dukes, Rugby; Mr. R. Dane, Sandown, Isle of Wight; Durham County Asylum, Winterton, Secretary of.

E.—Dr. James Edmunds, Lond.; Messrs. Eason and Son, Dublin.

F.—Mr. A. Floyer, Moore; Dr. W. H. Fawcett, Wimborne; Messrs. Findlater, Mackie and Co., Brighton; Mr. R. Foskett, Lond.

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H.—Dr. F. W. Hewitt, Loud.; Dr. H. Handford, Nottingham; Mr. J. W. Haward Lond.; Dr. W. Harland, Port Talbot.

I.—Messrs Isenthal and Co., Lond.; *Independent* Office, Sheffield; Ingham Infirmary, South Shields, Secretary of.

J.—Mr. E. Jones, St. Columb; Dr. J. Johnstone, Bolton; Jenner Institute of Preventive Medicine, Lond., Secretary of; Dr. T. Johnstone, Ilkley; J. F. H.

K.—Dr. L. Kidd, Lond.; Kreochyle Co., Lond.

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# A Clinical Lecture

ON

# PANCREATITIS, WITH ESPECIAL REFERENCE TO CHRONIC PANCREATITIS,

## ITS SIMULATION OF CANCER OF THE PANCREAS AND ITS TREATMENT BY OPERATION, WITH ILLUSTRATIVE CASES.

*Delivered at the Medical Graduates' College and Polyclinic on July 18th, 1900,*

BY A. W. MAYO ROBSON, F.R.C.S. ENG.,

SENIOR SURGEON TO THE GENERAL INFIRMARY AT LEEDS; EMERITUS PROFESSOR OF SURGERY IN THE YORKSHIRE COLLEGE OF THE VICTORIA UNIVERSITY; AND HONORARY PRESIDENT OF THE SURGICAL SECTION OF THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS.

GENTLEMEN,—To be asked to lecture before an audience of post-graduates must always be considered an honour, but when the request comes from such a distinguished body as the council of the Medical Graduates' College and Polyclinic one can only feel that to the honour is added the pleasure of compliance. Fortunately, too, I had a subject which I wanted an opportunity of bringing forward, and I hope that I may have the benefit of your criticisms and the advantage of help from your experience in a class of cases which has hitherto, scarcely, if at all, been generally recognised, but which I believe to be not very uncommon.

Before proceeding to consider the subject of chronic pancreatitis specially I think that it will tend to the elucidation of my subject if I make a few remarks on pancreatitis generally.

### PANCREATITIS.

When it is borne in mind that the pancreas is a racemose gland with its various channels opening into a duct which opens along with the common bile-duct into the second part of the duodenum—a channel usually containing septic organisms, and frequently liable to catarrh and other disorders—it is not surprising that inflammation should frequently occur in it. Just as in the liver we may have acute and chronic catarrh of the ducts, infective and suppurative cholangitis, and inflammation of the inter-lobular tissue ending in cirrhosis, so in inflammation of the pancreas we may have any one or more of those affections, though as yet we have not learnt to recognise acute or chronic catarrh of the pancreatic ducts apart from jaundice, or infective and suppurative inflammation of the ducts apart from abscess of the pancreas itself. As our means of diagnosis become more perfect I venture to predict that these affections will be more frequently recognised and awarded their proper place in medicine.

I have seen cases of discomfort with some swelling at the epigastrium associated with dyspepsia and ague-like attacks but without jaundice, or with only very slight jaundice, which I thought might be explained on the hypothesis of infective inflammation of the pancreatic duct, the cases having cleared up under general treatment. I have also seen the same symptoms associated with more pain, irregular fever, more marked swelling and tenderness over the pancreas and discharge of pus by the bowel from time to time, but without any collection sufficiently large to form a distinct abscess. In a case of this kind seen lately the question of operation was raised, but in the absence of distinct abscess of the pancreas it was not pressed and the patient is recovering. I think that this may have been an affection of the pancreas analogous to suppurative cholangitis.

*Causes.*—The essential and immediate cause of the various forms of pancreatitis is bacterial infection, this having been positively proved in a number of cases both clinically in the human subject and experimentally in the lower animals, but as in inflammatory affections of the liver and bile-ducts we look for extrinsic causes, so in pancreatic diseases we find biliary and pancreatic lithiasis, injury, gastro-duodenal catarrh, ulcer and cancer of the stomach, pylorus, or duodenum, and zymotic diseases such as typhoid fever and influenza, to be determining factors, though in some cases pancreatitis has come on suddenly in persons in robust health and the determining cause has been beyond recognition. Though the infection may arise from the blood as in pyæmia, or by direct extension from the neighbouring tissues as in ulcer of the stomach, yet the most usual channel is through the duct, as in the cases related below arising from gall-stones in the common duct, and from gastro-duodenal catarrh.

*Symptoms.*—It seems to me more convenient to consider pancreatitis clinically under the headings of (1) acute, (2) sub-acute, and (3) chronic, which does not interfere with the pathological classification of acute pancreatitis into hæmorrhagic, suppurative, and gangrenous. The symptoms of pancreatitis are very variable and differ in the separate forms. It is a disease without pathognomonic signs and a correct diagnosis is usually only arrived at by a careful study of the history, mode of onset, and combination of symptoms.

### 1.—ACUTE PANCREATITIS.

This is usually ushered in by a sudden pain in the superior abdominal region, accompanied with faintness or collapse and followed sooner or later by vomiting. It is almost constantly accompanied by constipation, so that it is quite usual for these cases to be mistaken for intestinal obstruction at first. The obstruction, however, is not absolute, flatus passes, and a large enema may secure an evacuation; if the patient survive for several days diarrhœa may supervene. The pain may be so severe as to produce syncope or collapse, and though the pain does not quite pass away it has a tendency to be paroxysmal and to be increased by movement; it is associated with well-marked tenderness just above the umbilicus or between it and the ensiform cartilage. The pain is soon followed by distension in the superior abdominal region which may become general and usually does so in the later stages, and by vomiting, first of food then of bile. The vomiting may be severe and each seizure may aggravate the pain, but at times vomiting may not be a prominent symptom. Slight icterus from associated catarrh of the bile-ducts is usually present and deepens the longer the patient survives. The aspect is anxious and the face is pinched, resembling the facies of peritonitis, which in fact may be present. The pulse, which is rapid and small, is a better guide than the temperature, which may be normal, subnormal, irregular, or high. Delirium comes on in the later stages. The distension, pain, and tenderness prevent an exact examination of the pancreas, which would otherwise be found enlarged. Death usually supervenes from the second to the fifth day from collapse, though in the less acute cases life may be more prolonged. Acute infective pancreatitis thus takes on the form of acute peritonitis starting in the superior abdominal region. If life be prolonged the case comes under the category of sub-acute pancreatitis, and in that case the onset is usually less grave, though often equally sudden.

### 2.—SUB-ACUTE PANCREATITIS.

This may have a sudden onset with acute pain and vomiting associated with constipation, but the collapse is not so marked and may even be absent; the upper abdominal region does not become so rapidly swollen, and vomiting is less severe and less prolonged. At other times the onset is more gradual, though the symptoms may be similar. Tenderness over the pancreas is well marked and on account of the tympanites being less than in the acute form it may be possible to feel the swollen gland, especially under an anæsthetic. Constipation gives place to diarrhœa, and pus or blood may be noticed in the stools which have a very fœtid odour. The pulse will be less rapid and less thready than in the acute form, and the temperature is more irregular. I have seen the temperature reaching 104° and 105°F., and yet the pulse to vary between 90 and 110. The morning temperature may be normal and the evening temperature high for several days or even weeks. Rigors may occur and may be repeated from time to time. The pain occurs in paroxysms, but there is also a constant dull pain at the epigastrium. The patient may lose the more urgent symptoms and appear to be really improving, but the loss of flesh and feebleness continue and relapses usually occur, leaving the patient each time more and more feeble until death supervenes from asthenia. Albuminuria is pretty constant, but glycosuria is rarely present and lipuria is an uncommon symptom.

If an abscess develop the pus may form a tumour projecting in the superior abdominal region and forming a tender swelling behind the stomach, or perhaps coming to

the surface above or below that viscus; or it may burrow into either loin forming a perirenal abscess, or passing under the diaphragm, it may form a subphrenic abscess. Occasionally the pus may follow the psoas muscle and form a subperitoneal abscess in the iliac region or even passing over the brim of the pelvis it may collect in the left broad ligament. I have seen these several terminations in cases either under my own care or under the care of colleagues and I have operated four times for abscess of the pancreas. Sometimes the abscess bursts into the stomach and is vomited, or into the bowel and is voided per anum, after which diarrhœa may continue and pus may be seen from time to time as any fresh collection forms and bursts. I have seen both of these methods of evacuation of the pus. With the evacuation of the abscess relief occurs for a time and the temperature improves, but relapses usually occur and a mild form of septicæmia persists with a hectic temperature. Death is the usual termination, but recovery may occur after a tedious and prolonged illness, as in the case now related.

CASE 1.—On March 17th, 1900, I was asked by Dr. J. Glen of Middlesbrough, to see a female patient, aged 26 years, when I obtained the following history. The patient was first attended the last week of December, 1899. Her symptoms then indicated a chronic form of dyspepsia with recurrent attacks of diarrhœa, the latter associated with indurated fæces. No relief from treatment resulted. The main symptoms at this time were general tympanitic condition of abdomen with tenderness over the sigmoid flexure, no acceleration of pulse, and no rise of temperature. About the second week in January, 1900, the diarrhœa still persisting, a good deal of fresh blood was present with each evacuation—these giving one the idea of dysentery. Then retching and vomiting set in, but this condition was probably set up by the free exhibition of powder of ipecacuanha. This condition continued more or less for upwards of a fortnight when improvement set in. The tympanites disappeared, the tenderness of the left groin became less, there was less sickness, and a desire for food returned. The diarrhœa abated, there being only one or two evacuations in the 24 hours, the motions being formed. The improvement continued till the second week in February. The patient at this time having gained flesh, was daily gaining strength, and was able to sit up in her dressing-gown for a time each day. A relapse took place, accompanied with much pain in the epigastric region, constant sickness, return of diarrhœa and blood in the stools, and rapid emaciation, and quick pulse and rise of temperature. This condition persisted in spite of all treatment. There had never been blood in the vomited matter except once, when there was a slight streak as if it might have come from the pharynx during the act of severe retching. Since the relapse there has developed a dull area with tenderness over the pancreas, but the degree of tenderness varies from day to day. At one time there was retention of urine, afterwards incontinence; no albumin or sugar was present. Hæmorrhage was very profuse, the blood being gruel-like and mixed with stools which were very offensive. Dr. Glen showed me the report of the Clinical Research Association of an examination of the fæces which contained some blood and pus but no cells suggestive of growth and no tubercle bacilli. When I saw her the patient was looking very ill and emaciated, with feeble, quick pulse; there was tenderness in the superior abdominal region with rigid recti, but not along the course of the colon either on the right or the left side. Examination under an anæsthetic revealed a swelling in the situation of the pancreas, but no fluctuation could be made out. As there was resonance in front of it, it was clearly behind the stomach, and from its position it was above the colon. Before the anæsthetic the patient said there was very great tenderness on pressure over the swelling in the epigastrium. The rectal examination was negative, except that there was ballooning. I made a diagnosis of suppurative pancreatitis, the abscess having discharged into the bowel. I advised five grains of salol, two grains of quinine, and half a grain of opium, to be given thrice daily, the patient to be watched with a view to the testing of her temperature, pulse, &c. Plasmon and somatose dissolved in broth, tea, &c., were ordered as the patient could not take milk. The question of operation was raised and dismissed to be further considered in about a week or 10 days, as she was at the time too feeble to bear even an exploratory incision. From this time improvement steadily occurred and when I saw her again in a fortnight she was picking up distinctly, though there was still well-marked tenderness over the pancreas. In June she had gained nearly a stone and a half in weight, looked much better, and could take her food well; there was however, still a little rigidity of the recti and some tenderness, though no distinct tumour of the pancreas. The diarrhœa had disappeared and there was neither pus nor blood in the motions.

### 3.—CHRONIC PANCREATITIS.

Chronic pancreatitis, at first hypertrophic but later cirrhotic, is usually considered to be a very rare disease, but experience would lead me to believe it to be a much more common affection than the acute or sub-acute forms, and I think that some cases put down as malignant disease of the head of the pancreas and terminating fatally may be cases of chronic interstitial pancreatitis. My reason for this belief is shown in the cases related below, selected out of 17 cases on which I have operated. My experience has resulted from my having operated on a large number of cases of jaundice depending on obstruction to the common bile-duct; the obstructive jaundice, wasting, paroxysmal attacks of pain and ague-like seizures having given rise to the suspicion of gall-stones, and the absence of relief by medical treatment having rendered surgical treatment necessary. My first case of this nature was a revelation to me, as the patient was extremely ill before the operation which was, in fact, undertaken too late; and as there was the opportunity of a post-mortem examination the absence of malignant disease or of other cause than the chronic pancreatitis and associated jaundice to account for the death was directly proved.

This form of pancreatitis is quite distinct from the acute or sub-acute form, though I think it is probable that some of the latter cases end in chronic interstitial pancreatitis. It probably usually arises by extension of the inflammation from a chronic catarrh of the pancreatic duct extending from a gastro-duodenal catarrh, though it is frequently associated with biliary or pancreatic lithiasis, or with gastric, pyloric, or duodenal ulcer. Its course varies. The onset may be quite gradual and painless, or may be ushered in by a severe pain at the epigastrium followed by jaundice resembling a gall-stone attack and associated with nausea and vomiting, and perhaps followed by a feeling of chilliness or even a rigor. The pain, however, is not over the gall-bladder and does not pass round the right side to the subscapular region, but is central and passes backwards to the midscapular region or round the left side, thus resembling stomach rather than gall-bladder pain. The tender spot is usually an inch above the umbilicus in the middle line and not over the gall-bladder as in cholelithiasis. When once jaundice has come on it tends to deepen with each attack until it becomes continuous and chronic. The paroxysms of pain may be repeated more or less frequently or there may be no paroxysmal pain, merely a dull ache deeply seated, burning and boring in character. A swelling of the pancreas may sometimes be made out, but as the recti are rigid because of the pain and tenderness in the epigastrium, it can usually only be discovered under anæsthesia.

Loss of flesh and strength are well-marked symptoms in all cases. Vomiting may in some cases be absent, but there are usually a want of appetite and flatulent dyspepsia, and always a sense of fulness and weight at the epigastrium for some time after food. Jaundice is not necessarily present at first, though it is usually present at some stage of the disease and is often well marked, but, as was pointed out some years ago by Dr. Walker of Peterborough, the stools are white even when the pancreatic fluid alone is absent from the intestine. Diarrhœa is often present and the stools are offensive and may be fatty. Albuminuria is common and glycosuria may occur, but the latter is probably only present in cases where the whole gland is affected. Fever may be absent, but in some cases the temperature runs a hectic course, always rising in the evening and falling in the morning. This is especially the case where ague-like paroxysms occur. These varieties probably depend on the character of the infection in the pancreatic and bile-ducts and also on the amount of obstruction present. Where jaundice is present the pulse may be abnormally slow, and even when the temperature is raised the pulse-rate is not much elevated, though the character of the pulse may be poor. In the later stages, especially if the disease be associated with jaundice, hæmorrhages from the nose and the bowel, vomiting of blood and petechiæ in the skin show marked blood degeneration and death ensues from increasing weakness.

In the more chronic cases, especially when there is contraction of the head of the pancreas, there will be found a tumour formed by the distended gall-bladder, just as there is in cancer of the head of the pancreas, for which disease chronic interstitial pancreatitis is then apt to be mistaken and a hopeless prognosis given. In such cases the gall-bladder will be found to be distended with mucus, the bile which first filled it having become gradually absorbed, the backward pressure having prevented fresh bile from entering the ducts. This may occur so gradually as to be painless and then the gall-bladder is free from tenderness, which is seldom the case when the distension is due to gall-stones.

*Diagnosis.*—The diagnosis of chronic interstitial pancreatitis has to be made from gall-stones in the common duct, cancer of the head of the pancreas, cancer of the liver and bile-ducts, and chronic catarrh of the bile-ducts. From gall-stones the diagnosis is of no great importance, since the two diseases are often associated and the treatment is the same; nevertheless, it may be possible to make a diagnosis of gall-stones by the sequence of long antecedent history of spasms without jaundice, then by a severe attack of pain followed by jaundice, and after a time by recurring pains with increase of the icterus associated with ague-like attacks. The absence of tumour is more common in gall-stones than in chronic pancreatitis, though in the latter the gall-bladder may be found contracted at times. Although in pancreatitis there is usually less pain, at times the paroxysmal attacks may be equally as severe as in gall-stone seizures. The tenderness in the latter case, however, will be over the gall-bladder, and in the former at the middle line where the swollen gland can sometimes be felt, especially if the examination is made under anæsthesia; moreover, the radiating pain in gall-stones is towards the right and in pancreatitis towards the left or to the mid-scapular region. In cancer of the head of the pancreas the onset is usually gradual and painless, and the disease generally occurs later in life, usually after 40 years of age. It is preceded by general failure of health, and when the jaundice supervenes it becomes absolute and unvarying and is nearly always associated with a tumour of the gall-bladder, which generally attains a large size and shows no tenderness on manipulation. The liver enlarges from the biliary stasis, but there are no nodules to be felt. In some cases of cancer of the head of the pancreas a hard nodular tumour may be found on the inner side of the distended gall-bladder. Extremely rapid loss of weight and strength with increasing anæmia, but without ague-like seizures, is very characteristic, and it is common for there to be an absence of fever with a slow feeble pulse and later ascites with œdema of the lower limbs. Cancer of the common bile-duct is rare, but when present may resemble, and is usually associated with, gall-stones. In cancer of the liver, the irregular enlargement, the nodular feel, the rapid deterioration of health, the less intense jaundice, and the absence of fever and paroxysmal pains will usually enable a diagnosis to be made. Chronic catarrh of the bile-ducts is usually associated with an absence of symptoms, except jaundice and some loss of flesh. The entire absence of pain and fever with the relief by treatment usually give rise to little difficulty in establishing a diagnosis. In many cases a diagnosis will only be made by an exploratory operation, then the enlargement of the pancreas can be readily felt, or if the tumour be small the head of the pancreas may be found to be hard and perhaps nodular like scirrhus. If ascites be present the tumour will probably be malignant. The lymphatic glands in the lesser omentum may be enlarged in both cancer and chronic pancreatitis, but in the latter they will be discrete and soft, in the former hard and perhaps infiltrating. Adhesions are usually associated with chronic pancreatitis, but are generally absent in cancer.

*Pathological appearances.*—Whenever there is obstruction of the common bile-duct by gall-stones, with associated infective cholangitis, the pancreatic duct may be subjected to backward pressure and to the same infective dangers as the liver; hence the association of infective and suppurative inflammation of the pancreatic duct is quite common. If this irritative process is kept up for some time the substance of the pancreas participates in the inflammatory process and an interstitial pancreatitis results. There may be uniform swelling of the gland or only of certain lobules. Effusion into the inter-lobular and into the peri-glandular cellular tissues is associated with proliferation and detachment of the epithelium lining the acini and the tubes, and there is a crowding together of the cells, with an accumulation of inflammatory fluid containing round cells and blood corpuscles in and around the affected parts of the gland, leading to tension. This simple pancreatitis is known by examining the parts of the pancreas less severely affected when death has occurred from abscess or other disease affecting a limited portion of the gland, and I have also seen it in cases of common bile-duct obstruction where the pancreatitis only proved a secondary and not the fatal disease. In the greater number, if not in all cases of obstruction of the common duct where the obstruction is close to the duodenum the pancreatic duct participates in the infective process which usually follows, and when death occurs it will be found that pus can usually be squeezed from the duct of Wirsung; this has been observed independently by Dr. A. R. Ferguson of Glasgow. If resolution takes place complete recovery may occur or the interstitial effusion may organise and lead to irregular contraction of the tissues and possibly to cirrhosis or chronic interstitial pancreatitis that may either end in diabetes if the whole gland be affected or may lead to pressure on, or distortion of, the common bile-duct and so to chronic jaundice, thus simulating cancer of the head of the pancreas. If, on the other hand, the inflammation be too acute for resolution to occur it may pass on to suppuration which may be general or localised. In all cases of chronic pancreatitis on which I have operated I have found numerous and firm adhesions around the duodenum, pylorus, and hepatic flexure of the colon, all of which have been adherent to the liver and gall-bladder, and on several occasions occlusion of the foramen of Winslow has been found. Where there has not been associated cholelithiasis, the gall-bladder will usually be found distended, and if the obstruction of the common duct be complete it may be very large and filled with mucus. The lymphatic glands usually participate in the inflammatory process and may suppurate. If the patient survive there may be abscesses in the liver, pressure on, or thrombosis of, the splenic vein, enlargement of the spleen, pressure on, or thrombosis of, the portal vein with ascites, or even obstruction to the flow of blood through the vena cava and œdema of the legs.

*Prognosis.*—The disease may last for months or even years, and it is not improbable that some of the cases of jaundice persisting for several years and called chronic catarrh of the bile-ducts may be of this nature. If glycosuria supervene it makes the outlook more grave. Increasing weakness and the supervention of hæmorrhagic tendencies usually show the near approach of a fatal termination. Under surgical treatment the prognosis is very favourable, as out of 17 cases on which I have operated 16 have recovered, and in nearly every case complete restoration of health has occurred.

### TREATMENT OF PANCREATITIS.

In acute infective pancreatitis treatment practically resolves itself into that of peritonitis commencing in the superior abdominal region. The pain at the outset is so acute as to necessitate the administration of morphia, and the collapse will probably demand stimulants, which on account of the associated vomiting may have to be given by enema. In the early stages the symptoms are so indefinite that the indications for surgical treatment are not clear enough to warrant operation, and until the collapse has passed off no surgical procedure would be justifiable. The simulation of intestinal obstruction will probably lead to efforts to secure an evacuation of the bowels and relief to the distension. In the only case of this kind that I have seen the distension of the upper part of the abdomen was so great and the patient was so obese that any exploration from the front was out of the question, even when the diagnosis was established. A posterior exploration was discussed and would have been made but for the speedy death of the patient. Just as in a perforative or gangrenous appendicitis an early evacuation of the septic matter is necessary to recovery, so in this equally lethal affection an early exploration in the left costo-vertebral angle is demanded, and as it can be performed with very little difficulty I should certainly perform it early in any case I might see in the future, when I should evacuate the septic material and adopt free drainage.

The sub-acute form of pancreatitis is much more amenable to treatment, as the indications are so much more definite and there is more time for careful consideration, and though it has usually only been attacked when an abscess has formed and is manifestly making its way to the surface, yet there is no reason why in some cases surgical treatment should not be adopted at an earlier stage. As in the acute condition, morphia may be required to relieve the

paroxysmal pain and stimulants and food by the rectum to relieve the collapse and support the strength. The distension, if present, may also demand attention and may have to be relieved by lavage of the stomach and turpentine enemata or by the administration of calomel by the mouth. Calomel is also of benefit by acting as an intestinal antiseptic, for which purpose it may be given in small repeated doses or in doses of five grains, followed by a saline aperient. As soon as the constipation is relieved diarrhœa is apt to supervene, when salol and bismuth with small doses of opium may be given. If surgical treatment is decided on, a median incision above the umbilicus will enable the operator to palpate the pancreas and locate any incipient collection of pus, which if practicable should be evacuated by a posterior incision in the left or right costo-vertebral angle, or failing that possibility the collection of pus may be aspirated and the cavity opened and packed with gauze, which may be brought forward through a large rubber drainage-tube which will in the course of from 24 to 48 hours establish a track isolated from the general peritoneal cavity. In one case I was able to do this, but the operation was undertaken at too late a stage to be successful, and though the patient lived two or three days afterwards the evacuation of the pus seemed to make very little difference to the general septic condition previously existing and death occurred from increasing debility. The method adopted had, however, been successful from the point of view of drainage, and the track of the gauze and tube was isolated from the general peritoneal cavity. If a definite abscess form and approach the surface in front or in either loin the treatment will be that of incision and drainage as in the case of any other abdominal abscess. Of four cases on which I have operated two recovered completely, one recovered from the operation but died a few weeks later from debility. The fourth case is the one just referred to. The strength must be maintained by careful feeding and the judicious administration of stimulants. It will be necessary to keep a sharp look-out for further collections of pus and for subphrenic abscess or empyema which on recognition will need treatment.

The course and treatment of chronic interstitial pancreatitis is exemplified in the cases related below. Doubtless, in some of these cases the manipulation of the indurated tumour has detached calculi impacted in the gut, but in others the relief of tension as the result of draining the bile-ducts by cholecystotomy or cholecyst-enterostomy has indirectly drained the pancreatic duct and thus has led to a subsidence of the pancreatitis, then to an opening of the common duct by the relief of the tension, and so to a cure of the patient. The simulation of malignant disease of the head of the pancreas by chronic interstitial pancreatitis would make me hesitate to decline operation in any case of distended gall-bladder where the patient was in a condition to bear it, or even in any case of chronic jaundice without distension of the gall-bladder where the general health was deteriorating, as though it should be recognised that if the disease be really malignant very little good will be done and life may even be shortened or prolonged for a short time, yet if the disease prove to be chronic pancreatitis a real and permanent cure may be brought about. If a calculus be felt imbedded in the head of the pancreas or impacted in the pancreatic duct it may be reached through the second part of the duodenum by laying open the papilla and exploring the duct or by dividing the peritoneum passing between the duodenum and hepatic flexure of the colon and then cutting through the overlying pancreas on the concretion. If the papilla be incised it does not require suture and in the cases in which I have explored the ducts by the duodenal route there has been no hæmorrhage; the anterior duodenal opening requires closing by a mucous and a serous suture. Drainage of the right kidney pouch for from 24 hours to 48 hours is advisable, though not always necessary, and this is best done by a stab wound at the most dependent part.

For attacking the head of the pancreas or the pancreatic duct a vertical incision should be made through the right rectus and not in the middle line. In all cases of deep jaundice I prescribe chloride of calcium in 20-grain doses thrice daily for 24 hours or 48 hours before operation and give it in an enema form for 24 hours afterwards in 60-grain doses thrice daily.

CASE 2. *Chronic pancreatitis; cholecystotomy; cure.*—A man, aged 45 years, was sent to me on Oct. 25th, 1898, by Dr. J. B. Berry of Keighley. The patient was very deeply jaundiced and told me that he had lost a stone in weight since the onset of his illness five weeks before. He gave the history of having had attacks of pain referred to the region of the gall-bladder nine years previously, but they were unaccompanied by jaundice and passed off after prolonged treatment. From that time onward he had been free from attacks of pain up to the onset of the present illness five weeks before, when he was suddenly seized with severe pain at the pit of the stomach and became jaundiced. The pain had recurred daily and had been so severe as to necessitate his taking morphia. Dr. Berry noticed a swelling in the region of the gall-bladder a fortnight after the onset of his illness, and there was all along well-marked tenderness at the epigastrium with gradually increasing enlargement of the liver. The patient's general health rapidly failed and the loss of flesh was well marked. When I saw him he looked pinched and ill, he was very deeply jaundiced, and the urine was loaded with lithates but contained neither albumin nor sugar. There were well-marked tenderness at the epigastrium and a smooth tumour, which was not very tender, in the gall-bladder region; the liver was enlarged and the edge was smooth and could easily be felt an inch below the costal margin. A diagnosis of gall-stones in the common duct was made, and the patient was admitted into the Leeds General Infirmary. The operation was performed on Sept. 27th, 1898. On opening the abdomen numerous adhesions between the gall-bladder and liver and the pylorus, colon, omentum, and duodenum were found. The gall-bladder was slightly distended, but no gall-stones were felt either in it or in the cystic or common duct. There was, however, a hard nodular swelling of the head of the pancreas which at the time was thought to be malignant. In order to give relief the adhesions were detached and the gall-bladder was drained by cholecystotomy. On Oct. 28th I wrote to Dr. Berry telling him that I feared that the disease of the pancreas might be malignant but that there was a possibility of its being a chronic pancreatitis. On Nov. 5th I wrote a letter to this effect: "I am pleased to be able to tell you that your patient has improved very much and the jaundice has nearly disappeared. I hope, therefore, that the tumour of the head of the pancreas may have been inflammatory and not malignant. At the time of operation it occurred to me that it was not quite hard enough for a malignant tumour, but under the circumstances I felt it my duty to give you my suspicions." From that time onwards recovery was uninterrupted and the patient left the hospital with the wound closed within the month. In December, 1899, the patient, at the kind suggestion of Dr. Berry, called to report himself to me. He looked perfectly healthy and had gained over a stone in weight since his return home. He had neither pain nor tenderness and he said that he felt as well as if he had never ailed anything. The scar was firm, the liver was normal, and there was not the slightest tenderness in the epigastrium or in the gall-bladder region.

CASE 3. *Chronic pancreatitis; cholecystotomy; cure.*—The patient was a man, aged 45 years, residing at Pickering. On March 19th, 1898, he was brought to see me by Mr. G. V. Robertson of Pickering, the history being that he had been well up to 12 months before, when he began to have painful attacks at the pit of the stomach ending in vomiting, but not followed by jaundice until an attack on Jan. 1st, 1898, since which time he had been deeply and continuously jaundiced. He had also from that time onwards had ague-like attacks, and two days before seeing me he had had within 24 hours three of these seizures, each accompanied by pain. Within a twelvemonth he had lost 2st. 8lb. in weight. On examining him there was some swelling in the gall-bladder region but no tenderness. The liver was a little enlarged but the margins felt smooth. There was decided tenderness in the middle line just above the umbilicus and on deep pressure the pain was considerable and an indefinite fulness could be felt. The diagnosis of gall-stones in the common duct was made, and an operation was advised. The patient was operated on at a surgical home on March 30th when the gall-bladder was found to be slightly distended and surrounded by adhesions to the pylorus, duodenum, colon, and omentum. No gall-stones could be discovered, but there was a well-marked swelling of the head and the first two inches of the pancreas which though nodular and irregular was not very hard. This extended further to the right than normal so as to cover in the lower end of the common bile-duct. Cholecystotomy was performed. Within 24 hours of the

operation nearly four pints of very offensive bile were discharged through the tube. A specimen was examined by the Clinical Research Association and their report was as follows: "The bile contains both staphylococci and streptococci, but no bacillus coli communis could be found either under the microscope or in the culture." Fearing that the disease might be malignant and the patient being so extremely weak and ill I gave a poor prognosis, but in a few days I was able to write: "[The patient] is progressing very satisfactorily, though he is still profoundly weak. Bile has appeared in the motions so that the obstruction is evidently overcome. The bowels have been moved naturally and the patient is less deeply jaundiced and looking better generally." On April 5th I was able to report that he was taking food well and that bile was passing freely in the motions He had had no recurrence of the shivering attacks. The drainage was continued for 14 days. On the 20th the patient returned home. The urine was then free from bile and the motions were assuming a natural colour; he was taking food well, gaining flesh, and looking better generally. I still, however, gave a guarded prognosis, though I said that I hoped that the tumour would prove to be inflammatory and not malignant. From that time onward his progress to recovery was extremely rapid. A report I had of his condition from Mr. Robertson a few months later said that he was perfectly well in every respect and that he had fully regained his lost weight. I heard of this patient two years after his operation and he was still in perfectly good health.

CASE 4. *Chronic pancreatitis associated with gall-stones; cholecystotomy; cure.*—On Oct. 20th, 1899, I was asked by Dr. T. C. Squance of Sunderland to see a female patient, aged 51 years, who had been suffering for three years from attacks resembling those of gall-stones, each attack being followed by jaundice. During the past 14 weeks the seizures had been more frequent and severe and jaundice had never quite cleared away before another attack came. She had lost flesh and strength considerably and had vomited from time to time between the attacks. Her digestion was much impaired and there was a want of appetite. She had had no rigors, and had only slight fever at the time of each seizure. The urine contained abundant lithates and a slight trace of albumin, but no sugar. On examination the abdomen showed no manifest enlargement of the liver or gall-bladder, but some tenderness over the gall-bladder and at the epigastrium where there was an indefinite sense of fulness. An operation was performed on the 23rd, when after detaching numerous adhesions 15 gall-stones were removed from the cystic and common ducts, but as a large nodular mass was occupying the head of the pancreas and partly obstructing the common duct it was deemed advisable to perform cholecyst-enterostomy so as to make a permanent opening between the fundus of the gall-bladder and the duodenum. The tumour gave the impression both to myself, to Dr. F. Macrae, and to Dr. Squance that it was malignant. Recovery was, however, uninterrupted, the button was passed on the tenth day, the wound healed by first intention, and the patient immediately began to put on flesh. She returned home within the month and has since been perfectly well in every respect. It is now nine months since the operation, and her health, I am informed, is perfect.

CASE 5. *Chronic pancreatitis; cholecystendysis; cure.*—The notes of the following case have been kindly furnished by my friend Mr. Peter MacGregor of Huddersfield. The patient was a female, aged 51 years, married, and the mother of several healthy children. "Her previous history was unimportant, but for two or three years she had been a dyspeptic and during the past nine months she had been more or less continuously under medical treatment for dyspepsia and recurring attacks of 'cramp in the stomach.' ..... I first saw her on August 19th, 1899, when I got the above history, and a careful physical examination elicited nothing beyond tenderness in the pyloric region. On the 28th, I was telegraphed for to see her and found her suffering from a severe attack of gall-stone colic. She was seen at intervals from August 28th to Oct. 16th. On the latter date I found her emaciated and in more or less constant pain, with frequent attacks of colic and distress after every particle of food and with much straining and vomiting. Every variety of food had been tried, predigested and otherwise, but all with the same result—constant pain and frequent vomiting. Dr. Williams told me that he could feel a tumour in the pyloric region, but the patient was so very ill and examination caused so much distress I did not satisfy myself of the fact. No jaundice on this date, but previous attacks of colic had been followed by jaundice. On Nov. 25th the patient came into a nursing home for operation. She was then in constant pain with frequent retching, deeply jaundiced, and a perfect skeleton. Operation (Nov. 28th).—On examining the patient under chloroform a hard, rounded, irregular tumour was found between the umbilicus and the ribs. On opening the abdomen the stomach, much dilated, was found extensively adherent to the under surface of the liver and on stripping it off, a healthy gall-bladder in the normal position came into view. The right kidney, which had been diagnosed as 'floating,' was examined and the diagnosis verified, but the rounded, hard, irregular mass behind the duodenum appeared to be so undoubtedly a malignant tumour of the pancreas that the abdomen was closed and the friends were informed that the case was malignant and hopeless. After history: The temperature never went above normal; stitches were removed on the ninth day. On the fifth day after operation patient had a chop for dinner. Within a fortnight the jaundice had gone, the appetite rapidly improved, and she went home at the end of three weeks feeling much better, although the four medical men who were present at the operation all felt, and said, she would die within six weeks. On March 15th, 1900, she was plump and fat, ate anything, had had neither pain, retching, nor vomiting since the operation. Her tumour had quite disappeared and her medical man had discharged her as cured many weeks since."

CASE 6. *Chronic pancreatitis; cholecystotomy; cure.*—A woman, aged 35 years, was admitted to the Leeds General Infirmary under the care of Dr. A. G. Barrs on Sept. 11th, 1899, and transferred to me a few days later with the history of having been subject to attacks of spasm in the upper abdominal region for 12 years, the intervals between the seizures having varied from a few days to several months, but of late they had become much more frequent, and during the week before admission she had had four attacks, all severe ones. The seizures began with pain in the epigastrium accompanied by cold sweats and faintness; the pain passed through the mid-scapular and to the right subscapular region, and lasted from two to six hours, having to be relieved at times by morphia. Jaundice followed the seizures, and if the attacks recurred frequently it was intensified with each, but if there was a long interval only an icteric tinge remained. Palpation revealed a point of tenderness in the mid-line one and a half inches above the umbilicus where there was a sense of resistance with an abnormal fulness, but there was no tenderness over the gall-bladder nor could any swelling of the gall-bladder or liver be discovered. On Sept. 21st a vertical incision through the right rectus exposed adherent viscera and on the separation of the adhesions a thickened gall-bladder was exposed, but there were no gall-stones in it or in the ducts. The lower part of the common duct was surrounded and overlaid by a well-marked swelling of the pancreas which was harder than usual, but not sufficiently hard to be mistaken for cancer though it was somewhat nodular. Cholecystotomy was performed and drainage was carried out for a fortnight. Recovery was uninterrupted and the patient returned home within the month and she has remained well since.

CASE 7. *Chronic pancreatitis with gall-stone in the common bile-duct; cholecyst-enterostomy; relief; relapse.*—A man, aged 45 years, from Queensbury, was admitted into the Leeds General Infirmary under my care on Nov. 3rd, 1899, suffering from jaundice with repeated attacks of pain and ague-like seizures. He had been well up to 13 months before his admission when the attacks began and since their onset he had lost 6 st. in weight. Jaundice followed the first seizure and persisted, but after each attack of pain it was more intense. He was so weak and ill that it was feared he could not bear an operation. An enlargement of the right lobe of the liver could be felt and on its inner side in the mid-line just above the umbilicus there was another tumour situated behind the stomach. On Nov. 9th an operation was performed on a heated table with the patient enveloped in wool, an injection of 10 minims of solution of strychnia having been previously given. On opening the abdomen an enlargement of the right lobe of the liver was seen, the gall-bladder was found shrunken under adhesions, a floating gall-stone too hard to crush was felt in the common duct, and a hard nodular tumour of the head of the pancreas was discovered. As the latter was thought to be

malignant and the patient was extremely feeble choledochotomy was not performed, but the gall-bladder was connected to the duodenum by a Murphy's button in order to give temporary relief to the jaundice, fever, and pain. He had a severe rigor on the night of operation but afterwards progressed satisfactorily and recovered from the operation. The button passed on the twelfth day and as he had gained some weight and was taking his food well it was thought that the operation was going to be of real benefit to him. The subsequent history of the case was as follows:—On Dec. 8th (a month and a day after operation) he had a feeling of chilliness, and a temperature of 101° F. followed for two days, his temperature being afterwards normal for 12 days, when he had a rigor and a return of the jaundice; from this time, although he got up every day, he gradually became weaker, and in January, 1900, he developed bronchitis which ushered in the final scene. At the post-mortem examination the peritoneum was found to be free from inflammation and the gall-bladder was found to be connected to the duodenum one and a half inches beyond the pylorus, but the opening had contracted so that it would only admit a fine probe. The common bile-duct was dilated and ulcerated and it contained a gall-stone of the size of a filbert. The liver was considerably enlarged and the right lobe was occupied by an abscess containing thick, slimy muco-pus. The walls of the abscess cavity were ragged and ill defined and it reached nearly to the surface both in front and behind. It was doubtless the result of the suppurative cholangitis which was present. The pancreas was much indurated about the head, and together with the indurated tissues in the small omentum presented on palpation the sensation of a tumour. On section it presented to the naked eye the appearance of chronic inflammation rather than growth, and on microscopical examination this view was confirmed, there being a great excess of interstitial fibrous tissue, but no sign of cancer.

To add other cases would be tedious to my hearers, but I thought it desirable in bringing forward a subject of this kind to illustrate it by a detailed history of cases that had actually come under my observation. The last case where death occurred from other causes two months after operation is, I think, of importance, as it enabled one to ascertain the after condition of the pancreas which at the time of operation presented the appearance and feel of a considerable tumour. It clearly shows that drainage is capable of relieving the form of pancreatitis which I have described, but that for permanent relief a cholecystotomy is a much safer means than a cholecyst-enterostomy, seeing that the fistula in the latter operation may close before it has completely done its work.

The difference in the results of operations for chronic pancreatitis and cancer of the pancreas is well shown in my own practice. Of 17 patients on whom I have operated and found chronic pancreatitis to be the obvious disease present, 16 have recovered, and except in the one case related the patients have been restored to health; whereas in cancer of the pancreas, of 16 patients only nine recovered from the operation and of these the prolongation of life was so short as to make me reiterate what I said years ago that if we can diagnose cancer of the pancreas with certainty any operative treatment is likely to be useless or harmful. Seeing, however, that sometimes the diagnosis may be doubtful, and that this must often be the case in young and middle-aged subjects, I am of opinion that an exploratory operation should be seriously considered in such cases, as, should the case turn out to be an inflammatory condition of the pancreas and not cancer, I think that I have proved that much may be hoped for by surgical treatment.

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WESTERN COUNTIES VETERINARY ASSOCIATION.—The half-yearly meeting of this association was held at Plymouth on July 19th under the presidency of Mr. P. G. Bond. The President, in the course of an interesting address, reviewed the condition of the veterinary art for the past 30 years. Mr. Bond, in referring to the war in South Africa, said that anyone reading of the frightful condition of the horses and their want of proper treatment, as testified to by expert evidence, must be impressed with the urgent need of the veterinary department of the army being put on a proper footing, and he added that until the position of the veterinary surgeon in the army was as fully recognised as that of the medical officer, so long would this lamentable state of affairs continue.

# A Clinical Lecture

ON

# HAMMER-TOE AND HALLUX VALGUS AND RIGIDUS.

*Delivered at St. George's Hospital on Jan. 23rd, 1900,*

BY WARRINGTON HAWARD, F.R.C.S.ENG.,
CONSULTING SURGEON TO THE HOSPITAL.

GENTLEMEN,—There were three cases of "hammer-toe" admitted last week under my care; and so with these illustrations available, I think that it may be useful to make this deformity the subject of to-day's lecture. The cases may not seem at first sight to be of much importance or interest, and yet the condition is well worthy of your attention because of its frequent occurrence and the inconvenience which it produces. In its advanced or neglected stages the condition gives rise to painful and disabling lameness, and may thus prevent the sufferer from earning his living; or by interfering with exercise it may lead to serious loss of health.

The deformity to which the name of "hammer-toe" is applied consists of a retraction of the toe towards the metatarsus, with flexion at the first interphalangeal joint. An examination of cases in the early stages shows that the deformity commences by the retraction or hyper-extension of the proximal phalanx. The extensor tendon can be seen and felt on the dorsal surface of the toe, firmly contracted and showing prominently beneath the skin over the metatarsal bone. After a time, and as the retraction becomes more pronounced, the second phalanx becomes flexed so as to bring the last phalanx to the ground. This position throws undue pressure upon the extremity of the ungual phalanx, which is thrust upwards and extended upon the second phalanx, and the skin of the tip of the toe becomes greatly thickened and hardened. When this stage is reached the first interphalangeal knuckle projects prominently above the level of the adjacent toes; and now there is developed over the joint a corn which is the chief cause of the pain and lameness which ensue. Beneath the hard and thickened skin of all corns there is developed a bursa, the inflammation of which gives rise to the lancinating pain so often suffered. The outer wall of this bursa is continuous with the subcutaneous connective tissue, and hence, when the bursa becomes inflamed or suppurates, it very easily becomes the starting-point of a cellulitis which may spread up the limb and reach a serious degree and extension. This is especially the case when suppuration occurs within the bursa; the density of the surrounding tissues makes it difficult for the contained pus to escape, and I have seen many a serious case of cellulitis of the foot and leg having this origin. Short of this severe complication, however, the corn over the hammer-toe is certain to be the seat of frequently recurring inflammation, giving rise to severe pain and completely preventing walking, until at last ulceration occurs and causes persistent lameness and misery. So, you see, may an apparently trivial deformity become of serious and far-reaching importance.

I exhibit to you a number of specimens of hammer-toe which I have added to our museum, and which have been prepared to show the pathological anatomy of the condition. Some have been dissected to display the tendons and ligaments, and others to demonstrate the corn and subjacent bursa; in others sections have been made that the changes of the shape and position of the bones may be seen. I have dissected a great many such toes and have found them all showing essentially the same character. A study of the specimens before you will show the following points of interest besides those which I have already described. 1. That the deformity is not, as has sometimes been stated, dependent upon contraction of the *flexor*. It is not a mere flexion of the phalanx, but something quite different and more complex—viz., a hyperextension of the proximal phalanx, a flexion of the second phalanx, and a thrusting upwards and hyperextension of the ungual phalanx. 2. The extensor tendon is shortened; the flexor is not contracted but follows the plantar retiring angle. 3. The lateral ligaments

are shortened, the plantar ligaments are unaltered. 4. The articular surface of the first and second interphalangeal joints are altered in shape in accordance with the incidence of the pressure caused by their fixation in an abnormal position.

A clinical examination of the cases in the hospital shows in each case a condition of the toe exactly corresponding with the specimens upon the table. In each case it is the second toe which is affected, and all the specimens which I have shown you are second toes. Of the three patients before us Case 1 is that of a boy, aged 12 years, who has been lamed for several months owing to the inflammation of the corn on the hammer-toe. The second toe of the right foot presented the usual characters of the deformity—the first interphalangeal knuckle projected above the first and third toes, the corn over it was swollen, and the surrounding skin was red and tender. He tells us that several of his uncles have a similar condition of the toes, but he cannot furnish precise details of them. The boy is anxious to obtain employment in the public service, and therefore he desired a cure without amputation of the toe. After subduing the inflammation of the corn I excised the articular surface of the proximal phalanx together with the corn, dividing at the same time the extensor tension, and at once straightened the toe.

Case 2 is that of a man, aged 23 years, who for the past year has been constantly lamed by the inflammation of the corns over a hammer-toe on each foot. The second toes had been contracted as long as he could remember and had gradually become more troublesome. He wished to have the toes amputated, and this has been done, the toes being removed by the oval method at the metatarso-phalangeal joint. I show you these toes, one of which has been dissected to exhibit the tendons and ligaments. The other has been sawn through longitudinally to display the position of the bones.

Case 3 is that of a domestic servant, aged 19 years, in whom the second toe of the right foot was a well-marked "hammer-toe." The toe has been contracted since early childhood, and lately the frequent recurrence of inflammation of the corn over the interphalangeal joint has been a constant source of lameness. Besides this the great toe was thrust outwards and its last phalanx pressed against the third toe, causing ingrowing of the toe-nail. The corn over the hammer-toe was ulcerated and the ungual phalanx was very bulbous with much thickening of the skin of the end of the toe, and of the nail. At the patient's urgent request I amputated the toe. At the same time I cut away the granulations and a circular flap of skin on the outer side of the nail of the first toe; by the contraction of the resulting cicatrix the skin was drawn away from the edge of the nail and its ingrowth prevented. The patient will wear a wedge of felt between the first and third toes, and must take care to have boots with a straight inner edge.

As to the causes of this deformity I must admit that I have no satisfactory explanation. It is not usually caused, as so many deformities of the foot are, by wearing mis-shapen boots, although it is occasionally attributable to the use of narrow boots, whereby the toes being crowded together the second toe is thrust up above the level of the adjacent toes. I have also seen a few instances in which I thought that it might have been caused by too short boots. In many cases the tendency to hammer-toe is inherited, the deformity often appearing in one side only of the family. In Case 1 several of the boy's uncles were said to possess hammer-toes. In the forty-fourth volume of the Transactions of the Pathological Society of London I have published a case which well illustrates this heredity.

The patient was a boy, aged 15 years, in whom the second toe of the right foot was a hammer-toe. His paternal grandmother (A) had hammer-toe—viz., the second toe of the right foot. A's son (B), the father of the patient, had the same condition of the second toe of the right foot. The following are particulars regarding B's children:—(1) son, hammer-toe, second toe of the right foot; (2) daughter, hammer-toe, second toes of both feet; (3) daughter, no deformity; (4) daughter, no deformity; (5) son, hammer-toe, second toe of the left foot; (6) daughter, no deformity; and (7) son, hammer-toe, second toe of the right foot.

The condition is sometimes congenital and may be seen in various degrees in infants. A somewhat similar condition of the fifth toe also occurs in infants. This is always congenital and does not as a rule attain the same degree of severity as in the second toe.

Then there is another class of cases in which all or nearly all the toes acquire a similar distortion, not usually of very severe degree, but sufficient to cause a very awkward gait and often considerable lameness. These are mostly met with in neurotic girls with bad circulation, whose toes are blue and cold, and in whom the first symptom is aching pain with contraction of the common extensor of the toes. After a time, as retraction of the first phalanx occurs, a proportionate amount of flexion of the toes is seen and corns begin to form over the knuckles. These differ from the ordinary cases of hammer-toe in several respects. In the first place all the toes are affected, as contrasted with the ordinary cases in which only one toe is contracted. Then, secondly, the deformity does not usually attain so severe a degree as in the ordinary form. And thirdly, when the patient is at rest the toes can be to a great extent straightened, though they are drawn into the contracted position immediately when movement is attempted. To which it may be added that this form of the deformity though not confined to women is very much more common in them; whereas the ordinary form is more prevalent among men. These cases seem to be of nervous origin, they prevail chiefly among overgrown, ill-nourished young women of feeble muscular power and constipated habit, who usually exhibit other signs of nerve disturbance.

Coming now to the consideration of the treatment of hammer-toe, I will speak first of the class of cases just described in which all the toes are affected. For these, in the early stages, manipulation of the muscles, friction of the limb and tip-toe exercise should be used; in addition to which attention should be paid to the general condition of the health. These patients should be warmly clothed, should be given plenty of fatty food, and should be treated for any tendency to constipation. Any cause of nervous irritation should be sought for and if possible removed, and every effort should be made to improve the nutrition of the body. If the extensor tendons are persistently contracted they should be divided. Moderate exercise, stopping short of fatigue, is beneficial, and the more varied such exercise the better is its effect. Active games, therefore, such as tennis and hockey, should be encouraged. Of course, properly-shaped boots with straight inner edge, broad soles, and low heels should be insisted upon. In the cases occurring in infants, much may be done by daily stretching and manipulation of the toe, together with, in some cases, division of the extensor tendon and any contracted ligamentous bands.

For the ordinary and pronounced cases of hammer-toe, such as those now in the hospital, there are several methods of successful treatment which may be adopted. The quickest way of ridding the patient of the trouble of a severe degree of hammer-toe is to amputate the affected toe at the metatarso-phalangeal joint by the oval incision, so that there is no scar on the plantar surface. The head of the metatarsal bone should be left, and the patient should be directed to wear a wedge of felt between the first and second toes to keep them apart and to prevent eversion of the great toe. Many hospital patients, naturally anxious for the quickest possible cure, prefer thus to sacrifice the toe rather than to submit to any of the conservative methods of treatment. But it is undesirable and unnecessary as a rule to remove the toe, especially in those persons why are destined for the public services, and the deformity may be easily and successfully remedied by excising the head of the proximal phalanx. This is best done be turning back a semilunar flap from the dorsum of the too and dividing the lateral ligaments; the head of the bone is then thrust out of the wound and cut off by bone forceps. If there is a bad corn over the knuckle it is best to excise it completely by converting the semilunar into an oval incision which surrounds the corn. The toe is then straightened, the skin is united by sutures, and the foot is kept on a splint for three weeks. Fibrous union occurs between the bones and the toe remains straight and gives no further trouble. Patients thus treated are quite fit for active service in the army.

In early cases of less severity, and in which there is no pronounced corn, it may suffice to divide the extensor tendon and the lateral ligaments, together with any bands that prevent complete straightening of the toe, and then to fix the toe for some weeks upon a narrow splint. This operation and the subsequent use of manipulation and stretching of the toe will cure many of the cases met with in children; but severer cases are much more successfully treated by excision of the head

of the first phalanx. Should the patient seek advice, as often happens, on account of acute inflammation of the corn over a hammer-toe, it will of course be wise to subdue this before undertaking any operation for the relief of the deformity. Let me remind you that when there are redness and œdema of the skin round an inflamed corn these symptoms and the accompanying pain depend upon inflammation and distension of the little bursa between the corn and the bone; and that speedy relief may be given by opening the bursa by passing a knife beneath the margin of the corn towards its centre and raising the thickened cuticle so that the fluid contained within the bursa may escape. A hot boric fomentation should then be applied, and when the bursitis and consequent cellulitis have completely subsided the excision of the corn, together with the head of the first phalanx, should be undertaken. Of the many cases in which I have practised this simple operation I have never seen other than a satisfactory result.

Besides these cases of hammer-toe you have recently seen under treatment a case of severe bunion, or "hallux valgus," on which it may be useful to say a few words; for this, again, is a common deformity which often gives rise to great suffering.

A woman, aged 24 years, had suffered from bunion since she was 10 years of age. The feet exhibited in a severe degree the condition characteristic of this deformity. The great toe was thrust outward so that there was a partial dislocation at the metatarso-phalangeal joint, and the head of the metatarsal bone was unduly prominent. It is interesting to notice (as I have shown in other cases) that where joint surfaces are not in contact the loss of functional activity leads to wasting of the articular cartilage. Thus it was seen, when this case came to be operated upon, that the articular cartilage over the inner third of the head of the metatarsal bone was much atrophied, and at the edge had almost disappeared. In older people there is often an irregular outgrowth of bone in this situation giving an additional prominence to its inner border. Over the prominence there was the characteristic circle of thickened and hardened skin between which and the bone there was a well developed bursa. The tendon of the extensor of the toe stood out tensely beneath the skin. This deformity is no doubt produced by wearing boots of which the inner edge slopes towards the middle line of the sole—a foolish fashion provocative of other evils besides bunion; some of the worst cases, however, occur in persons the subjects of osteo-arthritis, a disease which greatly aggravates the deformity. For such a condition as this patient exhibited the most satisfactory treatment is excision of the metatarso-phalangeal joint and of the bursa over it and the division of the tendon of the extensor of the toe. This having been done the toe was easily brought into a line with the inner border of the foot and fibrous ankylosis has taken place in that position. We took care that the patient had a pair of properly-shaped boots and in these she can walk quite comfortably. This operation seems to me to be much more likely to give satisfactory results than excision of a wedge of the metatarsal bone; in some cases, however, it is sufficient to remove the metatarsal head and to leave the base of the phalanx.

In slight and early cases division of the extensor tendon and forcible straightening of the toe may be practised, but this must be followed by the use of a digitated stocking and a wedge of felt between the first and second toes; or a boot may be worn with a separate division for the first toe. A spring splint should also be worn at night. But excepting for these slight cases the splints, springs, and other kinds of apparatus which have been invented for the treatment of bunion are worse than useless.

One other case which I will briefly allude to is that of a boy, aged 15 years, who was admitted to hospital on account of lameness due to the condition known as "hallux rigidus." The patient is employed in the post office and has much standing. There was a slight degree of flat-foot, and the right metatarso-phalangeal joint was rigid, painful, and incapable of voluntary movement. The position of the bones was not altered and there was no pain on moderate inter-articular pressure, but any attempt to walk or to bear any weight on the foot gave severe pain. I treated this boy for some time as an out-patient (as he was anxious not to give up work), supporting the arch of the foot, taking off pressure from the painful joint, &c., but with no benefit. He was therefore taken into the hospital and I excised the head of the metatarsal bone. This relieved him of pain and enabled him to walk with comfort. I could discover no disease of the bone or articular cartilage; the only abnormality seemed to be that the joint surfaces were fixed rigidly in close contact but without any real ankylosis.

# Presidential Address

ON

# THE PRESENT POSITION OF PHARMACY.

*Delivered at the British Pharmaceutical Conference on July 24th, 1900,*

BY E. M. HOLMES, F.L.S.,

PRESIDENT OF THE PHARMACEUTICAL SOCIETY.

LADIES AND GENTLEMEN,—At the commencement of the century chemists and druggists had just begun to separate into a distinct body from grocers and general dealers. But it was not until 1842, when they obtained a Royal charter of incorporation, that they began to assume the character of an educated body. As the semi-professional character of the business became recognised, in consequence of the examination and education that chemists were compelled to undergo, the number of young men entering it gradually increased. These were and are still drawn largely from respectable families with small incomes who, misled by the small amount of capital necessary to start a business and the reputed large profits, do not recognise that the returns are usually so small that the grocer and draper can make eight or ten times more money, even on small profits, than a chemist is able to do. Nor is it generally recognised that the business depends far more than in any other trade on the personal integrity of the proprietor and that it takes time to acquire the confidence of the public. The fact that the keen financial instincts of the Jews have never led them to embark in pharmacy might have served to indicate to the general public that the business of the chemist and druggist is not so lucrative as is generally supposed. The wills of pharmacists never present large figures and millionaires are unknown in British pharmacy. Nevertheless, the supply of dispensers of medicine has exceeded the public demand. The principle of free trade has prevented such a limitation of the number of those engaged in pharmacy as is prevalent in some other countries, with the result that, like all other trades and professions in this country, its ranks are overcrowded. At the present time there are about 15,600 registered chemists and druggists, of whom it is estimated that about one-tenth only, whom for convenience we will call pharmacists, actually derive their principal income from the dispensing of prescriptions, a small number from what is known as counter-prescribing, and the remainder from light retail and dispensing business, the dispensing being a comparatively small proportion. In some parts of the country, especially in Scotland, there is a much larger proportion of pharmacists who dispense medicine than in England. Even in different parts of England, in some towns the medical men almost invariably dispense their own medicines, whilst in other towns a few miles distant the dispensing is done almost entirely by pharmacists for the medical men. The cause of these local differences seems worthy of investigation, which might lead to more uniformity of practice. There is little doubt, as was pointed out last autumn by Dr. D. J. Leech (whose premature decease we all deplore), that the practice of pharmacy by medical men is not only an evil to the pharmacist but a disadvantage to the medical men themselves, and that medical men would gain if, wherever possible, they gave up dispensing. It is obviously for the safety of the public that every dispenser of medicine, whether employed by a pharmacist, by coöperative stores, or by a medical practitioner, should have passed a qualifying examination in the art of dispensing medicines, and that every medical man who dispenses his own medicine should have passed the same examination in the subject as the pharmacist whose duties he takes upon himself. But under the modern system the medical student, although he has the opportunity of taking up a course of pharmacy at a hospital or medical school, is often not very conversant with the

subject. The safety of the public is best secured when the dispensing of prescriptions is checked by a second or third qualified dispenser, as is the case in dispensing establishments where several assistants are kept. In respect of poisons especially the public needs protection, inasmuch as it does not know their properties or their antidotes, and the chemist and druggist—as being familiar with both and therefore capable of devising suitable precautions to safeguard their use and to give advice in cases of accidental or other wrongful uses of them—is obviously the fittest person to sell them, whilst it is probably largely due to his lack of energy and want of business enterprise that the poisonous articles used in the arts and for sanitary, insecticidal, or horticultural purposes have not always passed through his hands.

There is another direction in which the safety of the public is likely to be affected. Drugs vary exceedingly in quality. In order to sell cheaply at a working profit it is necessary to buy cheaply. As prices are lowered by coöperative stores the tendency will therefore be to buy inferior qualities to meet the demand for low prices. In the case of drugs used in medicine this may lead to serious results, since when medicine is required to act quickly and effectively, as in croup or in parturition, &c., if the ipecacuanha or ergot be of inferior quality serious danger to life may result through its want of activity. In Russia, Germany, Scandinavia, and Greece this difficulty is met by a legalised tariff for dispensed medicines. In this country it is left to the public themselves to judge by the British Pharmacopœia which upholds a high standard of purity in medicine, and the importance of asking for "B.P." preparations might well be taught to the laity by the wider use of these two letters on ordinary labels.

It has been stated by medical men that what is known as counter-prescribing by pharmacists is one of the causes why dispensing is not entirely handed over to the latter by the medical profession. The subject is no doubt surrounded with practical difficulties, but probably these are not insuperable. There is no law to prevent a man, however ignorant he may be, from prescribing remedies for himself, his friends, or his household, and it has been stated on high medical authority that it would not be objectionable for persons to apply at a pharmacy "for simple remedies for toothache, muscular pain, or trifling dyspeptic ailments, provided the person seeking relief knew what he was about and was not deceived by the assumption of an authority, or of titles, on the part of the chemist, and provided that such relief was merely to be regarded as first aid, or a temporary expedient" for a definite complaint stated by the patient. But this is a very different state of things from what is known as a prescribing business, in which the chemist goes beyond his province in diagnosing disease and supplying remedies for it. In such business the straightforward plan would be for the proprietor to qualify as a medical practitioner or to arrange with a properly qualified man to see his clients. The converse of this is the medical practitioner who keeps open shop like a chemist, and to whom is largely due the difficulty that the uneducated public find in distinguishing between a chemist's and a doctor's shop. It might be possible, perhaps, for representatives of the medical profession and the Pharmaceutical Society to arrange a conference to make mutual provisions for counter-prescribing by chemists to cease on the one hand and the keeping open shop by doctors on the other. This would need disciplinary powers for both bodies to deal with offenders, but the two bodies united could probably, by a good organisation, bring sufficient influence to bear upon the Government to pass an Act authorising such powers.

The real difficulty for the conscientious pharmacist lies in the impossibility of ascertaining whether the case, very often that of an absent person, comes within the limits of first aid or temporary expedients. This difficulty would probably be met most satisfactorily if a small official work were issued by the General Medical Council or by Government authority to the general public indicating on general lines the premonitory symptoms of dangerous or zymotic diseases such as would distinguish, for instance, an ordinary cold from incipient pneumonia or a sore throat from approaching diphtheria or scarlet fever. Such a work in the possession of the heads of families and on the desk of every chemist might serve to indicate both to the public and the pharmacist a dividing line between first aid and the necessity of medical treatment and supervision.

Another difficulty lies in the fact that in small villages where there is no chemist and no carrier it is difficult for the medical man to avoid dispensing. Here, however, is the opportunity of the enterprising chemist in the nearest town to see that the medical man has a portable outfit which he can carry with him on his rounds. The advantage of such portable medicine chests in country villages and for travellers has already been recognised by enterprising London firms which have adopted and enlarged upon the hint given by Brockedon's compressed potassium bicarbonate of 50 years ago. The increase in the rapidity of travelling and the absence of an international Pharmacopœia has caused a demand for portable medicines which has been increased by the opening up of new countries where it is impossible to obtain medicine, so that a new industry in this direction has been developed in which English pharmacists, with characteristic conservatism, have allowed Americans to take the lead. The great advantage in the saving of time by the use of portable medicines to both the medical practitioner and the patient in country districts where there is no chemist within several miles and where the considerable delay in the delivery of medicine, by reason of the distance, is often of serious importance, is almost certain to lead to the permanent adoption of such time- and labour-saving devices. The value to the public of portable medicine for travelling purposes cannot be denied, as well as to the Government, since in military and naval operations the sudden demands made upon medical stores and appliances necessitate the use of drugs and preparations occupying as little space as possible, in a form as concentrated as is compatible with safety and not readily affected by the vicissitudes of climate. This form of medicine has therefore become a feature of the pharmacy of to-day and is likely to develop still further. It has, however, the disadvantage of placing in the hands of the laity powerful remedies which they are apt to use without proper medical advice and without the ability to judge of the nature of the disease for which they employ them.

The vast number of new vegetable, chemical, and animal remedies introduced during recent years, and the impossibility of keeping pace with them, on the part of the medical men and the pharmacist, especially in the provinces, where as a rule new remedies do not come into use until two or three years after introduction into city practice, has led to the comparative disuse of the Pharmacopœia for prescribing purposes and to more dependence being placed by physicians concerning new remedies upon such works as Martindale's "Extra Pharmacopœia" and Squire's "Companion to the British Pharmacopœia," works which enterprising pharmacists have produced to meet the necessities of medicine and pharmacy during the time that elapses between the publication of one Pharmacopœia and another. These works have also the additional advantage that they contain tables of diseases and of all the most modern remedies used for them, as well as the doses and formulæ showing useful combinations of the various preparations. In these rapidly progressive times the pharmacopœias cannot, even if published decennially, be actually up to date; it can only crystallise into a definite shape formulæ that have already been in use for some time. The Pharmacopœia is now really more used by pharmacists as a standard for insuring uniformity in official preparations than by physicians for prescribing purposes. It is only just, therefore, that pharmacists as a body should have an influential voice in its construction, especially as they have shown by publication of numerous formulæ that have been accepted in the previous pharmacopœias that they are quite capable of devising approved formulæ. The medical profession must, of course, necessarily determine what remedies and preparations shall be included in it for their convenience.

### THE PHARMACOPŒIA AS A LEGAL STANDARD.

Many vexatious prosecutions of chemists have resulted from the fact that the British Pharmacopœia has been erroneously supposed by many analysts to be a legal standard for the purity of drugs. The statement in the Pharmacopœia that the work is "intended to afford to the members of the medical profession, and those engaged in the preparation of medicines throughout the British Empire, one uniform standard and guide, whereby the nature and composition of substances to be used in medicine may be ascertained and determined," in no way indicates that it is to be used as the legal standard of purity for drugs used in commerce for domestic and technical purposes. To prosecute chemists because, for instance, tincture of myrrh, which is

used as a dentifrice rather than as a medicine, or benzoin, which is used in French polish, or soft soap, or ammonium carbonate, soda water, or other articles in regular household use, do not answer to the tests of purity of the B.P. would constitute an interference with trade that would be as absurd as it would be vexatious. That the standard of purity used in dispensing physicians' prescriptions should be as high as it is possible to make it is an article of faith of the British Pharmaceutical Conference, but there are many cases in which drugs and preparations which are B.P. articles are used for other than medical purposes, and for such the average of normal condition of purity meets all the requirements of the case. There is, therefore, a need for a published standard of normal or average purity of drugs for this purpose until such time as the Government realises its duty to publish a legal standard, by which the provisions of the Sale of Food and Drugs Act can be effectively and justly carried out. In the absence of any definite Government standard for drugs this is the work which analysts, in conjunction with pharmacists, should take up, and one that the conference should support in the interests both of the public and of chemists themselves.

There appear to have been several causes that led to the erroneous supposition that the B.P. is a legal standard for the purity of drugs. One is the misleading use of synonyms in the B.P. The names of commercial products in several cases in which they differ considerably in composition from the official article are given as synonyms, such as "milk of sulphur" for sulphur præcipitatum and "soft soap" for sapo mollis. Such synonyms are misleading and serve no useful purpose, since medical practitioners never use them in their prescriptions, and they might well be omitted. Another cause that leads to unjust prosecution is due apparently to the ignorance that exists amongst analysts who are not also pharmaceutical chemists concerning the rapid changes that many vegetable and other preparations undergo when kept in stock. Indeed, it would be a considerable advantage to both analysts and the public if the former were required to pass the major examination of the Pharmaceutical Society before going in for the more stringent chemical examination of the F.I.C., since a knowledge of the physical and histological character of crude drugs is practically essential to the accurate determination of their purity or otherwise.

It may here be remarked that a fear lest the B.P. might be used as a legal standard seems to have had a deteriorating influence on its construction, having apparently led in some cases, such as those of myrrh and aloes, to a lowering of the limits of purity, so that it is possible for very inferior qualities of the same drug to be sold and still meet the B.P. requirements. Such latitude is deplorable, since it leads to unfair competition and affords no security to the public that they get the article they want when they desire that their medicines—for instance, compound liquorice powder, Gregory's powder, or confection of senna—should be of the best quality and effective action, even if prepared according to the B.P.

### AN INTERNATIONAL PHARMACOPŒIA.

A general pharmacopœia that would enable a pharmacist to dispense a prescription with uniformity in any pharmacy on the continent may be regarded as a utopian rather than a practical idea and could only be attained by alphabetically arranging in dictionary form all the formulæ in all the known pharmacopœias. But there can be no reason why an approach towards it should not be made by a congress of medical men and pharmacists, limiting their attention, in the first place, to poisonous preparations only, and in order to avoid international jealousies adopting as a standard the formulæ that approach nearest to decimal proportions. The comparison of different formulæ is rendered a simple matter by the publication of the different strengths of preparations of the various pharmacopœias in Squire's "Companion to the British Pharmacopœia." The next step might be to make uniform the strength of the most generally used preparations that are not poisonous. A really useful International Pharmacopœia cannot be otherwise than a gradual growth.

The introduction of standardisation of the more powerful preparations of the Pharmacopœia and the stringent chemical and microscopical tests now ordered in that work to ascertain the purity of drugs cannot be carried out in any but large businesses where several assistants are kept and where one man can devote his whole time to testing drugs and standardising preparations. Hence the personal guarantee of the purity of the preparation he supplies is passing out of the hands of the single-handed retail pharmacist.

The increase of knowledge in every branch of medical science has caused the study of pharmacy and pharmacognosy and dispensing to be somewhat neglected and forced them to occupy a comparatively unimportant position in the curriculum of medical study, so that the act of prescribing is in danger of being lost. The medical practitioner—anxious to utilise the most recent improvements in scientific remedies, but with his time fully occupied in visiting patients and diagnosing diseases—consequently indicates what he requires to the pharmacist who readily supplies him with a list of formulæ compiled from the most recent publications or specially devised to meet the wants of the prescriber who accordingly chooses from those put before him the one he considers most suitable. Naturally, these preparations can be more economically prepared on the wholesale scale. The retail pharmacist has little chance of success unless he can conduct his operations on the large scale and many of the more enterprising are therefore turning their businesses into limited liability concerns. Co-operation is a growth of the times, an outcome of competition. Judging from past history it is as unwise and useless to attempt to oppose coöperation as it was for the courtiers of Canute to ask him to forbid the advance of the sea. Coöperation has come to stay and, like a forest fire, can only be met by similar tactics—i.e., by coöperation. The only hope for a livelihood for those who have not much capital is in coöperating with those who possess it—a coöperation of knowledge with business capacity.

With respect to the use of the titles "pharmaceutical chemist" and "chemist and druggist" by companies it is difficult to find any sound objection to this provided all the members of the company are legally qualified to use it; but where they are not, and company laws are utilised to cover incompetent persons who have possibly failed to satisfy the legally-appointed examiners of their competency to dispense medicine, such an illogical and unjust use of the titles should be uncompromisingly opposed by a thoroughly well-organised political resistance to any Bill proposing it. In other words, no company should be allowed to use a legal title for which its members have not the qualification prescribed by law. The logical result of such a concession would be to nullify the Pharmacy Act, since if one man who fails to pass an examination in pharmacy can join with six others to form a limited liability company which can use the titles of "pharmaceutical chemists" or "chemists and druggists," a number of persons would be able to do what the law has expressly stated one man may not do. The injustice that would thus be done to those who have already expended much time and money to obtain the title is so obvious that it can hardly be possible that disinterested and conscientious legislators could support such a provision for disregarding vested interests or could adopt the principle it would involve of making one law to enable persons to evade another.

Another change noticeable during the latter part of the century has been the enormous increase in the public demand for what are known as patent medicines. This may be seen from the amount derived from the sale of medicine stamps, which has increased from £43,692 in 1860 to £266,404 in 1899. The preparations commonly alluded to under this heading consist in reality of at least three different classes. 1. The quack medicine, a preparation advertised to cure everything, or nearly so. 2. Proprietary medicines, such as chlorodyne, liquor opii sedativus, liquor bismuthi, fluid magnesia, pepsin wine, &c., which have some real value as medicinal agents, and have been so much prescribed by medical men that in many cases official imitations have been introduced into the Pharmacopœia. 3. Proprietary articles for domestic use, such as perfumes, hair lotions, peptonised and pancreatised and malted foods, inhalers, court plaster, and skin soap. The articles in the first class are objectionable from every point of view. But proprietary medicines are often the result of the application of chemical knowledge and pharmaceutical skill in advance of the time, and, as such, and as comprising also the personal element, have a value of their own. So long as they are prepared by one person directly interested in the excellence and uniformity of the production they are even more likely to be uniform in character than a B.P. preparation prepared by different operators within the too often wide limits of quality of drugs allowed by the descriptions and tests of that work. Proprietary

articles, as distinct from proprietary medicines, are usually started to meet a public want, and although their sale doubtless depends largely on advertisement, they would soon go out of use, like date coffee, if they had no intrinsic merit of their own. Those articles, therefore, form a part of the chemist's business that is worthy of attention from another point of view than that of retail sale. Whilst the limit of profit is reduced by the competition of stores to a level at which it does not pay the chemist to keep his money lying idle in stock, the obvious remedy is for the chemist not to retail any proprietary articles except his own or those which are protected by the P.A.T.A.[1] Each chemist should manufacture his own specialty, since the manufacturer's profit is certain and can be arranged at a paying rate, whilst that of the distributor is not so in many cases. The stores and large capitalists by buying in very large quantities can alone make these retail sales pay at the present ruinous prices, and the heavier their stock and the more numerous the articles they are compelled by the demands of the public and by advertisements to keep in stock the less profit they will get, until a time arrives when the interest lost on money lying idle in such stock must lead to the raising of prices or to giving up the sales.

The present state of pharmacy is a somewhat anomalous one. As hitherto practised in this country it consists, like the fabulous mermaid, of two incongruous halves. On one side it is a business which to be successful must be carried out on business lines; on the other side it is a profession which should be conducted in accordance with professional principles. But as both are usually carried on in one room the public finds a difficulty in discriminating between them and concludes that the price paid for the dispensing of medicine represents an enormous profit on drugs, instead of being partly a legitimate profit and partly a very small professional fee, no allowance being made for the skill and knowledge bestowed on the preparation of medicine or for the responsibility of insuring accurate dispensing. This is not to be wondered at if the pharmacist himself does not draw the distinction, but carries on both the business and the profession in one and the same room. Patent medicines and packed goods and ready-made preparations which require no skill and entail no responsibility cannot be sold at professional prices, and it should not be a matter of surprise, if such prices are demanded, that business men step in and sell them according to business methods. The two departments must be kept quite distinct if the public is to recognise the professional side of pharmacy. But the public is perhaps beginning to understand that there is such a side, for in cases of serious illness most people prefer to have their medicine dispensed by firms whose reputation as accurate and conscientious dispensers is unquestioned rather than at stores. If the public has not yet learned that there is as much difference in the qualities of drugs as there is in the quality of tea, coffee, and other groceries it is the fault of the druggist for not pointing it out and proving that those who sell cheaply must necessarily buy cheaply, since a business man is not likely to sell the best article at the price of the lowest and try to live by the loss. So long, however, as the Pharmacy Act of 1868 continues in operation it is almost impossible for the pharmacist to divorce his business and his profession. He is faced by the position that the Government requires from the pharmacist, for the safety of the public, an expensive and tedious course of study before he can legally acquire the title of "chemist and druggist" and before he can supply certain scheduled poisons to the public, although he may rarely see a prescription, and other traders can sell other poisons, equally fatal and more frequently used, such as carbolic acid. Those, therefore, who live in districts where the business obtainable partakes more of the nature of that of a general dealer in chemical substances used for technical, agricultural, or horticultural purposes, and involving no personal responsibility, only pass the qualifying examination because they are obliged to do so by law, not because the knowledge of dispensing is of much use to them. This class forms probably at least three-quarters of those engaged in business as chemists and druggists, especially in the more populous centres in the Midlands and North of England. What they most need is a commercial education, instructing them in business methods and modern requirements. This has not hitherto formed part of a pharmacist's education and therefore the importance of the course of commercial education which has been started in some of our universities, and already forms an optional subject in the Philadelphia College of Pharmacy, cannot be over-estimated—at all events, for those chemists and druggists who have to depend chiefly upon the sale of miscellaneous chemical and other articles rather than on dispensing. The conditions which have hitherto obtained in the retail trade of chemists and druggists have not during the last 50 years been favourable for acquiring a useful knowledge of business methods, and such knowledge has undoubtedly in some cases been sought in a practical form at coöperative stores in the same way that Germans come to this country to learn English methods of business and then use them against us. The stores have, at all events, served a good purpose in tending to cause coöperation among chemists themselves. Coöperation can only be successfully met by coöperation, and when competition has lowered profits to a point at which it is impossible to live the natural reaction is bound to follow in the form of combinations or trusts to keep up the price to a remunerative ratio. This has been manifested already in connexion with the paraffin oil and cotton thread industries and iodine, and the P.A.T.A represents a step in the same direction.

[1] Proprietary Articles Trade Association.

### THE FUTURE OF PHARMACY.

The history of the closing century indicates that scientific progress may be expected to be increasingly rapid in the coming one. As each new theory opens up new roads of discovery new trades will follow, or a differentiation of old ones. The pharmacist or dispenser of medicine will probably find enough to do in connexion with new synthetical products, proprietary articles requiring knowledge and skill, and new medical appliances. The chemist and druggist will find that he must keep pace with discoveries in chemistry and the technical uses of new chemicals, and will learn to realise the meaning of Playfair's maxim, that the competition of industries is the competition of intellect.

As the science of sanitation increases, and the laws of health become better known, demands for antiseptics and preservatives of all kinds, both for public and domestic purposes, are certain to increase, and the time may come when liquid air or liquid oxygen will be as commonly sold for sanitary purposes as potassium permanganate is at the present day. The study of animal chemistry, as yet in its infancy, may lead to the preparation of foods that will involve no waste of energy in digestion, and in combining the maximum of nutrition with the minimum of space. The immense importance of such concentrated food for travellers and for armies engaged in districts where transport is difficult may be easily conceived. The investigation of cellulose and protoplasm will probably reveal to chemists the methods by which gum, wax, fats, oil, starch, and even alkaloids and glucosides, are formed by plants, and before another century is over it may be as easy to obtain artificially by chemical means all these important commercial products from sawdust as it is to prepare glucose at present.

The knowledge that bacteria and ferments can produce substances which result in their own destruction will probably be carried out to its logical conclusion, until for all diseases resulting from these causes appropriate antidotes will probably be discovered and kept in stock by the pharmacist, by whom means of preserving them in active condition for a definite time will have to be discovered. The study of the healthy glandular secretions of the human body as remedies in disease will almost certainly lead to a study of the chemical processes by which they are formed, and the attempt to produce them artificially. This, again, may possibly be followed by an investigation of the nervous stimuli under which they are produced in nature, and to the properties of the nerve force which causes the secretion of the various fluids produced by the glandular system for the reparation of bodily waste.

Another and far-reaching object of research may be the scientific investigation of the inter-relationship of mind and body, the possibility of disease being caused and cured through the mind or by the power of the will to control the supply of nervous force to the various organs of the body. Possibly many of the diseases attendant on lowered vitality might thus be successfully combated. A study of the laws regulating the curious phenomena of idiosyncrasy, which is one of the greatest hindrances to the scientifically accurate treatment of disease, may lead to the possibility of preventing it or curing it at an early stage by hypnotic

suggestion or other means. But whatever discoveries the future may have in store the existence of the pharmacist will in any case depend upon the power of accommodating himself to new conditions and his ability to turn to practical account the very latest discoveries in science.

## ADDISON'S DISEASE AND LEUCODERMA.

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IN a lecture lately given at the Medical Graduates' College and Polyclinic by Sir William Gairdner, amongst other subjects said that he wished to say something about the connexion of leucoderma with Addison's disease. He spoke as follows, taking only the points at issue: "Possibly some of you may, and others may not, recollect a very early instance of this association which is of some historical interest. It is in Dr. Addison's famous monograph on Disease of the Suprarenal Capsule. I show you here the book and the plate. It is an evident case of leucoderma which Addison himself at least must have included in the book because he thought it was a case of disease of the suprarenal capsules. But, unfortunately, he had not a post mortem in this particular case. It is curious that Dr. Wilks, writing in Reynolds's 'System of Medicine,' puts his finger on this case and says because it was of a leucodermic order it is not a true case of Addison's disease. In short, he disputes Addison's own view of it. Now a good many years ago I had a case sent to me very late in the disease, when the patient was extremely ill, for an opinion. It was to my mind a case of Addison's disease, with pigmentation, largely of the usual Addisonian type but interspersed with circular and sometimes coalescent patches of vitiligo. That opinion I maintained until the patient's death. A post-mortem examination showed the usual form of disease of the suprarenal capsules. Dr. McCall Anderson, who had seen the case at an early period, had 'spotted' it as a case of leucoderma, but I do not know whether at that time he had made up his mind that there was any sufficient evidence of Addison's disease. However, the case is published in his book." "Not long after this the International Medical Association met in London in 1881 and Dr. Headland Greenhow read a most elaborate paper upon Addison's disease, and you all know how careful Dr. Greenhow was, not only as an observer, but as an almost exhaustive commentator on the literature of a subject. In reference to Addison's disease he may be said to have left almost nothing unnoticed up to the date of his research which is now published in a volume accessible to most of you. At the end of the paper I raised a question and stated briefly the leading facts of the case just referred to which had not at that time been published. I brought forward no theory, but thought the opportunity was a favourable one for ascertaining if anybody else at home or abroad had anything to say on the matter. We got no response. I alluded to the fact of Dr. Wilks having differed from Dr. Addison himself about the significance of leucoderma, as shown in Dr. Addison's own book, and suggested that it was a point requiring to be more carefully dealt with. But there was no information forthcoming and therefore we are bound to assume that no one there present (and it was a large assemblage) had anything to show. I have not seen many cases, but I have seen two or three more or less suggestive of the same thing and I happen to have at this particular time one such case under my care."

I should now like to say something with reference to these remarks of Sir William Gairdner which I think places the subject in a somewhat different position from that in which he sets it forth. I should like to take the opportunity of repudiating altogether the suggestion which some of my friends have made that I had any share in Dr. Addison's work. He was entirely original in his observations and I did no more than that which every pupil does, collect the cases, get the drawings made, and help the publication. This small participation, however, gave me special opportunities for continuing the work. During the next three years several fresh cases came under my notice and then I discovered how unique the disease was, that the change in the capsules was of one uniform kind, and that the discolouration of the skin also had its special characters. The malady, it may well be surmised, was a constant subject of conversation and I may here state that Dr. Greenhow was a frequent attendant in Dr. Addison's wards and acquired knowledge of Addison's views. I then placed all the new cases together, showed what three years had done in defining our knowledge, and in that paper repudiated the case of vitiligo. Before publication I showed my paper containing this repudiation to Dr. Addison. He returned it without comment, but wished me to publish it.

This paper was published in the Guy's Hospital Reports for 1859. I therein say: "As regards the character of the colour when it occurs the observation of several instances since the publication of the original memoir has shown that very great similarity has existed in all of them both as regards the colour itself and its method of affecting the body by a uniform implication of the whole surface. It is true that a case is represented [in Dr. Addison's work] where the body is covered with patches of colour chequered with white, but here no post-mortem took place to verify the diagnosis, and thus the fact is left as we state, that in the first related cases as well as in all subsequent ones there has existed a uniform discolouration of the whole integument. So remarkable has this been that the body has presented the appearance of a person with dark blood rather than that of a European and therefore the answer which Dr. Addison continually makes to interrogatories respecting the peculiarity of the discolouration is that he regards only those cases as characteristic where the surface of the body is seen to be gradually approaching in colour that of an inhabitant of some southern nation."

After another three years I had collected several new cases and wrote a second paper for the Guy's Hospital Reports for 1862. In this I reiterated my statement as to the uniform character of the disease. I say: "My principal object in bringing the subject before the profession is not only to strengthen the original facts by fresh instances but to point out how Addison had somewhat overstepped his own boundaries by including amongst his own cases some which did not present the true features of the disease and thus I hope, by purging his treatise of these examples, to place this remarkable affection on a much surer basis than it has hitherto had. The disease, indeed, will have more unique and special characters of its own and may be regarded with more justice in the light of a true discovery than Addison himself conceived and even more worthy to be honoured with his name than would a disease having the undefined nature which he himself assigned to it. I may at once admit that this want of definition and precision as to its true pathological character has constituted the great hindrance to the progress of the discovery; the belief of Addison being at the time of the publication of this work that any disease which affected the integrity of the suprarenal capsule would be attended by the remarkable phenomena which he described, and consequently his cases include a variety of morbid conditions of these organs which are clearly not true forms of the disease, and Addison, I believe, was beginning to see the truth of what is now evident that some of the cases which he had published have only stood in the way of the full development of his discovery, for all subsequent observations have shown that, so far from his early conclusions being correct, we have no recorded instance of the affection being connected with cancer, or, indeed, with any other kind of disease of the organ than the one which was found in the genuine cases which he first described, and which all subsequent experience has shown to constitute the true form of the malady. Unfortunately, too, Addison had placed in his work the drawing of a patient of whom no necropsy was made to reveal the true nature of the disease and that illustration has in all probability misled many by giving a false representation of the usual character of the discolouration of the skin.

"If these doubtful cases be eliminated from Addison's list there remain five which constitute a sufficient basis for his conclusions. I might say, also, that these were his early ones and those on which his own opinions were formed; it is therefore to be lamented that in the ardour of a fresh discovery he was led to include cases of which he had no opportunity of proving their genuineness. Fortunately for myself I was well acquainted with all the cases which Dr. Addison describes and have also had the opportunity of examining every subsequent example of it which has occurred in Guy's Hospital as well as seeing and discussing with the late lamented

physician many of his private cases, and I know, had he been spared to bring before the profession another edition of his work, he would have cropped his pages of those doubtful instances which have done much to retard the spread of the discovery. I may say, also, that Dr. Addison was in the habit of submitting to me all the specimens which he was constantly receiving from various parts of the country taken from patients who were supposed to have suffered from the affection bearing his name." "In clearing the ground of some of the extraneous matters which Addison introduced into his work the subject will stand much as I believe the author himself would have understood it at the time of his death."

I will now make a few remarks on these two positive statements, made many years ago, with regard to the uniform staining of the skin and the one disease only of the adrenal bodies—statements which have been reiterated by me on many occasions since. As regards the changes in the capsules it has always been surprising to me that anyone who has any knowledge of pathological processes should doubt my position. These changes, which may be in slow progress for years, must have their origin in the capsules themselves and cannot be due to any accidental affection which may alight upon them. The suprarenal disease, therefore, resembles in this respect the primary diseases of other organs, such as phthisis, cirrhosis of the liver, or Bright's disease. In these affections beginning from within there are certain symptoms due to the gradual impairment of the functions of the organ and we never think of looking for these symptoms if the organs have been accidentally attacked by a cancerous growth or hydatid. This shows how crude Dr. Addison's views must have been to have inserted a case of cancer because there was also present some discolouration of the axilla. I was in the habit of describing the true disease as one of inflammation of both capsules causing the production of an albuminous matter which subsequently softened or became cretaceous, and often ending in the disappearance of the organ, such as is sometimes seen in a lymphatic gland or the thyroid body. Before bacterial times we often called these cheesy organs "scrofulous" or "tuberculous." When I speak of this disease of the capsules as primary I include those cases where the inflammatory process has proceeded from caries of the spine.

And now I will state how the matter stands. Dr. Addison taught in his oral discourses that the discolouration of the skin was uniform and he was in the habit of saying that it could not be distinguished from that of a person of dark blood; he never said a word about white patches or vitiligo. I confess it is remarkable in a man of his scientific accuracy that he should have allowed himself to have inserted the case of leucoderma when it was brought before his notice by a man who had only a superficial knowledge of the disease which Addison had discovered. After the publication of his memoir the author continued to teach as heretofore, never saying a word about leucoderma, and when, as I have before stated, I showed him my paper objecting to the case he acquiesced in its publication. What I then said I have reiterated on numerous occasions for nearly half a century, during which time many cases of leucoderma have been sent me as supposed examples of Addison's disease. In no single case has this proved to be true.

Again, Sir William Gairdner speaks of the exhaustive treatise of Dr. Greenhow, written 25 years after Dr. Addison's first memoir, and says that the author makes no mention of leucoderma. What does he infer from this? Now with all this evidence of a remarkably uniform kind of 50 years I have referred to me a case which Sir William Gairdner on more than one occasion has mentioned as opposed to the doctrine which I have all my life maintained. I hold myself open to correction if there be other instances, but the only one to which he referred me and the hearers of his lecture was that which he saw in consultation with Dr. McCall Anderson and could be found in the work of the latter author. It is a pity that the case was not a more striking one for Sir William Gairdner's purpose and as accurately reported as the large series of cases which have hitherto come before me. In his case I do not understand that the patient was covered over his body with white patches as in Addison's drawing, for the history only speaks of the spots on the arms and backs of the hands, which parts had previously been the subject of eczema. Then, again, I consider the description of the capsules is very obscure, and as regards other organs it says: "*Kidneys.*—Both had the character of the large white kidney of Bright." Now Sir William Gairdner will surely agree with me that there is no exception to a law of nature and that the apparent exception must be explained by the discovering other circumstances operating to cause the peculiar result. Now I will not say that the statement I have made as to the nature of Addison's disease constitutes a similar law, but when the same clinical and pathological fact has been observed in thousands of cases without exception during a long series of years I do not think he will charge me with shuffling out of a difficulty when I criticise fully his adverse case and suggest that it is not a clear example of Addison's disease combined with leucoderma. The skin affection is not well described nor is the state of the capsules, and, moreover, the patient was the subject of Bright's disease—another novelty, as I do not remember in other cases to have found any disease but occasional phthisis. I feel sure that so philosophic a man as Sir William Gairdner could not wish me to accept on his authority so poor and obscure a case. Indeed, I should not have troubled the profession with this long communication had not the subject been brought before a society in London by the leading physician in Great Britain.

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## CARBOHYDRATES AND DISEASE.

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THE health of all living organisms is determined by two factors—firstly, by their environment, and secondly, by their inherent vitality, or in other words by their capacity to react to stimuli engendered by that environment. Disease, on the other hand, occurs through failure on the part of the organism to accommodate itself to its surroundings, or, otherwise expressed, because the stimuli are excessive, sub-minimal, or absent. Health or disease are therefore determined by the ratio between the stimuli and the power of the organism to respond. The environment may be considered to include all material that can be classed as food, such as solids, liquids, and gases which contain the chemical elements, or groups of elements, necessary for metabolism, and all those physical stimuli, such as heat, light, &c., which are requisite to set the metabolism in motion.

In a complex multicellular organism such as the human body, under the central administration of the nervous system, accommodation to its surroundings is effected in a manner which, from the standpoint of physiological economy, is most advantageous to the individual as a whole, and through its agency the tissues are mutually enabled to coöperate, and in times of stress to afford reciprocal assistance the one to the other. For instance, should the food-supply fail the coördinated action of the central nervous system will administer to the wants of the more vital organs at the expense of those which subserve less important functions; and, on the other hand, in the presence of excess will effect the disposal of those portions which are unnecessary for the performance of useful functions in a manner least inimical to its general well-being. Through want of more complete knowledge it is impossible to predict in any given case what method or methods the organism will adopt to secure the removal of material which it does not require, but reliance may be placed on its perspicuity to select the path of least physiological resistance and that which in its ultimate operations is most conducive to the maintenance of life. The following is an incomplete summary of the more usual methods on which the organism relies for the disposal of supplies which are not requisite for ordinary physiological purposes. 1. Complete metabolism by the tissues, with removal by the excretory organs (luxus consumption). 2. Loss of appetite, vomiting, diarrhœa, and protective coating of the absorbing surfaces with excess of mucus. 3. The metabolism of the food into incompletely oxidised end products and their removal from the body with more or less detriment to the organism. 4. Growth of normal tissues (hypertrophy), and growth of degenerate tissues (mucoid, amyloid, adepoid), new growths (tumours,

granulations), and leucocytosis. 5. Loss of tissues, discharges (purulent, mucous, serous, &c.), and hæmorrhage. 6. Active metabolism with the production of heat (fevers). 7. Development of kinetic energy, restlessness, spasms (tonic and clonic). 8. Parasites. An attempt to deal with these various methods would necessitate a review of the whole domain of medicine. We propose, therefore, in the present paper to confine ourselves solely to the method which is included in Group 3—that is to say, the disposal of excess of circulating material through more or less incomplete metabolism by the tissues; the removal of the incompletely metabolised end products involves certain pathological consequences, which we propose in due course to examine.

The living proteid molecule (biogen), into which highly complex body all assimilated food is ultimately resolved, undergoes, as an expression of its restless vitality, continuous explosive metabolism, whereby atomic groups, more or less simple in character, are discharged from the primary nucleus and oxidised in the presence of oxygen with the liberation of energy. The cleavage products are replaced by corresponding or equivalent elements from the surrounding nutrient media. Under favourable conditions the atomic groups which are thus shed by the biogen molecule consist partly or chiefly of the ultimate metabolites, carbonic acid, ammonia and water, which for purposes of safe removal from the system are further combined into urea (a practically harmless amido-acid) and carbonates, the bases for which are obtained from the circulating tissue juices and the blood. Such an ideal result is, however, seldom obtained; the biogen molecule from want of a sufficiency of oxygen, or from deficient vitality, parts with larger atomic groups than carbonic acid, ammonia, and water, and such bodies as glucose, lactic acid, glycolic acid, oxybutyric acid, acetic acid, propionic and formic acids may under these circumstances be produced. It is still a matter of uncertainty whether these bodies are cast off in their complete form from the biogen molecule or whether they are partly the result of synthetic processes. In any event the sum total of the energy liberated will depend rather on the nature and size of the atomic groups than on the method of their production.

From a physiological and economic standpoint it is difficult to define precisely whether the cleavage of large atomic groups is a conservative or a wasteful process; but presumably, when there is no demand for energy, as, for instance, in an overfed and underworked individual, it is a conservative method; or otherwise, with the complete combustion which goes hand in hand with the liberation of the final end products, carbonic acid, ammonia, and water, there would be a great development of heat and possibly that condition of hyperpyrexia which is characteristic of the riotous metabolism of certain cases of fever. On the other hand, with the development of useful energy, such as occurs when the voluntary muscles are brought into play, and when the oxygen supply is at its maximum, owing to the harmonious coöperation of the circulatory and respiratory systems, it is probable that the biogen molecule extracts to the uttermost unit the energy supplied by the circulating media, or by its own substance, and by a process of rigid economy parts with atomic groups, such as carbonic acid, ammonia, and water, which in a physiological sense are inert and useless bodies from which no further energy can be extracted. At present, however, we are concerned with the cleavage from the biogen molecule of the larger atomic groups such as occurs with deficiency or absence of oxygen—namely, dextrose, lactic acid, and allied bodies. Dextrose, as is well known, may be removed by the kidney without further change, and its presence in the urine is associated with the condition known as diabetes. With regard, however, to the acid products of metabolism it must be remembered that the circulation refuses to deal with such bodies without neutralisation, and hence their affinities for bases must be satisfied at the expense of the potassium or sodium circulating in the blood or tissue juices, or at the expense of the ammonia, which is concomitantly liberated in the act of metabolism. As a matter of fact, the neutralisation appears mainly to be effected by the substitution, in the acid molecule, of one ($NH_2$) group for one atom of hydrogen with the formation of amido-acids, such as glycocine (amido-acetic), tyrosin (amido-oxy-phenyl-propionic), leucin (amido-caproic), sarcosin (methyl-amido-acetic), cystin (amido-lactic in which one atom of H is replaced by HS), and uric acid (possibly by various methods). The amido-acids are bodies of the nature of weak bases, and they can be removed by the excretory organs without serious consequences. We cannot here discuss the question whether these amido acids are formed *in situ*, or whether the free acids are neutralised by bases (such as Na, K, $NH_4$) and subsequently converted elsewhere into amido-acids, but in any event the question does not affect the argument of this paper.

Now, the formation of harmless amido-acids out of noxious free acids creates a demand for nitrogen or ammonia, which the biogen molecule may be unable to spare, for of all elements nitrogen is the most essential to the living proteid molecule; and should it be unable from failure in the supply to obtain enough from outside sources its very existence may be jeopardised; hence, instead of parting with ($NH_2$) for the neutralisation of the free acids, this radicle may be again taken up into the original biogen molecule to form, in conjunction with material taken from the floating supply of carbohydrate, new protoplasmic substances. The amount of nitrogen which can be spared from the biogen molecule must be dependent on the floating supply of nitrogen containing foods; hence we may sum up the position by saying that the formation of harmless amido-acids out of noxious free acids is dependent on an adequate supply of nitrogen-containing food.

There is now the further case to consider of an excess in the floating reserve of nitrogen-containing elements as compared with those that are nitrogen-free. In such an event there will be no difficulty in supplying ($NH_2$) radicles for the neutralisation of the acid products, but rather a demand for carbon, or carbon-containing groups, to satisfy the affinities of the free ammonia. Under these circumstances we should expect to find a tendency for the production of bodies in which the relative proportions of carbon and nitrogen were more or less evenly balanced, and, as a matter of fact, that is exactly what takes place when there is an excessive ingestion of nitrogenous food, for the following bodies are found in the urine: uric acid ($C_5H_4N_4O_3$), xanthin ($C_5H_4N_4O_2$), guanin ($C_5H_5N_5O$), creatin ($C_4H_9N_3O_2$), and creatinin ($C_4H_7N_3O$).

We may therefore say that, with defective metabolic and oxidative processes, large atomic groups are shed from the biogen molecule, which contain no nitrogen (free acids, such as lactic and glycolic), a small quantity (amido-acids), or a large quantity (uric acid, guanin, xanthin, &c.), according as the nitrogenous diet compared to the non-nitrogenous is deficient, moderate, or excessive. Hence it follows that, under like conditions of metabolism, an absolute or relative excess of non-nitrogenous material (carbohydrates) as compared with nitrogenous (proteid) will promote the formation of free acids such as lactic acid, &c., which after neutralisation will be set free in the circulation.

The group of symptoms associated with the defective metabolism of nitrogen-containing bodies has long been known as gout or lithæmia; the group of symptoms associated with the defective metabolism of non-nitrogenous substances has been dignified by no special title, except in the extreme cases of glycosuria and diabetes. It seems, however, hardly logical to suppose that an organism which is phylogenetically to a large extent carnivorous should be the victim of symptoms and diseases which are exclusively due to the defective metabolism of food by nature intended for its consumption, and that it should be immune from symptoms, however much it may trespass on the food domain of the herbivora.

We propose now to investigate the symptoms which may arise through the defective metabolism of non-nitrogenous material and to take up the history of the cleavage products from the point at which we left them—namely, waiting for neutralisation and removal at the seat of production. Now it is quite clear that if these bodies are not neutralised by ammonia to form amido-acids, or salts of ammonium, they cannot with physiological safety be removed in the condition of free acids; hence as expeditiously as possible they seize hold of such bases as sodium or potassium from the circulating media and satisfy their affinities at the expense of neutral or alkaline salts. Thus neutralised they can enter the circulation, which is itself reduced in alkalinity, in direct proportion to the amount of bases taken up by the acids. After they have effected an entrance into the circulation these neutral bodies can travel here and there until they meet with suitable conditions for their removal. We propose to take the lactates as representing a type of the various salts, which we have shown are a sequence

of excessive carbohydrate metabolism, since it is impossible to follow each in its more or less similar path of excretion.

The kidney, which is *par excellence* the excretory organ of nitrogenous refuse, does not appear to play any important part in the removal of lactates from the system, for they are seldom found in the urine, although the blood normally contains an appreciable, and at times an excessive percentage. Active glands, such as the liver and spleen, and those of the skin and mucous membranes, are probably the situations in which these products are most effectively dealt with. The skin is particularly active when the muscles are contributing a large proportion of free acids, and at times (rheumatic fever) free lactic acid has been detected in the sweat. Both in this situation and elsewhere, when metabolism is active and the oxygen supply is abundant, the lactates are oxidised to carbonic acid and water, and at the lung surface with a copious secretion of mucus various representatives of the series are found in the condition of free acids. Lactic acid is so frequently detected in the gastric juice that it is reasonable to suppose that its origin is the blood stream, and not decomposing ingesta. Such, then, are the normal methods whereby the excretory processes keep pace with the supply. Nevertheless, should any important excretory agency, as, for instance, the skin, be thrown out of action, and fail to take its share in the process of elimination there will be a proportionate increase of strain on those organs which remain to do the work. The more slowly lactates are burnt off the greater will be the accumulation in the circulation and the lower the alkalinity of the blood and tissue juices; free acids will with difficulty be neutralised, and the strain on all internal organs will become increasingly severe as the vicious circle of events extends more and more widely. Under such conditions signs of breakdown or failure may be evidenced in those organs or tissues which are functionally least able to meet the difficulties. Fibrous tissues may become inflamed and mucous surfaces hyperæmic and catarrhal. The system in its efforts to rid itself of potential sources of dangerous metabolites may hastily improvise and cast off in their entirety large quantities of emasculated protoplasm, such as mucin, which is a hybrid proteid containing a large proportion of carbohydrate. In this connexion it is deserving of consideration whether iodine and iodides, owing to their capacity for bringing mucin and mucinoid bodies into a state of solubility in the system, may not have important bearings on the treatment of such diseases (myxœdema, &c.) as may be due to the clogging of the tissues by this compound carbohydrate. In any case there is ample clinical evidence to show that iodine and its salts act as powerful eliminants.

For purposes of illustration we shall now take the hypothetical case of an organism, such as the human body, hampered with excess of carbohydrates—a condition which we propose to call "glycosachthæmia" [γλυκός (sweet), σακτός (crammed), and αἷμα (blood)]—and follow in detail the means that will be employed to get rid of this superfluity of food, and the symptoms that will be produced in the process of its removal. For the sake of convenience we propose to take first the case of young and growing tissues, since, under these conditions, vitality will be at its maximum, and we should expect, therefore, that the difficulties of dealing with an excess of food would be most effectually overcome. We should be prepared to find that an infant, given opportunities of absorbing an excess of carbohydrates from the alimentary tract, would, after satisfying the present needs of growth, activity, and heat production, first store the surplus in the liver and other tissues in the form of a reserve material (glycogen). So soon as storage in this direction has reached its physiological limit the excess of circulating carbohydrate would be laid up in the form of a more or less degenerate tissue (such as fat), or would be excreted after complete or incomplete metabolism. The more nearly the physiological limit of fat deposition is approached the greater would be the amount of circulating carbohydrate, and hence the larger would be the sum total of the end or intermediate products derived from its metabolism. We have previously shown that with deficiency in the supply of oxygen (determined by respiratory, circulatory, and hygienic conditions) there is an increase in the proportion of the intermediate end products (in the form of lactic acid, glycolic acid, &c.) as opposed to normal end products, and *ceteris paribus* with a deficiency of $NH_3$ (consequent on an insufficient supply of floating proteid) there is an increase in the proportion of these products (in the form of free acids) let loose in the circulation. In an infant, therefore, who is absorbing a large excess of carbohydrates (a process that is facilitated by the solubility of these substances), and in the absence of an adequate supply of oxygen, as well as of proteid (proteid is not readily digested and absorbed by infants), we should expect to find an excess of lactic acid (in the form of lactates) and other acids (in the form of salts) in the system. Moreover, if this excess of lactic acid, &c., be admitted we should expect to find evidence of some attempt on the part of the organism to get rid of it. We should anticipate, therefore, hyperæmia and enlargement of the liver and presumably of the spleen. The skin should show evidence of activity in the form of free perspiration; and should this large and important metabolic surface be thrown out of action (by chill, &c.) we should be prepared to find that a more severe strain is thrown on the other tissues which have been coöperating in the oxidation and elimination of the end products of the carbohydrate metabolism. The mucous membranes would show signs of strain by excessive hyperæmia and mucous secretion, and this would be shown clinically by attacks of bronchitis, pharyngitis, tonsillitis, enteritis, colitis, &c. The liver and spleen would exhibit additional hyperæmia and enlargement. The epiphyses of bone, centres of enormous protoplasmic activity in infancy, would become hyperæmic, and the thymus and lymph glands might share in the general increase of vicarious metabolism. When the increase of excretory activity, as evidenced by the hyperæmia of the tissues which we have mentioned, with the coöperation of a deficient supply of oxygen, fails to keep pace with the supply of the circulating end and intermediate products of carbohydrate metabolism, signs of irritation should be demonstrable in the nervous system in the shape of irritability, restlessness, and convulsions, &c. The muscular system should be inactive and flabby from what is tantamount to the condition produced by fatigue. Fever would be present from excessive metabolism, and those micro-organisms which live upon saccharine substances might find a nidus on the free mucous surfaces (thrush). So far as the fibrous tissues are concerned we should expect some hyperæmia which in the young and growing condition of these structures would be sufficient to enable them to cope with the local difficulties of metabolism, and these, by nervous coördination, would not be of a severe kind. As the glycosachthæmic infant in due course develops into the child, with the evolution of the muscles of locomotion and the concomitant stimuli to the circulatory and respiratory systems, which this change engenders, we should expect to find evidence of a general abatement of the symptoms. At the same time the gross improvement must be somewhat discounted by the general but gradual fall in protoplasmic activity, which throughout the body bears, roughly speaking, an inverse ratio to the age of the individual. In consequence of the defective ossification of the skeletal system which has been brought about by the continued hyperæmia of the active epiphyses (compare Kassowitz's experiments) with lowered alkalinity, and possibly occasional acidity of the surrounding tissue juices, we should expect to find gross modifications in the morphological structure of the osseous tissues in accordance with the mechanical strain exerted upon them by the muscles and body weight. Furthermore, we should expect to get enlargement of the epiphysial ends of the bones. For similar reasons the teeth will late assume that degree of calcification which is necessary for their irruption through the gums and the permanent teeth will show structural modification and may eventually become carious. The fibrous structures, owing to the proliferation of cells which is the physiological sequence of hyper-nutrition and minimal irritation during the active period of their growth, will show signs of laxness and stretching. The joints will be inadequately supported and later there may be signs of fibrosis where growth is almost at a standstill, where the circulation is most feeble, and where there is exposure to pressure or injury (fibrous nodules in the neighbourhood of bones and joints, nodules in the endocardium, and cardiac valves). The capsule of the eyeball and the suspensory ligament would share in the general laxity of the fibrous structures, and herein may lie the explanation of the myopia so often observed in rickety and unhealthy children. The connective tissue of mucous membranes long subject to catarrh may

show evidence of extensive thickening (adenoids, &c.). The nervous system may give way under the long-continued strain, and choreic symptoms, consequent on cerebral irritation, may develop. Moreover, the fibrous lining of the cranial cavity and membranous envelopes of the brain may, along with other fibrous structures, show signs of undue irritation (meningitis). During the early period of childhood chill to the integuments will intensify the symptoms due to the irritation of internal organs and develop acute catarrhs and fevers. As adolescence is reached and passed with concomitant cessation of active growth, the tissues will be less able to deal with the excessive nutriment which is the characteristic feature of the glycosachthæmic condition. Unless, therefore, the muscular system comes into active coöperation with the other excretory organs those tissues will suffer which are least able to cope with the excessive supply of nutriment and the intermediate end products of partial carbohydrate metabolism. We should now expect the fibrous tissues to give early evidence of their inability to deal effectively with these imperfect metabolites. Minimal irritation, which in the case of their embryonic, or young and growing antecedents produced proliferation of cells and increase of growth, now necessitates the adventitious assistance of leucocytes. By positive chemotaxis the migration of white cells may be determined, or, in other words, inflammation produced. Chill will now produce the symptoms of acute inflammation of the fibrous tissues of the joints, endocardium, and other parts, with the development of high temperature. Moreover, there seems no reason why the pyrexia which arises under these circumstances and the vicious habits of metabolism thus engendered should not continue until the combustion of the stored-up carbohydrate material is complete and the end products eliminated from the system. Furthermore, the duration of the fever cannot be measured by the period requisite to get rid of the carbohydrate material only, since the proteid and hydrocarbon food-stuffs (both floating and fixed) must of necessity share in the oxidative processes and thus by saving carbohydrate metabolism prolong the course of the fever. Moreover, in accordance with the recognised dietetic treatment of fever, additional fuel for combustion is provided with unfailing regularity. Again, under the circumstances which we are considering we should expect that occasionally, as the result of long-continued strain or diminished vitality, the synthetic processes connected with catabolic metabolism would fail and the consequent riotous metabolism of the biogen molecule would give rise to hyperpyrexia. The more active the skin and mucous membranes the less will be the intensity of the symptoms due to hyperæmia or inflammation of other tissues. At the same time the skin and mucous membranes under continued stress of work will ultimately show signs of wear and tear. The skin will be hyperæmic and will show a tendency to the development of eruptions—i.e., erythema, purpura, eczema, psoriasis, acne, &c. The respiratory mucous membrane will give evidence of catarrhs (tonsillitis, bronchitis, asthma, pneumonia, &c.). The tongue will be furred and the stomach and intestines possibly coated with excess of mucus. The fibrous tissues of the joints, endocardium, &c., will become acutely inflamed, but we should expect that the endocardial tissues would suffer less than other fibrous structures, inasmuch as they are continuously bathed by a more or less alkaline fluid (the blood). The muscles will give evidence of debility or "fatigue." Hollow viscera will become dilated (the heart, &c.) and the skeletal muscles toneless and weak. The nervous system may develop signs of instability (neurasthenia or even neuritis, epilepsy, &c.). The more chronic manifestations of the glycosachthæmic condition in adult life would be skin eruptions in the form of psoriasis, erythema, acne, eczema, &c. Inflammatory conditions of the respiratory system of a sub-acute type, such as tonsillitis, bronchitis, asthma, &c., would be of common occurrence. We should also expect chronic inflammatory conditions of the fibrous tissues surrounding the joints and other parts. In debilitated conditions glycosuria might possibly occur. With the advent of late middle life and old age when metabolic processes become less and less active, and when in consequence of the hampered condition of the respiratory and circulatory systems oxygen with difficulty reaches the tissues, the biogen molecule may cast off even larger atomic groupings than lactic, glycolic, and similar acids. Under these circumstances glucose and acetone may be shed in their entirety. A strain is doubtless thrown upon the kidneys, but the organism may be temporarily spared for the continuance of a useful existence. Owing to the inhibition of oxidative and catabolic processes the temperature would be low until such time as, in the general break-up of the tissues, chemical affinities are loosened with the liberation of energy in the form of heat and the ultimate destruction of the organism as a corporate body. Before this stage is reached the general interference with nutrition would provoke a more or less widespread degeneration of the tissues, and the possible growth in various organs of micro-organisms which thrive in a saccharine medium.

The hypothetical pictures that we have drawn of the general condition of glycosachthæmia during the various stages of infancy, childhood, middle life, and old age are practically those of the clinical conditions known as rickets, the rheumatic state of childhood, rheumatism, and diabetes; and although, viewing the matter from the standpoint of established facts, it is not always easy to prove that the one condition is an antecedent of the others, nevertheless there is a certain amount of evidence to show that such an assumption is reasonable, and the evidence that we have so far obtained is entirely in harmony with this view. In the case of rickets it is nearly always easy to prove that there has been a great excess of carbohydrate food, and although in the case of rheumatism and diabetes it is easy enough to shelter oneself behind a plea of relative excess, on inquiry it is usually possible to obtain evidence of carbohydrate indulgence which in many cases may be termed "gross." Rheumatic subjects, at any rate before the emaciating effects of defective circulation come into operation, are mostly well-nourished and often fat; and they are liable to exacerbations of the symptoms at times of forced inactivity, after periods of healthy energetic life, and when a good appetite remains to them, although its legitimate stimuli may be in abeyance. Soldiers proceeding on sea voyages, vigorous from regular exercise, are especially liable to attacks of rheumatism and pneumonia, and Londoners returning to town after their holidays nearly always contract a "cold." Athletes when they go out of training, unless they can physiologically protect themselves by a rapid deposition of fat, are liable to various ailments, such as may be readily explained by a condition of glycosachthæmia. Conversely, starving people rarely contract diseases of this type, and most striking evidence can be drawn from the present war in South Africa; in Ladysmith and Mafeking the semi-starved defenders were exposed in trenches half full of water to the sudden changes of temperature which characterise the autumn and winter months, yet rheumatism was conspicuous by its absence, especially towards the end of the period of siege when one may suppose their tissues were depleted of all carbohydrate reserve. In this respect the experiments by Araki[1] and Irisawa[2] in Hoppe Seyler's laboratory are of the utmost importance, for they have shown that in the case of animals lactic acid is produced in excess when the oxygen supply is curtailed, and that when the supply is minimal even dextrose may appear in the urine; but in the case of starving animals, however much the oxygen supply is reduced, no dextrose appears in the urine nor is the percentage of lactic acid in the blood increased.

Further evidence can be adduced from the field of therapeutics, for those measures which are known to be effective in the case of rickets, rheumatism, and diabetes are those which would be rationally prescribed for persons suffering from saturation with carbohydrates. Milk diet, or, in other words, semi-carbohydrate starvation, is the universal panacea for rickets and rheumatism, and in diabetes there is no more efficacious treatment. In chronic rheumatism our own experience, which is amply confirmed by others, goes to show that the effects of the "Salisbury treatment" (total carbohydrate starvation) are sometimes almost sensational in their efficacy. All those drugs which encourage the activity of the skin are of value in rickets, rheumatism, and diabetes. Purgatives by the rapid removal of ingested food are recognised as essential adjuncts to all lines of treatment, and alkalies hold a time-honoured position in the treatment of all these complaints.

[1] Zeitschrift für Physiologische Chemie, vol. xv., p. 335, and vol. xvi., p. 201.
[2] Ibid., vol. xvii., p. 340.

By neutralising the acid products and thus assisting in their elimination their action is in harmony with our view. Salicylates above all drugs are specifics of rheumatism and are said to be useful in diabetes. We firmly believe that they are strongly indicated in rickets, though as yet we have had few opportunities of estimating their value. On our hypothesis they are of value in the treatment of rheumatism because they combine with that atomic group which in the break-up of the biogen molecule is a fore stage of lactic acid, glycocene, and perhaps other bodies.[3]

$$C_6H_4\begin{cases}OH\\COOH\end{cases} + CH_2\begin{cases}OH\\CN\end{cases} = \begin{matrix}C_6H_4\\CH_2\end{matrix}\begin{cases}OH\\CNOH\\COOH\end{cases}$$

Salicylic acid. Methene cyan-alcohol. Salicyluric acid.

They are of less value in diabetes because the entire dextrose molecule is separated from the biogen molecule and requires no neutralisation. They are of value in such cases by preventing the formation of certain by-products which are usually found in company with dextrose in the urine. With regard to the use of salicylates it must be remembered that the maximum effect is only obtained when they are given in large doses; large doses would obviously be required if our view is correct.

In the attempt which we have made to establish a causal connexion between excessive carbohydrate ingestion and the incidence of disease we have avoided for the most part making an appeal to the evidence derived from clinical experience. Our reason for this obvious omission is that our complete recognition of the essential features which underlie the theory which we have advanced, is of such recent growth that we have not yet had time to accumulate clinical testimony in sufficient amount to carry weight in support of our contention. Nevertheless, the observations which we have thus far been enabled to make on the clinical side of the subject are in complete harmony with the conditions which on theoretical grounds we should expect to obtain. Furthermore, we may point to the clinical experience of such keen and original observers as Rabagliati and Keith which lends strong support to the views which we have enunciated. Rabagliati gives convincing proofs of the evils which may be wrought by the over-ingestion of carbohydrates, and Keith, in his advocacy of the therapeutic efficacy of starvation (so-called) in the treatment of disease, supplies indirect evidence in support of our contentions.

Although we have endeavoured to clearly distinguish between the condition known as lithæmia or gout, and the one we have termed glycosachthæmia, we have not attempted to indicate the effects which might be produced by the possible action and interaction of their respective metabolites. That such reaction and inter-action between the metabolites of these conditions does take place there can be little doubt with the production of disease, which in its pathological significance combines in varying degrees the features common to lithæmia on the one hand and glycosachthæmia on the other.

Although it cannot be asserted that we have advanced any convincing proof of the existence of the condition which we have termed glycosachthæmia we venture to hope that the evidence which we have brought forward will serve to stimulate other observers to investigate the subject. For our own part we feel convinced that further inquiry will serve to strengthen the views which we have advanced in this paper and to establish the theory of glycosachthæmia on a firm foundation of fact.

[3] P. W. Latham: Croonian Lectures, 1886.

**BRENTRY HOME FOR INEBRIATES.**—At the meeting of the Gloucestershire County Council held on July 10th it was reported that this home was now contributed to by 23 county and borough councils to the extent of £25,000. This involved a provision of 104 beds for women and 73 for men. When their arrangements were completed there would be 183 beds against the required 177. Up to the present 58 cases had been admitted.

**CARDIFF INFIRMARY.**—At a meeting of the Executive Committee of the Cardiff Infirmary, held on July 17th, it was decided to recommend to the governors of that institution that the appointment of general superintendent be vested in the resident medical officer and that the duties of the secretary be solely confined to secretarial and financial work.

# THE WAR IN SOUTH AFRICA: JOTTINGS IN BURGHERSDORP.[1]

BY HERBERT CAIGER, M.B. LOND., F.R.C.S. ENG.

I WAS in Burghersdorp during the Boer occupation of the town and saw a number of the wounded after the battle of Stormberg.

THE BATTLE AT STORMBERG, DEC. 10TH, 1899.

At this battle General Gatacre's forces met with a serious defeat, losing 650 men as prisoners. About 70 of these prisoners were wounded and they passed through Burghersdorp on their way to Bloemfontein. 24 of them were kept at Burghersdorp for a month or more in an extemporised hospital arranged by the British residents at the request of the Free State authorities. Many of the wounds were trifling in nature, and 18 of these men marched 20 miles from Stormberg to Burghersdorp on the day following the battle and the remainder were brought to Burghersdorp by ox wagons at different dates. Half of these would be fit for service within a month. The transport by ox wagon was bitterly complained of, the jolting over the rough roads having caused much aggravation of painful wounds. One man's chest was blistered by the heat of the sun, the wagons being uncovered. The wounded officers were brought to Burghersdorp in covered carts. The wounded men spoke well of the treatment which they had received from their Dutch captors at Stormberg.

On the battlefield the men were attended by two medical men who went out from Burghersdorp on the chance of being of some use. The men were anxious to know whether they would be attended by English practitioners, and they were very pleased to hear that there were none but English medical men in Burghersdorp. The nursing in the hospital was done by English (male) residents and refugees from the Republics. The school building was used for the hospital and came to be used more or less as a club as most of the Englishmen of the place met there, as it was almost the only place, with the exception of the private houses, where it was considered safe to speak freely. The amateur male nurses worked well in watches of three hours at a time. There were but few cases which required skilled nursing. Lord Roberts subsequently wrote to the mayor of the town thanking the British residents of Burghersdorp for all that had been done for the wounded and prisoners who passed through the town.

*An interesting cerebral case.*—A private who had been shot through the head completely lost his memory of events preceding the battle. There was no paralysis. A Mauser bullet had entered at the outer end of the left eyebrow and had passed out on a level with the occipital protuberance about an inch to the left. When seen 10 days after the wound of entrance was perfectly healed and difficult to see. The exit wound was still covered by a small scab. He had a dazed look, and when asked questions would reply, "I cannot rightly mind that, sir." He remembered one thing in his past life. He said that he was married and that his wife was married too. This latter statement he is said to have reiterated again and again shortly after the battle. With this exception he remembered nothing of his past history, and did not regain his memory up to the time when he left for Bloemfontein, 40 days after the injury. His memory for events after the battle seemed to be fairly good.

*Nerve injuries.*—The men who seemed to suffer most and longest were those who had wounds involving nerve trunks. I had three of these patients under my care for several weeks, and it was sad to see the agonies they suffered. Morphia in large doses was the only thing that gave any relief to the pain. A sergeant had an oblique flesh wound of the thigh which healed by first intention, but pain came on about 14 days after the injury. He had had severe hæmorrhage immediately after receiving the wound which he stopped by means of an improvised tourniquet which was left on for 36 hours. Possibly this may have had something to do with the causation of the pain. The pain was felt in the outer side of the leg below the knee and in the toes. There was no evidence of any paralysis, and, indeed, the man had been up and about for several days before the pain

[1] An abstract of Dr. Herbert Caiger's article which appears in the August number of the Phonographic Record of Clinical Teaching and Medical Science.

came on. The pains continued for a long time and were still very severe when he wrote from Cape Town in April. No operation was done. In the two other cases there was marked paralysis and wasting of muscles. In one some cord of the brachial plexus was probably injured, and in the other the median and ulnar nerves were injured by a wound about the middle of the arm. In both these cases the pain came on on the day of the battle and was intense from the first. The operation in one of the cases was performed at Bloemfontein, and with relief to the pain.

*Fatal mental disease following severe wounds.*—An officer was wounded by shrapnel fired by our own artillery. The nature of the wounds necessitated amputation of one leg and some of the fingers of each hand; he had also several wounds of the trunk, and for some time was not expected to live. He recovered so far, however, that he was removed to the hospital at Burghersdorp some weeks after the battle. The wounds healed completely, but he continually brooded over the disaster at Stormberg, which troubled him much more than the mutilation he had suffered from, and at length he died from acute mania. Shortly before his death the Free State Government had granted his release in return for a wounded commandant who had lost one of his legs after the battle of Elandslaagte and was released by Lord Roberts. The officer was dying when the news of his release arrived and he could not be moved. His body was taken back to the British lines where he was buried by his comrades with military honours. This was the only death which occurred among the wounded prisoners who were brought back to Burghersdorp from the battle of Stormberg.

*Septic cases.*—The proportion of septic cases to the whole number of wounded was small. The worst case was a wound involving the mouth. The bullet entered at the angle of the mouth and passed backwards and slightly downwards, emerging at the back of the neck about an inch from the middle line. It had ploughed along the inside of the cheek, knocked out a lower molar, broken some fragments off the lower maxilla (which came away at a later date), and perforated the posterior wall of the pharynx. This man's mouth was in such a foul condition when he arrived at Burghersdorp, four days after the battle, that he had to be placed in a separate ward. After the separation of some very foul sloughs the mouth wounds healed, but he then developed a deep abscess in the sub-maxillary region. This was opened just before he left for Bloemfontein, nearly six weeks after the battle. Many of the wounds were inflicted by Martini-Henry bullets, and, of course, the wounds were more severe than those caused by Mauser bullets and a greater number of them suppurated. Many of the shrapnel wounds, on the other hand, remained quite aseptic. A compound fracture of the lower end of the ulna from a shrapnel bullet, which was under my care, did perfectly well.

### PHYSIQUE OF THE BOERS.

I have had the experience of six years' practice among the Boers of the Jacobsdal and Burghersdorp districts, and am of opinion that in comparing the Boers with Tommy Atkins the advantage is on the side of Tommy. The Boers are more used to out-of-door life and irregular meals, they suffer less from syphilis, and they are more independent and more accustomed to act on their own responsibility, but, on the other hand, although the average age might not be very different, the Boer ranks include many below as well as above the age limits which obtain in the British army. I have seen a boy of 11 years of age brought by his father on commando from the Free State. There were many under 16 and 17 years of age, and many over 40 years of age. Men suffering from organic disease, such as of the heart, which would unfit them for any unusual fatigue went on commando. The Boers who were commandeered in the district in which I lived were not subjected to any medical examination to prove their fitness for service, and in one case I gave a certificate of unfitness for service to a man with phthisis partially arrested but still with extensive signs in one lung, but the certificate was disregarded by the officials and the man was sent to the front, where he took part in a reconnaissance which took up 22 hours and completely knocked him up. A few days later the man obtained another certificate from a Free State surgeon, for which he paid a guinea, and was then allowed to return home.

### OVERWORKED TOMMIES.

There can be little doubt that the cause of the disaster at Stormberg was bad generalship. The men were tired out before the fight began. During the retreat, after the battle, many of the men are said to have dropped down and fallen asleep from sheer fatigue. It is said that many who were taken prisoners there were found lying fast asleep in their trenches. The prisoners told us that they had marched all the night before the battle and had had very little sleep during the preceding night. Notwithstanding this, and the fact that all the advantages of position were with the enemy, some of the Boers themselves admitted that our men had made a good fight. Had it not been for the loss of their leaders at a critical moment through the mistake of our own artillery, many think that the result of the battle would have been very different. Of course, on special occasions men must have severe strain put on their powers of endurance, but there is a limit, and from all I have heard this limit was much exceeded in the operations ending in the battle of Stormberg. Further, I have heard that it was the practice of the officer commanding a regiment recently stationed in this neighbourhood very frequently in the mornings to take the men a long march to the top of some stiff hill before breakfast, bringing them back so fatigued that when breakfast time arrived many of them had no appetite for it. This sort of thing would be well enough once in a way, but to make a frequent practice of over-fatiguing the men before they have had any food would hardly improve their fitness for service.

### SANITARY ARRANGEMENTS—BOER AND ENGLISH.

The absence of proper sanitary regulations in the Boer laager at Stormberg was a disgrace to any nation that pretended to civilisation. Dead animals and the remains of slaughtered sheep and oxen lying about unburied caused a terrible stench. In the offices and waiting-rooms at the railway stations all sorts of refuse were allowed to accumulate, and in some instances dead horses were left behind inside the railway offices. There was a good deal of sickness and at least two fatal cases of enteric fever occurred among the Boer forces at Stormberg. At the same time the sanitary arrangements for our troops who were stationed in, or who passed through, the district were not free from reproach. At the Bethulie Bridge camp the stench along the river bank and for some considerable distance from the river was bad. The same thing was noticeable at Sterkstroom camp. At Burghersdorp station at the time when large numbers of troops were passing through, according to the stationmaster on more than one morning the station yard was in a disgusting state. These things ought not to be. Proper sanitary arrangements for large bodies of troops in transit may be difficult to arrange, but surely some steps could be devised which would obviate such a state of affairs as that just mentioned. With reference to the camps there is less excuse; either the sanitary arrangements must have been at fault, or the discipline for their proper enforcement must have been lax. Many of the cases of typhoid fever which have occurred among our troops lately may have been unavoidable—for instance, in the case of the men surrounding Cronje's laager at Paardeberg—but other cases have probably occurred which might have been avoided by more attention to sanitary arrangements and stricter discipline in this matter. At Bethulie Bridge the water from the Orange river was used for drinking purposes. My opportunities for observations regarding military sanitary arrangements have been confined to this district. It is to be hoped that elsewhere matters were better regulated.

### THE OBJECT OF THE WAR.

From the talk of the farmers and Free Staters there is no doubt that the object of this war was aggressive not defensive—to get rid of English authority and government from the whole of South Africa. At a Bond meeting held in this district about a year ago one speaker said that he prayed that the day might come when the whole of Africanderdom would be free from the foreign yoke. No one made any protest against this statement. One of the Free State commandants addressing a number of recruits on the market square of Burghersdorp last November said, "We have come to assist you in throwing off the foreign yoke." Very little was heard of saving the independence of the Republics, but the common talk among the farmers was of "cleaning the land" or "driving the British into the sea." The Dutch farmers were urged to join in a triumphal progress through the colony, in which no serious opposition was expected from any British troops. They were told by Free Staters that it would be only a matter of a few weeks and that in

every district which they reached they would be joined by large numbers of Africanders, and they talked of drinking champagne in Cape Town over their conquest within a month. With the great majority of the burghers their confidence of success was absolute. One burgher said that after they had killed all the English soldiers General Joubert would hire a ship and they would send him and his men to England to fetch "Victoria" out of her house and bring her to the jail at Pretoria.

BOER NEWS—OFFICIAL AND OTHERWISE.

An information commission at Bloemfontein sent out official telegrams recording the progress of the war. On the whole the news was reliable, but in one point these official telegrams consistently perverted the truth. They grossly exaggerated the casualties on the British and always understated those on the Republican side. For instance, after Belmont the official telegram stated the Boer losses as ten killed and 40 wounded, and said that the British losses were estimated at far in excess of 2000. In this instance they seem to have divided their actual losses in killed by ten whereas they multiplied ours by about the same figure. Current gossip exaggerated the British casualties still further. We were said to have lost 7000 or more men at Belmont. At Magersfontein we were reported to have lost 9000 killed, and the blood had run four feet deep. The man who brought this report said that he had it from the lips of a minister of the Dutch Church so that it must be true. Our losses were heavy but when they were exaggerated to this extent it is not to be wondered at that the Dutch farmers imagined that there was little chance of British success in this war. When the news of the naval brigade fighting under Methuen reached them it was said that England evidently had no more soldiers to send and was sending sailors to fight now.

CONCLUSION.

In justice to the Free State officials it is only fair to state that in Burghersdorp the English residents were on the whole very fairly treated. Among the Free State burghers drunkenness was certainly less in evidence than with our own men. The liquor regulations during the Boer occupation were more stringent. As soon as the town was re-occupied the difference in this respect was painfully brought to our notice.

## TACHYCARDIA FOLLOWING ENTERIC FEVER.

BY CHARLES BURLAND, M.D. BRUX., F.R.G.S.,
LATE PRESIDENT OF THE BRUSSELS GRADUATES' ASSOCIATION, PRINCIPAL MEDICAL OFFICER TO H.M. HOSPITAL TRANSPORT, NO. 77.

THE subjoined synopsis of cases of enteric fever and dysentery which recently came under my care as medical officer in charge of one of the hospital transports from South Africa to Southampton, and the preponderance of typhoid fever cases will, I trust, plead my excuse for submitting a somewhat extensive and varied personal experience to the readers of THE LANCET.

There were under my care, out of a total of 632 patients, 265 cases of enteric fever and 82 cases of dysentery. All these patients had been discharged direct from hospital to the steamer in the early stages of convalescence, and one pronounced symptom which was present in the majority of cases greatly impressed me; this was an unusually rapid, small, and compressible pulse peculiar to the enteric fever cases, associated with signs of early cardiac dilatation. For purposes of investigation I enlisted the help of Surgeon-Captain Fenwick of the New Zealand Mounted Infantry and we made a careful and exhaustive examination of 300 cases of enteric and dysenteric convalescents. In every case in which the pulse-rate exceeded 90 the heart was examined binaurally by Surgeon-Captain Fenwick and myself.

Roughly gauging the severity of the illness by the past military history, as regards work and hardships; having regard, in the case of civilian soldiers, to the sufferer's previous occupation and habitual mode of life; calculating the number of weeks which were spent in hospital; and after prolonged and searching individual examination we obtained the following results. The lowest pulse-rate in the military enteric fever cases was 72 per minute and the highest was 150, an average exactly of 98·25. In 56 per cent. the pulse-rate was 80; in 25 per cent. it was 95; in 10 per cent. it was 100; in 5 per cent. it was 110; and in 4 per cent. it was from 120 to 140.

In investigating 50 cases of dysentery we found an average pulse-rate which varied from 72 to 80. The number of hearts examined was 75 per cent. of the total cases. In five cases valvular disease was present and these were excluded. In 25 per cent. of those examined the apex beat was displaced. In 50 per cent. the impulse was diffused, undulatory, and difficult to localise. A feeble first sound and a sharp and accentuated second sound were frequent features, while in a small percentage of cases undoubted dilatation was present.

The following is an interesting case illustrating the points which I wish to bring forward.

A Scots Guardsman, aged 30 years, a man of superb physique, came on board apparently convalescent. Seven days later he collapsed suddenly on deck and was at once placed in his cot. His condition was so serious that I summoned Dr. Atherstone, assistant medical officer, in early consultation. The pulse at this time was 150, and was thin and compressible. Dyspnœa was distressing, the face was pinched, cold, and markedly blanched, while the body was covered with a clammy sweat. The patient complained of acute abdominal pain and the abdomen was tympanitic but not rigid. The pain on deep-seated epigastric pressure was excruciating. I was inclined to regard the case as one of acute cardiac failure, but as there seemed to be a possibility of perforation—these men take every opportunity of eating forbidden food surreptitiously—I asked Surgeon-Captain Fenwick for the benefit of his surgical experience. It was decided to continue the medical treatment. The patient rallied slightly under a very free exhibition of stimulants, but expired 36 hours after his first seizure.

The post-mortem examination, one hour after death, revealed enlargement of the heart with dilatation of the left ventricle. The valves were healthy; the lungs were deeply congested; the abdomen was healthy; there was no perforation; and the cardiac walls, left ventricle especially, were very thin. The finger readily perforated the heart substance on slight pressure.

My experience of typhoid fever had hitherto, I confess, led me to coincide with the views of the recognised English and American authorities on the slow pulse usually found in convalescent patients from this disease, and it was certainly startling to find that of all my convalescents not 2 per cent. had a pulse-rate below 70.

How can this rapid pulse-rate in military patients be accounted for? Surgeon-Captain Fenwick adduced a theory of sympathetic irritation which I could not bring myself to accept, but which nevertheless recalled cases of physical exhaustion and cardiac disturbance with rapid, feeble pulse due to hardship and privation, which I, in common with other travellers, have found associated with mountain sickness upon the Himalayas, similarly with well-known phenomena which occasionally prevail in the collapse attending persistent and aggravated sea-sickness. It must, of course, be remembered that in the enteric fever cases which I now portray the majority of the patients had been grievously debilitated by fatiguing marches and poor and irregular feeding—thus engendering a state of cardiac irritation which the subsequent typhoid fever had not conduced to allay. May we not assume that the symptoms described are the natural and inevitable sequelæ of such conditions?

I have selected the following cases of relapsing enteric fever and dysentery, my object being to show that although the dysenteric attacks equalled the enteric in severity, yet in the former disease the pulse-rate was markedly slower.

CASE 1.—An officer, aged 27 years, who went through the whole siege of Kimberley, where he distinguished himself by his unceasing energy, had an attack of typhoid fever and was in due course invalided home. Surgeon-Captain Fenwick, who knew him intimately, stated that he was apparently quite convalescent when discharged from Wynberg Hospital. The patient complained of feeling ill directly he reached the ship and was admitted to hospital treatment at once. After a trying illness, which presented all the features of a severe primary attack but which were unquestionably due to a terribly bad relapse, he suddenly had an attack of cardiac failure on the fifth day of the homeward voyage. He was extremely ill throughout the remainder of the journey

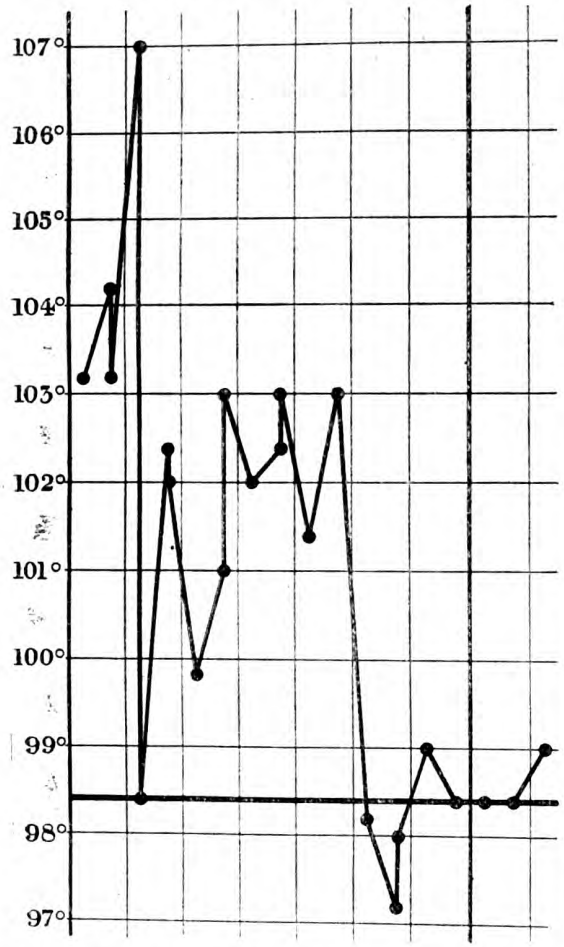
and was eventually despatched by ambulance to Netley Hospital on the arrival of the ship in England.

CASE 2.—A soldier, aged 30 years, had a very severe relapse two days after embarkation. He was much emaciated and was for several days in grave danger. The heart was weak, but the pulse, after the initial rise, was uniformly steady and slow. It will be seen to what a high degree his temperature rose (107° F.).

CASE 3.—A ship's fireman, one of the crew of the transport, had a severe attack of typhoid fever. The pulse was steady and slow and the heart's action was forcible and good.

Case 2 and Case 3 would seem to contradict completely my statements regarding the rapid pulses of my soldier patients, but as a matter of fact the patient in Case 2 had been on garrison duty, with no marching or hardships, while the patient in Case 3 was a ship's fireman with regular hours of duty.

I make no comment on the cases, my only object being




This chart serves to illustrate the severity of some attacks of dysentery. Many writers state that a temperature above 102° F. is unusual, but I have not unfrequently seen the temperature in this disease rise to 104° and over. In this particular case I had a doubt as to the existence of hepatic abscess, but the patient's rapid recovery dispelled this idea.

to show that although the relapses were equally severe, yet a marked difference was noticeable in the cardiac action in the two diseases.

The treatment was simple, consisting of free stimulation with brandy and champagne, while digitalis, carbonate of ammonia, and strychnia were the drugs chiefly relied upon, the latter being administered hypodermically in several extreme cases.

Among the enteric fever cases were four who had undergone antityphoid inoculation. My experience of these does not justify me in saying more than that they appeared to have been mild attacks with an early and uninterrupted convalescence. With regard to the treatment of dysenteric cases I found that doses of ipecacuanha administered by the mouth in the manner I advocated some years ago in your columns,[1] in an article on hæmatemesis, were most effectual, the one point being to soothe the stomach by a small dose of opium, a short time before administering a bolus of ipecacuanha (20 grains) moistened with a few drops of glycerine, all liquids being absolutely prohibited for some hours after the medicine. Cases in which the drug was rejected when given by the mouth were treated by rectal injection.

While regretting that the military exigencies and the ever-increasing demand for hospital accommodation should necessitate such early removal of patients before they are really fit to travel—to which must be in a measure attributed the very serious relapses which have occurred—it must be remembered that as the Equator is approached meteorological and climatic conditions are encountered which are sufficiently trying even to persons in health.

Infinite credit is due to the Royal Army Medical Corps for their unceasing devotion to their patients, and it is in no spirit of criticism upon them that I record these observations.

To Colonel J. F. Supple, R.A.M.C., principal medical officer, Lieutenant-Colonel O'Connor, R.A.M.C., and Major Tatham, I tender my humble tribute of admiration for the excellent arrangements which they made for the embarkation of patients, combining a minimum of fatigue with a maximum of comfort. To these gentlemen, also, we were indebted for our well-organised hospital and excellent staff.

To Captain Sir E. Chichester, Bart., R.N., we all owed much; no suggestion for the benefit of the sick and wounded failed to secure his kind and patient attention and practical coöperation.

In conclusion, I trust that the officers of the Royal Army Medical Corps, whose experience of typhoid fever cases has of late been enormous, will give the profession the benefit of their observation, especially with regard to the points which I have raised.

## A FURTHER NOTE ON THE INFLUENCE OF THE TEMPERATURE OF LIQUID HYDROGEN ON BACTERIA.[2]

BY ALLAN MACFADYEN, M.D. EDIN.,
AND
SYDNEY ROWLAND, M.A.

IN previous communications we have shown that the temperature of liquid air has no appreciable effect upon the vitality of micro-organisms, even when they are exposed to this temperature for one week (about – 190° C.)[3] We have now been able to execute preliminary experiments projected in our last paper as to the effect of a temperature as low as that of liquid hydrogen on bacterial life. As the approximate temperature of the air may be taken as 300° absolute, liquid air as 80° absolute, and hydrogen as 21° absolute, the ratio of these temperatures roughly is respectively as 15 : 4 : 1. In other words, then, the temperature of liquid hydrogen is about one-quarter that of liquid air, just as that of liquid air is about one-quarter of that of the average mean temperature. In subjecting bacteria, therefore, to the temperature of liquid hydrogen we place them under conditions which, in severity of temperature, are as far removed from those of liquid air as are those of liquid air from the condition of the average summer temperature. By the kindness of Professor Dewar the specimens of bacteria were cooled in liquid hydrogen at the Royal Institution. The following organisms were employed: bacillus acidi lactici, bacillus typhosus, bacillus diphtheriæ, proteus vulgaris, bacillus anthracis, bacillus coli communis,

[1] THE LANCET, Oct. 14th, 1893, p. 923.
[2] A paper read before the Royal Society on May 31st, 1900. Communicated by Lord Lister, P.R.S.
[3] Proceedings of the Royal Society, Feb. 1st and April 5th, 1900. THE LANCET, March 24th (p. 849) and April 21st (p. 1130), 1900.

staphylococcus pyogenes aureus, spirillum choleræ, bacillus phosphorescens, bacillus pyocyaneus, a sarcina, and a yeast.

The above organisms in broth culture were sealed in thin glass tubes and introduced directly into liquid hydrogen contained in a vacuum jacketed vessel immersed in liquid air. Under these conditions they were exposed to a temperature of about - 252° C. (21° absolute) for ten hours. At the end of the experiment the tubes were opened and the contents were examined microscopically and by culture. The results were entirely negative as regards any alteration in appearance or in vigour of growth of the micro-organisms. It would appear, therefore, that an exposure of ten hours to a temperature of about - 252° C. has no appreciable effect on the vitality of micro-organisms.

We hope to extend these observations upon the influence of the temperature of liquid hydrogen on vital phenomena and to make them the subject of a future communication, and to discuss their bearing upon problems of vitality.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A CASE OF ACTINOMYCOSIS.

BY EDWARD T. JONES, M.R.C.S. ENG.,
AND
JOHN C. MACKAY, M.D. ST. AND.

THIS case appears to be worth recording because of (1) the uncommonness of the disease and (2) the enormous doses of iodide of potassium taken during treatment. The patient was a male, aged 42 years, who is the driver of a traction-engine used with a threshing-machine. Early in November, 1898, he had an old stump of a tooth removed from the right side of the lower jaw. This was followed by enormous swelling of the tongue accompanied by great pain. This apparently subsided under treatment and he came under our care a month later with a large swelling under the jaw in the anterior triangle, which was rapidly increasing. The skin was very red, thickened, and œdematous; the tongue was bound down and when protruded came out markedly on the right side. At one spot there was a patch of softening, this was incised and was found to contain thick curdy pus loaded with actinomycotic granules (confirmed by the Clinical Research Association). The treatment adopted was to open all places of softening as they appeared, to swab out the cavities with 1 in 3 carbolic solution, and to administer iodide of potassium internally. The dose of the iodide was increased from 30 grains per day to a maximum of four drachms per day in the course of six weeks. The patient never had any unpleasant symptoms from the iodide; in fact he put on flesh. The changes in the discharge and granules due to the iodide as recorded by Fairweather[1] were observed. The disease proved extremely chronic, spreading in the subcutaneous tissue downwards and forwards over the larynx, crossing the middle line. Finally it cleared up and early in March, 1899, the patient was discharged with no further sign of the disease and with nearly all the induration and thickness of the skin gone. Whether the iodide had much to do with the apparent cure it is difficult to say. Indications for treeatment were not easy to find. Veterinary surgeons appear to treat their cases in cattle with enormous doses of iodide with success. Perhaps more radical surgical treatment at the beginning, as recommended by Ransome,[2] would have produced a good result more quickly, but on the other hand it is worth noting that with the exception of one week at the commencement of treatment our patient was able to keep at his work during the whole time.

St. Columb, Cornwall.

[1] Brit. Med. Jour., June 27th, 1896.
[2] Ibid.

### NOTE ON THROMBOSIS OF CEREBRAL VEINS OCCURRING IN A CASE OF CHLOROSIS.

BY EDWARD F. M. NEAVE, M.B., CH.B. EDIN.

THROMBOSIS of cerebral veins or sinuses is a very rare complication of chlorosis. Dr. Byrom Bramwell in his book on anæmia states that "thrombosis of the veins of the leg occasionally occurs [in chlorosis], but thrombosis of the cerebral sinuses very rarely." He does not record a single case of the latter. I have not been able to ascertain the frequency of this complication, but judging from the scantiness of the literature on the subject it must certainly be very rare. On consulting Osler's "Practice of Medicine" I find that Brayton Ball has recently reported a case and has collected 10 or 11 others from the literature of the subject. All were in girls with anæmia or chlorosis. Ball's patient was dull and stupid and had vomiting, dilatation of pupils, and double-choked discs. Slight paresis of the left side occurred. In some of the other cases the patients had headache, vomiting, and delirium. In Douglas Powell's case with similar symptoms there was loss of power on the left side.

The diagnosis of cerebral thrombosis is very difficult and in many of the cases it was made only at the necropsy. The symptoms pointing to thrombosis in the cerebral sinuses and veins are described by Sir Dyce Duckworth[1] as follows: "(1) headache, at times very severe, and sometimes plainly localised; (2) vomiting, generally severe; (3) motor symptoms, indicative generally of irritation, either cortical or central—hence tremors, jerking, spasms, and contractures in other parts, usually of one side, ending in paresis or paralysis; (4) drowsiness, delirium, coma; (5) variations in the size of the pupils."

The following case, in which most of the above symptoms were present, seems worthy of record:—

The patient was a married woman, aged 31 years, and she had no children. She complained of breathlessness, palpitation, and weakness. The duration of the illness was indefinite, but she had felt ill for some months and ultimately became so weak that she had to take to her bed. The family history was good. The patient had anæmia when a girl several times, but she always quickly recovered under a course of iron. When I visited her on May 19th, 1900, I found her lying in bed on her back, looking extremely exhausted and presenting most of the typical features of chlorosis. Her development and nutrition were good, but her face was extremely blanched and the lips and conjunctivæ were very pale. Pulsation was visible in the neck and a *bruit de diable* was well marked. On the 20th the patient had a few fainting fits, from which she always quickly recovered. On the next day (the 21st) she had a severe attack of vomiting, with severe headache. A blue pill, followed by a saline draught, was given with some benefit. On the evening of the 22nd she seemed very weak and could not turn on to her side. She slept fairly well but on awakening next morning she complained of a feeling of numbness in the left arm and leg, saying that those members appeared to be "dead." At the time she complained of great pain over the vertex and frontal region. This pain could not be localised to any one side. Her memory was confused—for instance, she did not know the day of the week or what she had had for breakfast. She was slightly delirious at times. The speech was unaffected. There was paralysis of the left arm and leg. As regards the leg the paralysis was complete, while the paralysis of the arm was partial. The opponens and adductor of the thumb were in action, the flexors of the wrist were slightly in action, while all the other muscles of the limb were paralysed. There was no facial paralysis. When the tongue was protruded it pointed distinctly to the right side. The left knee-jerk was slightly exaggerated. There was no ankle clonus. At this time there was incontinence of urine. The pupils were very large and they reacted to both light and accommodation. The discs, beyond being pale, seemed normal. There was no optic neuritis. The urine contained no albumin or sugar. The pulse was 120 and the temperature was 100° F. As regards the sensory symptoms there was slight anæsthesia of the left arm and leg. There was no hyperæsthesia.

[1] THE LANCET, Feb. 22nd, 1890, p. 404.

Dr. J. Russell of Arbroath saw the patient with me and after weighing carefully all the possibilities we came to the conclusion that the cause of the hemiplegia was a clot of blood in one or other of the cerebral sinuses or veins in the region of the right motor area. We excluded secondary thrombosis, i.e., thrombosis due to disease of the internal ear, fracture, tumour, or suppurative disease. Embolism was excluded.

Under appropriate treatment the patient gradually improved. A belladonna plaster was applied over the præcordial region, while digitalis, nux vomica, and iron were given internally. The bowels were kept regular with cascara. A light nutritious diet was added. In two days under this treatment improvement was noted. The temperature and pulse gradually came down to the normal, and six days later the paralysis of the arm began to pass off. The patient could not move her toes till about three weeks from the time that the paralysis occurred, and three weeks later she was up and limping about. Two months after the beginning of her illness she was practically quite well, except for some dragging of the left leg.

Friockheim, N.B.

## A CASE OF ABSCESS OF THE PAROTID GLAND PRESENTING UNUSUAL SYMPTOMS.

BY W. J. BEVERIDGE, L.R.C.P., L.R.C.S. IREL.,
SURGEON TO THE CAYLLOMA SILVER MINING COMPANY, LIMITED.

ON May 14th of this year I was consulted about an Indian boy, aged about 10 years, who was suffering from an inflammatory swelling involving the right side of the head and face. He gave the following history. He had had a slight soreness in the throat, accompanied by pain over the right parotid region from May 2nd. On the 6th he noticed a swelling in front of the right ear. This swelling increased during the following days, spreading forwards over the cheek and upwards over the temporal region; from the temporal region it spread backwards and downwards, till on the 11th he noticed (to use his own expression) "a soft pimple" in the groove behind the helix of the ear. The boy presented a most peculiar appearance. The helix of the ear was tilted forward by an abscess situated in the groove behind; the position of the zygoma was marked by a hard groove, below which there were œdema and deep fluctuation; and there was considerable œdema over the temporal region and extending down to the mastoid process. Both tonsils were slightly swollen. The pus sac behind the ear being evidently about to burst I opened it, allowing a quantity of pus to escape. The flow of pus was greatly increased by pressure over the parotid. I applied an absorbent dressing and gave the boy a boric acid gargle. On the next morning I made an incision into the parotid, opening into a fairly large abscess into which I inserted a gauze drain. A considerable quantity of purulent matter escaped during the next few days. The œdema rapidly diminished and the boy is now quite well. I have no doubt that the lesion in this case was the very ordinary abscess in the parotid region following on the introduction of septic organisms through the tonsils. In this case, however, the pus worked its way upwards, passed under the zygomatic arch, then backwards beneath the strong temporal fascia, escaping under the lower border of which it was at length able to reach the surface. Previously to my seeing the patient no treatment whatever had been applied.

Cayllomas, Peru.

AUGUST BANK HOLIDAY ON THE CONTINENT.—For the convenience of holiday-makers on the Continent cheap tickets will be issued to Brussels available for eight days, viâ Harwich and Antwerp. Passengers leaving London in the evening reach Brussels next morning. Tickets at cheap fares will be issued by the Antwerp route to Berne from July 25th to 28th. For visiting The Hague, Amsterdam, and other parts of Holland, the Rhine, north and south Germany, and Bâle for Switzerland, especial facilities are offered viâ the Great Eastern Railway Company's Royal British Mail Harwich—Hook of Holland route, through carriages being run to Amsterdam, Berlin, Cologne, and Bâle, also restaurant car on the North and South German express trains to and from the Hook of Holland. The General Steam Navigation Company's fast steamers will leave Harwich for Hamburg on August 1st and 4th, returning August 5th and 8th.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.**

## BELGRAVE HOSPITAL FOR CHILDREN.

### A CASE OF CONGENITAL HYPERTROPHIC STENOSIS OF THE PYLORUS.

(Under the care of Dr. EDMUND CAUTLEY.)

CONGENITAL hypertrophic stenosis of the pylorus is still sufficiently uncommon in this and other countries to warrant placing the following instance of the disease on record. It is a remarkable circumstance that as soon as a new morbid condition is described many older records of its occurrence are discovered, and before long it is found to be by no means so rare as was thought at first. Dr. Cautley's paper on hypertrophic stenosis of the pylorus in infants, read before the Royal Medical and Chirurgical Society in November, 1898, though not the first account of this interesting disease, contained the first thorough description of the condition with a collection of the previously recorded cases. We have no certain knowledge of the real cause of this malady, and so far the only satisfactory treatment appears to be surgical.

A female infant, aged three months, was admitted into the Belgrave Hospital for Children under the care of Dr. Edmund Cautley on June 29th, 1900, and died on the next day. Her parents were described as healthy. She was born at full time and seemed to be a normal infant. She was the fourth child, the others being alive and well. The mother had had no miscarriages. During the first six weeks of life the infant was fed on cow's milk and barley-water, and was said to have had about a pint of the former in the 24 hours. She was constantly sick and was then put on one teaspoonful of condensed milk with four tablespoonfuls of water and lime water for a feed, and was only fed four times a day. During the two days before admission she had meat juice and whey. The mother's account of the feeding and of the past history generally was variable and unreliable. She stated that the vomiting had been constant since birth, the food being kept down only a short time, and that constipation had been very troublesome. For three weeks before admission the vomiting and wasting had been more pronounced.

On admission the child was dirty, flea-bitten, and emaciated, weighing 6 lb. 3 oz., and had occasional slight general convulsive movements. The temperature was normal. The vomiting was frequent and persistent, food being retained a very short time. There was no bile in the vomited matter. The bowels acted five times; the stools being small, watery, and greenish, and containing traces of fæcal matter. The convulsive movements became continuous and the temperature gradually rose, reaching 105° F. before death, which took place a few hours after Dr. Cautley first saw the child.

*Necropsy.*—On making a post-mortem examination it was found that there was great emaciation. The stomach was largely dilated and its walls were thinned, except in the region of the pylorus where the wall was thicker than usual in these cases. The contents consisted of a little partially digested food and some excess of mucus. The mucous membrane was not inflamed but presented a slightly catarrhal appearance. The pylorus formed a definite elongated, cylindrical tumour which was an inch long and firm and hard. Its limits were very easily defined, especially on the duodenal side. On laying open the duodenum the pylorus presented the same appearance as the os uteri when seen from the vagina—a small central orifice surrounded by a thick, smooth, ring-like wall. Occlusion of the orifice was completed by the folds of mucous membrane, and the liquid contents of the stomach could not be squeezed through it, though a small probe could be passed through into the stomach. On laying open the pylorus longitudinally it was noted that the mucous membrane was

thrown into a thick, raised, ridge-like fold, bifurcating into the mucous membrane of the stomach. The wall was three-eighths of an inch thick at the duodenal end and thinned off towards the gastric end, though very definitely limited in this direction, hence the pylorus as a whole was somewhat funnel-shaped. As in previous cases the increase in the thickness of the wall was due to hypertrophy of the circular muscular fibres. The intestines were collapsed and empty. The other organs were normal.

*Remarks by* Dr. CAUTLEY.—In a paper[1] on this affection read before the Royal Medical and Chirurgical Society in 1898 I described two typical cases of this disease which came under my care in 1897; mentioned a specimen in the St. Bartholomew's Hospital Museum presented by Dr. J. Raglan Thomas and subsequently shown at a meeting of the Pathological Society of London by Dr. H. Morley Fletcher;[2] and gave brief abstracts of 17 other typical cases collected from medical literature, and also short notes of six allied cases which were not sufficiently definite to be included as typical. Since that paper was written no less than 11 other instances have been recorded by Schwyzer,[3] Stern,[4] Rolleston and Hayne,[5] Meltzer,[6] Adler (referred to by Meltzer),[7] Abel,[8] Still[9] (three cases), Batten,[10] and Pritchard.[11] Together with the present case this makes a total number of 32 undoubted cases. It is noteworthy that no less than 26 of these have been recorded in the last five years. It is clear, therefore, that the disease is not so rare as has been supposed.

Fuller details of the symptoms, diagnosis, pathology, and morbid anatomy of this condition will be found in the paper first referred to. In only one respect does the present case differ from the typical instances—namely, in the small, watery stools passed during the last day of life. Complete constipation is the condition usually present. It was noted at the necropsy that the intestines were practically empty and that the occlusion of the pylorus was complete. Possibly the stenosis is aggravated by post-mortem contraction of the hypertrophied muscle and during life it is not quite so extreme.

The two chief theories put forward as to the causation of the disease are as follows:—1. It is due to a simple redundancy of fœtal growth. Nature, in her extreme anxiety to provide an efficient pyloric sphincter, has over-exerted herself and produced too great a quantity of muscular tissue. 2. Thomson[12] suggests that the essential lesion is not a muscular but a nervous one—a functional disorder of the nerves of the stomach and pylorus leading to ill-coördinated and therefore antagonistic action of their muscular development. Neither of these theories is completely satisfactory and the affection still requires further elucidation. Treatment consists in giving small, easily digested, or pre-digested meals. Nasal feeding has proved beneficial. Rectal feeding prolongs life. Probably the only chance of permanent benefit lies in operation. In Abel's case operation resulted in cure; that is to say, the child was discharged from the hospital as cured in two weeks. So far no other successful operation has been recorded. Pylorectomy offers the best chance of success. It is, no doubt, a serious operation and, apart from that, the infant when the disease is diagnosed is hardly in a condition to stand such an operation. Now that more attention has been attracted to the subject it is probable that an earlier diagnosis will be made and more successful results will be attained.

## NEWCASTLE-ON-TYNE ROYAL INFIRMARY.

### A CASE OF HYDATID OF THE LIVER AND SUPPURATING HYDATID OF THE LEFT LUNG.

(Under the care of Mr. RUTHERFORD MORISON.)

THE early diagnosis of the presence of an hydatid cyst in the lung is very difficult, and though exploratory puncture may afford definite information in doubtful cases, yet the danger of rupturing the cyst during the puncturing and of flooding the lungs with the hydatid fluid is by no means small, several fatal cases having been recorded. When the hydatid has given rise to an empyema the treatment is much more simple. The modern method of treating hydatids of the liver by incision after free exposure of the organ gives much more satisfactory results than those obtained by tapping, as it is possible to remove every portion of the parasite and the cavity in the liver is gradually obliterated. For the notes of the case we are indebted to Dr. Henry Fielden, house surgeon.

The patient was a single woman, aged 30 years, who was admitted into the Royal Infirmary, Newcastle-on-Tyne, on March 3rd, 1899, complaining of a swelling on the right side. She stated that in August, 1895, she began to suffer from pain below the right breast and at the top of the right shoulder, increased by deep breathing and by swallowing. The pain on swallowing was so prominent a symptom that her condition was attributed to indigestion. At Christmas of the same year she noticed that the right side was becoming larger and at the same time the pain was more marked than it had been before. She continued going about her housework suffering in this way till August, 1898, when she had a severe attack of pleuritic pain in the left side which was accompanied by a dry cough. For this attack she remained in bed for three days and then got up. She had only been up for three days when while walking along a landing she was seized with a violent, continuous fit of coughing which lasted from 7.30 P.M. to 4.30 A.M. and almost a gallon of muco-purulent material was expectorated. To her medical attendant the case now assumed all the appearances of phthisis and this it was considered to be. This appearance was rendered still more deceptive by the occurrence 12 months previously of hæmoptysis. Until she reached the age of 15 years her parents had a dog living in the house. From the age of 18 years she was maid in a hotel where she was accustomed to eat freely of green vegetables. On admission she had the appearance of a patient suffering from phthisis. She had a cough and expectorated a good deal of muco-purulent material. Respiratory movements were much freer on the right than on the left side, especially at the base, and the base of the right chest bulged. Percussion gave a resonant note all over the chest except over an area of about the size of the palm of the hand below the scapula on the left side, where there was a great loss of resonance but not absolute dulness. The breath sounds were rather harsh on the right side. At the left base behind the breath sounds were feeble and were accompanied by bubbling râles. The heart sounds were normal. There was a large swelling in the right hypochondrium which made the ribs bulge forward and moved with respiration. The swelling felt elastic and fairly tense. On percussion it was possible to obtain a "hydatid thrill." The liver dulness was increased. A diagnosis of hydatid of the liver was made.

An operation was performed on March 9th. Under chloroform a transverse incision was made from the right rectus in front to the quadratus lumborum behind and the liver was freely exposed. An exploring syringe was then introduced into the liver and a clear fluid like hydatid contents was drawn off. The liver was then incised, the cyst was opened, and the contents of the cyst, about half a gallon of fluid and daughter cysts, escaped. By the aid of lithotomy forceps, sponges, and washing the whole of the remainder of the cyst wall was removed. No pus was discovered. A gauze drain and a tube were then introduced into the cavity and the abdominal wound was closed except behind where the tube and gauze were left projecting into the loin. For some time the temperature remained elevated and the cough was extremely troublesome. On the 25th she expectorated some muco-purulent material containing "grape skins." The base of the left chest was examined and was found to present the physical signs of an empyema. An exploring needle was inserted on the 29th and pus was drawn off. On the same day chloroform was administered and portions of the seventh and eighth ribs were removed, and the collection of pus in the lung was cut into, when a large number of cysts escaped. A gauze drain and tube were inserted and she had no further bad symptoms. The cough almost entirely ceased. She was discharged on May 4th; she had regained perfect health and is now in a housemaid's situation.

[1] Transactions of the Royal Medical and Chirurgical Society, 1899, vol. lxxxii., p. 41. (This paper contains a full bibliography.)
[2] Transactions of the Pathological Society of London, 1899, vol. l., p. 98.
[3] New York Medical Journal, vol. lxvi., p. 726.
[4] Deutsche Medicinische Wochenschrift, 1898, Band xxxviii.
[5] Brit. Med. Jour., 1898, vol. i., p. 1070.
[6] New York Medical Record, 1898, vol. liv., p. 253.
[7] Ibid., p. 257.
[8] Münchener Medicinische Wochenschrift, November, 1899, and Brit. Med. Jour., Epitome, 1900, vol. i., p. 89.
[9] Transactions of the Pathological Society of London, 1899, vol. l., p. 86.
[10] THE LANCET, Dec. 2nd, 1899, p. 1511.
[11] Archives of Pediatrics, 1900, p. 241.
[12] Scottish Medical and Surgical Journal, June, 1897.

# Medical Societies.

## BRITISH GYNÆCOLOGICAL SOCIETY.

*Exhibition of Specimens.—Untoward Results following Abdominal and Pelvic Surgery and the Means to Prevent them.*

A MEETING of this society was held on July 13th at Buxton, Dr. W. J. SMYLY (the President) being in the chair, a number of the Fellows of the society and their lady friends being previously hospitably entertained. The scientific work of the meeting took place in the Town Hall, where Mr. J. E. HARRISON, vice-chairman of the Buxton Urban District Council, delivered an address of welcome, which was acknowledged by the PRESIDENT.

Mr. CHRISTOPHER MARTIN (Birmingham) showed a specimen of Ruptured Cornual Pregnancy.

Mr. CHARLES RYALL showed a specimen of Necrosis of the Cervical Stump following Supra-Vaginal Hysterectomy.

Mr. E. STANMORE BISHOP (Manchester) introduced a discussion on Untoward Results following Abdominal and Pelvic Surgery, and the Means to Prevent them. He said that defective results after abdominal or pelvic work reacted upon future cases to the detriment of the reputation of the operation itself, and deterred other patients from resorting to operation in time to receive effective treatment. The type of operation which Mr. Bishop selected for discussion was that of hysterectomy for fibro-myoma. The defective results treated of were as follows: 1. Fatality, which was due most often to delay and next to sepsis. In connexion with this Mr. Bishop spoke of the advisability of early purgation and gave reasons for this and explained the rationale of its action and the methods of operation. 2. Ventral hernia; the percentage of occurrence was given and explanations offered for its occurrence, with the reasons for adopting suture in layers and the use of celloidin. 3. Intestinal and omental adhesions, which showed the need for perfect re-formation of the peritoneal potential cavity. 4. Vaginal prolapse; reasons were given for the closure of the pelvic peritoneum and the dangers of non-closure were pointed out. 5. Persistent sinuses, in connexion with which Mr. Bishop explained the preparation of the ligatures and the use of the drainage-tube. 6. Other defective results.

Dr. HEYWOOD SMITH remarked that he thought that subperitoneal hysterectomy was safer than panhysterectomy. The risk of ventral hernia could be minimised by making the incision not through the linea alba but an inch to one or the other side.

Mr. CHRISTOPHER MARTIN (Birmingham), in contrasting the various methods of hysterectomy, said that he failed to see what good the cervix could do after the rest of the uterus had been removed. The objection that the removal of the cervix weakened the vaginal vault and predisposed to prolapse was, he believed, a purely theoretical one. He had never seen such a result after panhysterectomy. Referring to the question of ventral hernia he said that he was at one time much opposed to the use of buried sutures, but since adopting the late Mr. Greig Smith's suggestion of boiling chromicised catgut in xylol or absolute alcohol he had not had any stitch abscesses and he thought that the plan of sewing up in three layers was the best.

Dr. MACNAUGHTON-JONES pointed out that the same rules hold good in gynæcological as in other branches of surgery, and he agreed with Mr. Bishop that cases requiring operation should be dealt with as soon as possible. He was quite satisfied with the three-layer method of sewing up; he never had any trouble with buried sutures and he had had only two cases of hernia following operation. The form of operation for hysterectomy that he preferred was the supra-vaginal.

Dr. E. T. DAVIES (Liverpool) said that in cases of fibroids where there were no symptoms it was very difficult to know whether to advise operation or not. He had had one case under observation for six or seven years and the patient had had no inconvenience from the tumour except from the æsthetic point of view. His preference was for Baer's operation, but he did not think that the stump of the cervix was of any importance in maintaining the vaginal vault, for no inconvenience was observed in cases where the uterus was completely removed by the vagina for cancer. Malignant degeneration of the stump appeared to him somewhat of a bugbear; he had read of the occurrence but had never seen a case.

Mr. CHARLES RYALL observed that hernia was due in some cases to the use of drainage through the abdominal wall and he had never adopted this plan without regretting it. The best way to drain was through the pouch of Douglas or by Muscatello's plan. Stitch abscesses were in some cases unavoidable when the intestine had been opened, for the fingers were then liable to become infected and, similarly, the abdominal wound might become infected with malignant disease if such a growth were allowed to come in contact with the abdominal wall during removal.

Dr. ROBERT BELL (Glasgow) considered that the danger of opening the abdomen was due entirely to sepsis; but it was only when the septic matter was in a condition for absorption that sepsis could occur. The view that sepsis could occur from bowel infection appeared to him to be entirely theoretical; if that view were correct why should not infection result from constipation? The number of cases of hernia following abdominal section was appalling—he was not speaking from his own experience for he had had only one case himself. To prevent it the first thing was to close the peritoneum carefully; the operator could then take proper time to secure the fascia and arrest all bleeding. By this means suppuration did not occur, and if healing took place by first intention there would be no subsequent hernia.

Mr. J. W. DRAPER (Huddersfield) said that in the cases of fibroid that had been under his observation in general practice (about 15) the patients had not been subjected to myomectomy. In one case the ovaries had been removed; in another, a case of small pedunculated fibroid producing pressure symptoms, the tumour had been removed. Of these patients none had died from the disease and most of them had passed the menopause. On the whole he believed that they had enjoyed a better life, in spite of the lumps which they carried about inside them, than they would have done if they had been operated upon; but these cases required watching.

The PRESIDENT said that his experience had been very different from that of the previous speaker. He had seen a large myoma forced down into the vagina and suppurating there; he had seen malignant degeneration, sloughing, and hæmorrhages threatening life as the result of not operating in cases of myoma. It was noticeable that in speaking of the risk of hernia everyone seemed best satisfied with the particular method of suture that he had last adopted; also most operators found herniæ in the practice of other men but not in their own. This was because, naturally, the patient did not come back to the man who had given her a hernia. His own plan was to be careful to secure the fascia, using boiled catgut. It did not seem to him that a strong case had been made out for celloidin. If a wound were aseptic it would heal whatever the dressing, and if it were not aseptic it seemed to him that celloidin would be a disadvantage.

Mr. STANMORE BISHOP briefly replied.

## EDINBURGH OBSTETRICAL SOCIETY.

*The Treatment of Dysmenorrhœa.—Election of Honorary Fellows.*

THE special summer meeting of this society was held on July 11th, Dr. R. MILNE MURRAY, President, being in the chair.

Dr. F. W. N. HAULTAIN opened a discussion on The Treatment of Dysmenorrhœa. From a professional standpoint dysmenorrhœa might, he said, be defined as "pain associated with, and dependent on, menstruation of such severity as to materially interfere with the sufferer's performance of her usual duties." As a rule the pain was local and pelvic, but in certain cases it was referred to the head, the stomach, and to other organs. From the frequent presence of more or less discomfort along with menstruation the lay mind had come to consider pain as a physiological attribute of the function, and that even in an aggravated form the pain was to be borne with resignation, and that it was wrong, even if possible, to attempt amelioration. But pain at the menstrual periods sufficient to interfere with a woman's usual duties was to be considered pathological and was usually due to local abnormal conditions. Practically the causes of dysmenorrhœa might be briefly considered as inflammatory and obstructive, alone

or combined. The inflammatory variety embraced congestive and inflammatory conditions of any of the organs physiologically concerned in the function—the uterus and its appendages. The obstruction necessarily was confined to morbid states of the uterus alone. A rational explanation of the pain in the latter was that the blood which escaped from the capillaries of the uterine mucosa was impeded in its escape from the uterus. This might be by a temporary state of spasm or by a permanent blocking of the uterine canal through flexions, new growths, or developmental stenosis. The obstruction caused retention of blood which might or might not coagulate in the uterine cavity and which stimulated forcible contraction of the organ for its expulsion. When the pain was inflammatory it was due to the vascularity which occurred before menstruation still further congesting the already inflamed tissues; the discomfort was necessarily diminished after the depletion which occurred during the flow. The pain might be menstrual or pre-menstrual or both. The ovarian or tubal dysmenorrhœa was mainly pre-menstrual in its character, the depletion occurring as a result of the flow giving considerable relief. On the other hand, in uterine inflammation, such as endometritis, the pain, though pre-menstrual, might be continued through the period by the contractions of the tender uterus or by the thickened and swollen mucosa offering a block to the easy exit of the menstrual blood. Congested or inflamed ovaries gave rise to both menstrual and pre-menstrual pain. In Dr. Haultain's experience the obstructive or menstrual greatly preponderated over the other—in a proportion of quite ten to one. The treatment of dysmennorrhœa depended on the many different causes and it must be adapted to these causes. If a displacement were present it must be rectified; if a new growth, it must be removed; and if a stenosis, the dimensions of the canal of exit must be enlarged. By far the most common causes of this type were stenosis and flexions, the latter being usually a congenital anteflexion though exceptionally it was a retroflexion. In retro-displacements, replacement and retention in position was the only method to be adopted. In the most common congenital anteflexion with stenosis vaginal supports were practically valueless and uterine stems were dangerous to use, and therefore treatment in these cases consisted in dilatation or incision of the uterine canal to such an extent that mechanical obstruction was removed. Dilatation might be accomplished in two ways, forcibly or gradually. The use of the tent or the forcible dilatation by bougies up to 15 French or 10 Hegar was most efficacious, but in the majority of aggravated cases there was present a coincident endometritis, in which cases curettage with subsequent hot vaginal douching materially assisted in effecting a more rapid and permanent cure. Incision of the canal was not now so frequently adopted as formerly, but in well-marked cases of stenosis it was of much value in establishing a permanent dilatation of the cervical canal. Care should be taken to keep the incision open for 48 hours by packing with iodoform gauze. The treatment of the menstrual variety of dysmenorrhœa by means of drugs was most discouraging, a result to be expected if the cause was a mechanical obstruction. By drugs hope for alleviation of the symptoms only could be entertained. Unfortunately medicinal treatment consisted largely of the use of stimulants and anodynes, both of which were objectionable from their deleterious effect upon the general health and morale of the patient. Many dipsomaniacs and morphomaniacs could trace the origin of their degradation to the comfort given by alcohol and opium during painful menstruation. In inflammatory and congestive forms, particularly those due to ovarian causes, sedatives, such as bromides, gelsemium, camphor, and hydrastis, found most favour, combined with hot applications, hip baths, and counter-irritants. When the ovarian condition was intractable, it was in rare cases found necessary to perform oöphorectomy. This was very exceptional and was only applicable when for special reasons it was imperative that the dysmenorrhœa should be removed. A point of prime importance was the question of the justification of the local treatment of dysmenorrhœa. With regard to married patients there could be no divergence of opinion that local examination and, if necessary, treatment should in all cases be carried out. With unmarried females the lines of conduct were by no means so clear. It was impossible to separate sentiment from duty. Yet sentiment must not be considered in those patients who had to maintain themselves by their own exertions and who were incapacitated for a day or two each month. Their dysmenorrhœa prevented their taking or keeping good situations. With those women who were affluent and did not require to work dysmenorrhœa might only mean a day or two in bed with a hot bottle and the use of anodynes. But if they desired to be cured, then it seemed right to examine them under an anæsthetic and at the same time to be prepared to dilate, replace, or curette the uterus if necessary. Some objected to local treatment as it directed attention to the sexual organs, but being *hors de combat* every month during a menstrual period was surely more potent in the same direction. Another argument was that dysmenorrhœa might improve spontaneously, but so did fissure of the anus, and yet it was treated whenever complained of. Whenever drugs had failed to relieve the dysmenorrhœa then a local examination under an anæsthetic was the correct mode of procedure, carrying out any treatment that might be required.

Dr. H. M. CHURCH considered prevention better than cure and that it was the duty of guardians to be very careful at the commencement of menstrual life in the case of girls who were growing. It often happened in these days of school pressure that the education of the mind was carried on at the expense of the bodily health. This occurred more in city life than in country life and dysmenorrhœa was probably more frequent in city life. It was certainly true that dysmenorrhœa and morbid functional neuroses arising therefrom were more common in the cultured and educated classes than in the comparatively uneducated. This pointed to the desirability of a system of education less straining to the nervous system of the growing girl than it commonly was in many schools. In school life, with examinations and competitions, there was a more or less continuous excitement and strain. This affected all the secretions of the body both in quantity and quality. In the case of the uterus the disturbance might show itself in dysmenorrhœa, probably due, as Dr. Berry Hart had pointed out, to the deficient secretion from the cervix of that mucus which was believed to keep the blood of menstruation from coagulating. This would result in clotting of the menstrual blood and in the occurrence of spasmodic pain to expel it, and perhaps would be accompanied with sickness and retching. In order to prevent trouble Dr. Church recommended two or three days' rest on the sofa at menstrual periods, or if there was pain complete rest in bed where it could possibly be carried out. He referred specially to rheumatism of the uterus as a cause of pain in some cases; and if it attacked the fibrous tissue at the os internum it might lead to anteflexion. Salicylate of soda generally gave relief. In cases of dysmenorrhœa he recommended judicious cycling or gentle horse-back exercise between the periods.

Professor KYNOCH (Dundee) thought that it was important to remark that dysmenorrhœa was a symptom indicative of disease, uterine or extra-uterine or both. In young girls he did not think it was advisable to resort to any local treatment without a prolonged trial of constitutional remedies. With regard to local treatment his experience of dilatation was that rapid dilatation was not very satisfactory. These patients came back in a very short time, and dilatation was necessary again. He had now entirely given up the rapid method, using a tupelo tent which he left in for 12 hours, replacing it again for two subsequent days and plugging the uterus in the intervals with sterilised gauze. This method was more tedious but the results were more permanent, and he had not seen any bad effects from septic trouble. With regard to dysmenorrhœa due to extra-uterine affections, commonly occurring after a pregnancy, douching was very effective. But it must not be carried out in a sitting posture, which was practically useless, and the water must be hot enough to have a beneficial effect on the inflammatory processes. This temperature, as a rule, could not be borne, as the water produced so much pain on flowing over the skin as to make the patient cry out with pain. An instrument introduced by Stratz he had found very useful in allowing water at any temperature to be applied to the vagina, the return flow being prevented from touching the skin. If that failed he had had satisfactory results, and some unsatisfactory results, by opening the abdomen from the vagina and breaking down adhesions, and if necessary inspecting and treating the ovaries, &c. He had very little experience in the removal of the ovaries for this trouble. In two cases under observation just now where the ovaries had been removed for pain there

had been no improvement whatever. He would reserve removal for cases of defective development of the uterus associated with atresic conditions. In other conditions he preferred the vaginal route to the abdominal route and had obtained quite satisfactory results.

Dr. JAMES FOULIS referred to the large number of causes of dysmenorrhœa and considered that uterine treatment should only be carried out when the uterus was proved to be the cause of the pain. The question of morale always came up in the local treatment of girls, and examination was only justifiable when all ordinary remedies had failed. Many girls got well without treatment; marriage often cured them. He specially referred to the use of iodide of potassium as of great service in treating painful menstruations, giving it for several days before the period. The ovaries were often the seat of the dysmenorrhœa, and yet considerable disease of the ovary might be present without pain. Even large tumours of both ovaries might be present and yet menstruation might occur without pain. He believed that it was often ignorance of the true cause of the pain which led operators to remove the ovaries in one case and to leave them in another. Many cases had been operated upon injudiciously.

Dr. JOHN CONNEL (Peebles) had seen many cases of dysmenorrhœa even under conditions of healthy country life. He desired to emphasise the opinion that local examination should be the very last thing to be thought of in the unmarried. He knew of dozens of young women who had suffered severely and had got well somehow. He believed that the introduction of the bicycle had had more to do with the removal of painful menstruation than any other remedy he had heard of in late years. Constipation was a very common cause of dysmenorrhœa and it was often overlooked by parents in attending to the health of their daughters. As regards remedies he deprecated the use of alcohol in any shape or form; he had often found it to be the case that female drunkards had been prescribed alcohol for painful menses when they were young girls. Recently he found a young married woman being given three half-cupfuls of whisky by her relatives at her menses; she was practically drunk when he saw her. Whatever was given for dysmenorrhœa alcohol should be avoided.

Dr. J. M. MUNRO KERR (Glasgow) considered dysmenorrhœa as a symptom which was at present called a disease owing to the lesion causing it being obscure or hidden. These cases would gradually disappear so that there would be as little justification in making this diagnosis as at present there was of diagnosing "menorrhagia." The disease "membranous dysmenorrhœa" should be taken out of this class and properly spoken of as "endometritis exfoliativa menstrualis." In an analysis of 60 cases he had found an abnormally small uterus in three, stenosis of the cervix in six, and pathological anteflexion in 16. As regards stenosis it was very slight, and it was a question whether it was the cause of the pain. In treatment he favoured gradual dilatation by Hegar's dilators. No doubt in the majority of the cases the pain returned in four or five months, but it was not very trying to have the operation repeated. Electricity had occasionally been attended with good results. He had not found bleeding very successful. He had tried iodide of potassium and salicylate of sodium, but the only drugs which he had found of any benefit were antipyrin and phenacetin. He agreed with the remarks made about the use of the bicycle.

Dr. A. H. F. BARBOUR considered that operative treatment in this condition depended on the amount of the patient's suffering, and this was difficult to estimate. It depended largely on the up-bringing of the patient whether she thought a great deal about herself and magnified her ailments and suffering. If trained to think more about others and to work for them the patient did not suffer so much. In judging of the amount of pain attention should be kept on two factors—the stimulus to the peripheral end of the nerve and the irritability of the sensory nerve-centres. One of the largest benefits ever done to gynæcology had been done by Dr. Weir Mitchell, who benefited these cases so much by feeding and improving the central nervous system. He disagreed with Dr. Haultain with regard to the various operations for these cases, believing strongly in medical treatment and attention to diet at least for a few months. A course of arsenic helped very much and antipyrin could be given at the periods.

Dr. JAMES RITCHIE did not believe in local examination until every other reasonable means of treatment had been exhausted. Many cases were due to a low type of inflammatory condition and yielded to douching and ichthyol inunction, and he had known these means to suffice in cases where removal of the ovaries had been advised. The treatment of anæmia and rheumatism often relieved the dysmenorrhœa. As regards the pathology of the condition he considered that there was a periodical flushing of the pelvic organs every month and that the nervous system and vasomotor nerves had a wonderful influence over the amount, so that if the person were ill there was much more likelihood of excessive flushing from excessive dilatation of the blood-vessels. There were certain organs of which we were not conscious in a condition of health but which when they became slightly over-congested immediately became painful. In the treatment of these cases tonics were of advantage.

Dr. HOLMES (Chicago) did not believe in the mechanical theory of obstruction, as the blood that could flow through a capillary could surely pass the internal os with a diameter larger than a capillary. If clotting were present the case was altered. The amount of pain suffered depended on the amount of innervation of the uterus. He had attended a woman who never had any pain with her menses and who passed through her labour entirely without pain until there was distension of the vulva. The uterus in this case was faultily innervated; on the other hand, in dysmenorrhœa there might be excessive innervation. In the States gynæcological practice had fallen off; this was due to the fact that among American girls cycling was exceedingly common and tennis and golf also were cultivated.

Dr. J. W. BALLANTYNE considered it necessary to treat dysmenorrhœa completely till it was cured, not partially and then tell the patient nothing more ought to be done. Constipation was a very frequent cause of the trouble. The more correctly the cause was diagnosed the more successful the treatment would be. With the consent of the patient and the parents this ought to be made in every case and the proper treatment ought then to be applied; otherwise they failed in their duty.

The PRESIDENT specially referred to the appalling results that sometimes arose from the administration of alcohol to young women during painful menstruation. Local examination under an anæsthetic he considered necessary when other means failed. He did not believe that any damage could be done to a girl's feelings by an examination under chloroform at all comparable to the constant dread and anxiety with which the patient must look forward to those monthly recurring attacks. He had known many women to express the greatest gratitude for a comparatively slight operation—an amount of gratitude that might seem unreasonable unless they put themselves in their position.

Dr. HAULTAIN replied.

Professor Sänger of Prague and Professor Fehling of Halle were elected, after ballot, Honorary Fellows of the society.

# Reviews and Notices of Books.

*Reports from the Laboratory of the Royal College of Physicians of Edinburgh.* Vol. VII. Edited by Sir JOHN BATTY TUKE, M.D. Edin., and D. NOEL PATON, M.D. Edin. Edinburgh: Oliver and Boyd. 1900.

THE present volume of these reports is considerably larger than its precedessors, probably for the reason that it is composed not of articles appearing here for the first time as in previous years, but of reprints of work which, though emanating from this laboratory, have seen the light first elsewhere. This change is perhaps the natural outcome of the multiplicity of medical publications at the present time and the not unnatural desire of writers and workers that their results shall be made public both as widely and as soon as possible. Though necessarily less interesting than fresh matter, the periodical collection of work done in individual laboratories and schools has many advantages.

The papers before us are collected into four groups according as they are physiological, anatomical, pathological, or pharmacological. The physiological section contains the great bulk of the material and serves as a monument to the energy and successful industry of Dr. Noel Paton, the superintendent of the laboratory. Both the most

important and, at this time of the year when, like everyone else, the medical man's "fancy lightly turns to thoughts" of his yearly holiday, the most interesting articles are the 18 papers dealing with Investigations on the Life History of the Salmon in Fresh Water. The first 17 of these constituted a report made to the Fishery Board for Scotland in 1898. Among the many interesting points decided in this report it appears that salmon migrate into rivers not from an urgent impulse to spawn, for their genitalia may be found in all stages of development, but because the fish tend to return to what was their original habitat after accumulating the necessary amount of food. Though they take a fly, salmon never really feed in fresh water; there is a peculiar degenerative change in the stomach and intestine of salmon during their stay in fresh water which shows that the organs are for the time functionless. Salmon return to the sea to get food, which is stored up in the body for use during their long fast in fresh water. During the stay in the sea an enormous accumulation or storage of fat takes place in the muscles; this is subsequently utilised to supply the fat of the growing genitals or is used up by the muscles.

Dr. James Dunlop's report on prison dietaries presented to the Prison Commission in Scotland is a complete and laborious piece of work, and contains as an appendix notes on the prison dietaries of other countries. Among the other varied papers that are to be found in this report reference should be made to a valuable series of articles on animal pigments by Miss Newbigin, and to further papers inspired and in part contributed by Dr. Noel Paton.

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*Encyclopædia Medica.* Under the general direction of CHALMERS WATSON, M.B. Edin. Vol. IV.: Foot to Hernia. Edinburgh: William Green and Sons. 1900. Pp. 534.

THE fourth volume of this extensive undertaking appears well up to its promised time and contains a number of authoritative articles written by recognised experts. Thus the editor is to be congratulated on the success that has attended his efforts in obtaining the services of Mr. Mayo Robson as a contributor on Diseases of the Gall-Bladder and Bile-ducts, of Dr. Dawson Williams on Glandular Fever, of Dr. David Newman on Hæmaturia, and of Dr. Graham Steell on Diseases of the Myocardium and Endocardium. It is impossible even to refer to all the articles, but it is only right to draw attention to some of the more notable. Dr. G. F. Still, who is well known in connexion with his careful pathological work on diseases of children, has wisely been chosen to write on the Gastro-intestinal Disorders of Infancy and has admirably justified his title thereto. Dr. A. E. Garrod's name is so rightly associated with modern knowledge on urinary pigments that it is satisfactory to find that he is responsible for the articles on Hæmoglobinuria and Hæmatoporphyrinuria. The heart is fully treated in this volume and an extremely careful and accurate contribution on its pathology is provided by Dr. T. N. Kelynack, who is associated with his former teacher and present colleague, Dr. Graham Steell, in the valuable section on diseases of the myocardium and endocardium. Lastly, while congratulating Dr. Watson on his success in an editorial capacity, we must compliment him on his admirable contribution on the important subject of Gout.

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*Annual and Analytical Encyclopædia of Practical Medicine.* By CHARLES E. DE M. SAJOUS, M.D. Vol. V.: Methyl-blue to Rabies. Philadelphia, New York, and Chicago: The F. A. Davis Company. 1900. Pp. 662.

THE present instalment of this useful book of reference bears the date of October, 1899, and contains, in addition to a succinct account of the subjects treated, references to the literature of the three years 1896-97-98. Each article is complete in itself, and though it embodies, does not confine itself to, the advances of comparatively recent years. In these days of specialism the present volume must have been a laborious one to bring out, for it includes many specialties—otology, laryngology, neurology, obstetrics, ophthalmology, pediatrics, &c., in addition to subjects classed under general medicine and surgery. The printing and general appearance of the work are fully up to the standard of the preceding volumes, and, like them, volume V. will serve as a useful source of reference.

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*Progressive Medicine.* Vol. I., March, 1900. Edited by HOBART AMORY HARE, M.D., assisted by C. A. HOLDER, M.D. London: Henry Kimpton. 1900. Pp. 428. Price 12*s.* 6*d.*

THIS is the first volume of the second year of Dr. Hare's summary of current medical literature, and is planned to provide the busy practitioner with an account, not of everything that has been written, but of those contributions that really mark an advance and are worthy of his time and attention.

In the surgery of the head, neck, and chest there is a useful *résumé* of the operative treatment of tuberculous disease of the lung. The next section, on infectious disease, including acute rheumatism and pneumonia, under the care of Dr. F. A. Packard, contains a coloured plate of Koplik's spots on the buccal or labial mucous membrane—the pathognomonic sign of measles. Dr. Blackadder has put together a very readable and interesting account of the recent work in diseases of children, while the account of the last year's advance in pathology by Dr. Ludvig Hektoen covers a great deal of ground and contains a large amount of interesting information. The volume closes with two reports on the Progress of Laryngology and Rhinology by Dr. Logan Turner of Edinburgh, and on Otology by Dr. Randolph of the Johns Hopkins University, Baltimore. In conclusion, the editor may be congratulated on the continued success of this useful medical quarterly.

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## LIBRARY TABLE.

*The Standard Intermediate-School Dictionary of the English Language.* Designed to give the Orthography, Pronunciation, Meaning, and Etymology of over 38,000 Words and Phrases in the Speech and Literature of the English-Speaking Peoples. With 800 Pictorial Illustrations. Abridged from the Funk and Wagnalls Standard Dictionary of the English Language by JAMES C. FERNALD, Editor of the Students' Standard Dictionary; English Synonyms, Antonyms, and Prepositions; The Spaniard in History, &c. London: Funk and Wagnalls Company. Price 4*s.*—This dictionary is certainly in many ways a remarkably good one. It is not, of course, satisfactory in every way, as, for instance, in the definition of the word "camel," although a good illustration is given of the Bactrian or two-humped camel of Asia no mention is made of the fact that the African variety has but one hump. This variety is given under the word "dromedary." Again, under the word "spider" we find the following: "An insect-like creature that spins a thread and makes webs to catch its prey." We cannot agree that a spider is an insect-like creature, neither do all spiders make webs to catch their prey, as the definition would probably convey to one who did not know. On the whole, however, the book will be found very useful and we are glad to see that in the illustrations of animals the amount of reduction is given.

*For Britain's Soldiers.* By RUDYARD KIPLING, S. R. CROCKETT, Sir WALTER BESANT, and others. Edited by C. J. CUTCLIFFE HYNE. London: Methuen and Co. 1900. Pp. 315. Price 6*s.*—Detailed criticism is out of place with regard to a book like this one, for all the stories were written by their respective authors as a contribution to the war fund, while the publishers are giving all the profits for the same object. But we may say that all

the stories are eminently readable and some are remarkably good. Mr. Rudyard Kipling introduces us to the son of the immortal Estreekin Sahib whom we all admired in the "Mark of the Beast." Adam is, indeed, his father's son, and one to be proud of. Sir Walter Besant supplies an interesting little study in psychology and Mr. A. E. W. Mason gives us as creepy a story as ever was written. The art of horrifying by the use of the indefinite is not within everyone's power, but Mr. Mason's account of the ride through that dreadful ravine ranks with the closing scenes in Lefanu's "Watcher," with that awful scene in "Dr. Jekyll and Mr. Hyde," where the butler and Mr. Urmson stood outside the locked door, and with the nameless horror of Miss Violet Hunt's "Story of Mrs. Arne." The book is one for holiday-makers to read.

## JOURNALS.

*Caledonian Medical Journal.*—In the July number Mr. Alexander Macdonald of Inverness concludes his articles on the Ethnology of the Scottish Gael, the first of which was noticed in THE LANCET of April 21st (p. 1139). About the sixth century there were three principal kingdoms in Scotland—namely, the Pictish kingdom on both sides of the Grampians; the kingdom of Strathclyde, occupying Mid-South Scotland; and the kingdom of the Scots (who had come over from Ireland) in the south-west. The Picts were, he believes, an early offshoot northwards of Britain's (i.e., England's) earlier settlers who not improbably came into Scotland when another section of the same people migrated into Ireland. A few centuries later the Scottish Gaels might be resolved into two nearly equipotent races—(1) the Brito-Scottic, or early Celt, of dark hair, dark eyes, dusky skin, and small limbs; and (2) the fair or xanthous Celt, of fair or flaxen hair, blue or light-grey eyes, clear skin, and large limbs. In conclusion Mr. Macdonald describes at considerable length the facial characteristics of the modern Highlanders, classifying their features as "Ibero-Celtic," "Germano-Celtic," and "Scandinavian Celtic."

*Dublin Journal of Medical Sciences.*—The original communications in the July number are on Epidemic Cerebro-Spinal Meningitis, by Dr. H. C. Drury; on Epidemic Cerebro-Spinal Meningitis in Dublin, by Dr. A. R. Parsons; and on the Symptoms or Phenomena formerly known as Croup, by Mr. Langford Symes.

# New Inventions.

## AN APPLIANCE FOR DEODORISING ESCAPING SEWER GAS.

THE disgusting emanations which escape from fresh air drain inlets or from sewer ventilators, whether from the gratings in the roads or from shafts against buildings, are a constant source of annoyance and very often also of ill-health. Several attempts have been made, with more or less success, to render these aereal effluents innocuous. The latest addition to these contrivances has just been submitted to us by the inventors, Messrs. Bostel of 73, Ebury-street, S.W. It consists of a metal box about four inches square which fits over the inlet pipe having a grid on one side. Internally the box contains a glass dish filled with some non-corrosive disinfectant. For this purpose pine oil is to be recommended, for in addition to its pleasant smell this oil does undoubtedly absorb oxygen which it gives up again in contact with foul gases, thus destroying their noxious and unpleasant character. Behind the face of the grid is a screen composed of a number of small woollen wicks the lower ends of which rest in the disinfectant which ascends the wicks and keeps them loaded by capillary force. The air passing in or out through the grid travels through the screen and comes into intimate contact with the disinfectant, and thus the foul emanations are cleansed. The idea is certainly ingenious and so long as the apparatus is attended to its object will be gained. Every part is easily accessible, so that no difficulty need be experienced in keeping it in order. A small apparatus constructed on a similar principle is made for the diffusion of a volatile disinfectant in the air of the water-closet or other places where unpleasant smells are in evidence. The apparatus is inexpensive, is in use in our offices and elsewhere, and has given every satisfaction. It certainly appears to provide a much needed accessory to our systems of sewer ventilation both on the domestic and the large scale.

# THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE:

## A LAST WORD.

THE Thirteenth International Congress of Medicine will be held at Paris from August 2nd to 9th inclusive.

### HOW TO BECOME A MEMBER.

Every duly qualified medical man wishing to become a member of the Congress must send to the offices of the Congress at 21, rue de l'Ecole de Medécine, (1) his name, Christian name, and qualifications; (2) his address; (3) his subscription of 25 francs; and (4) a note showing to which section he wishes to be inscribed as belonging. Names can be sent in up to the date of opening of the Congress, but in order to obtain railway facilities they had better be sent in as soon as possible.

### PROGRAMME OF THE CONGRESS.

The Congress will sit every day except on Sunday, August 5th, and hold either general meetings or sectional meetings.

A. *General meetings.*—These meetings will be three in number and will unite all sections of the Congress. They will be devoted to the customary addresses and to the passing of the usual votes. (No one can deliver an address at a general meeting unless he has been previously invited to do so by the Executive Committee.)

B. *Sectional meetings.*—These meetings will be held every day. They will be devoted to the reading of papers and to discussions thereupon. Any member can take part in any of the work of any section whatever be the one to which he shall have been formally allotted.

C. *Visits to hospital and laboratories.*—Some sections have organised visits to the above establishments for certain days and at certain times. But in addition to these corporate visits members of the Congress are at liberty to visit any hospital or laboratory which they may choose.

*Fêtes.*—We have already given a list of the fêtes to be held during the Congress in our issue of July 7th, p. 34.

The *railway arrangements* for British members were published in our issue of July 14th, p. 127.

### THE GENERAL MEETINGS.

So far the arrangements are as follows:—

At the *first general meeting* to be held on August 2nd at 2 P.M. in the Salle des Fêtes de l'Exposition, with the President of the Republic in the chair, the following addresses will be delivered:—Official addresses: (1) address by the President of the Congress; (2) report of the General Secretary of the Congress; and (3) addresses by the delegate members of foreign Governments. Scientific addresses: (1) address on Traumatism and Infection, by Professor Virchow; and (2) address on Experimental Therapeutics as a New and Fertile Method for Physiological Research, by Professor Pavlov.

The *second general meeting* will be held on August 6th at 2 P.M. in the large theatre of the Sorbonne, when the following papers will be read:—Professor Baccelli, On the Treatment of Tetanus by Hypodermic Injections of Carbolic Acid; Professor Sir J. Burdon Sanderson, Some Pathological Problems of To-day; Professor Jacobi, Medicine and Medical Men in the United States; and Professor Albert, On the Architecture of Bone in Man and in Animals.

The *third general meeting* will be held on August 9th at 2 P.M. in the large theatre of the Sorbonne, and the business will be as follows: award of the triennial prize founded in 1897 and given by the city of Moscow; announcement of the place of meeting and the names of the officers of the Fourteenth International Medical Congress; and declaration of the closing of the Congress.

# THE LANCET.

*LONDON: SATURDAY, JULY 28, 1900.*


IN March, 1800, the Royal College of Surgeons of England received from GEORGE III. its first charter and during the present week the College has been celebrating the hundredth anniversary of its foundation. The history of the granting of the Charter and of the College during these 100 years is not without interest.

Towards the end of the eighteenth century the old Company of Surgeons came to a somewhat inglorious end through the illegal action of part of its governing body, and an attempt to reconstitute it by an Act of Parliament in 1797 was thrown out at its last stage; but three years later the Royal College of Surgeons was established by a Royal Charter. To it was intrusted the care and maintenance of JOHN HUNTER'S museum. The members of the Council under this Charter of 1800 were elected for life and filled any vacancies which might occur in that body by coöptation and by such a method of election it cannot be supposed that a very efficient governing body would be obtained. The museum and library were not utilised as they deserved. The museum for many years was uncatalogued and was open to the Members only during four months of the year, and then only for four hours each day. To the library the Members of the College were not admitted at all. These were only a few of the evils under which the College laboured. Reform in some measure gradually took place and the rights of the Members were recognised to a slightly greater extent; but it was felt that while the constitution of the College remained unaltered no thorough improvement could be effected. At last, after years of discussion and of debate, the Government decided to make the Council an elected body, but it was thought undesirable to confer the franchise on the whole body of Members, and therefore it was decided to create a new body of Fellows, to whom should be intrusted the right to elect members of the Council. Members of the College were to attain to the higher rank of Fellows by examinations of increased severity, but the first Fellows were all elected to that dignity from the general body of Members. It is under this constitution that the College at present exist and that it has merits cannot be denied. The number of Fellows has greatly increased, so that they now exceed 1200, but even at the present day the constitution of the College is oligarchical and the government is even narrower than it appears, for many of the acts of the College, which should be the work of the Fellows at least, if not of the Members, such as the election of the President and the appointment of the representative on the General Medical Council, are performed by the Council itself. The stream of reform in the College, however, still flows on, if slowly. Year by year greater concessions are granted to the Fellows and the Members. The museum is now open for nearly the whole year and for many hours a day. Every year at a general meeting of the Fellows and Members the Council presents a statement of the work done during the past year, and although these meetings have no legislative or executive power, yet their very existence forms a tacit acknowledgment of the right of the Members to a share in the body corporate. The tone also of the Council is changing and we may look forward with confidence to seeing at no distant date the Members allowed a part in the government of the College. Brief though this sketch of the history of the College may be, yet it will serve to show that substantial progress has been made in converting the institution set up in 1800 into a College of Surgeons founded on a broad basis of justice to all the constituents of the body corporate. Of the many other internecine conflicts that have occurred it is unnecessary now to speak. Suffice it to say that the original *non possumus* attitude of the Council is passing away. Slowly and reluctantly it yields to the steady pressure of modern thought and feeling.

Whatever opinion may be held as to many of the acts performed during its corporate life—and few indeed will be found willing at the present day to support all the actions of the Council during the early years of the century—all will agree that the Royal College of Surgeons of England is a most important element in surgical education and examination in this country. Although it is only one out of 22 examining bodies in the British Isles which have the power of conferring a licence to practice, yet it is probable that there is no body which exceeds it in beneficial influence on surgical knowledge at the present day. In two respects it is practically unequalled.

In the first place the unrivalled museum is a collection of which any institution might be proud. It is founded on the specimens prepared by JOHN HUNTER at an enormous expense. These were bought by the Government for £15,000 at HUNTER'S death and they were given into the custody of the Royal College of Surgeons. The collection has been greatly increased so that the preparations at present exceed by many times the original number. They include specimens connected with normal human anatomy and with pathology, anthropology, and zoology. There is also a very elaborate series of specimens illustrating physiology. It may safely be said that there is no other museum like it in the whole world.

The library also, though perhaps not quite so peerless as the museum, contains an exceedingly good and extensive collection of books connected with medicine and the allied sciences.

The work of the College in surgical education has been great in the past; it may well be much greater in the future. Let the Council make such arrangements as shall utilise to the full all the teaching power of the museum and the library; let there be established in addition to the few lectures given now to scanty audiences series of lectures on special branches of surgery, anatomy, and zoology, to be illustrated by the specimens from the museum. In this way the teaching power of the College could be greatly increased in addition, and not in opposition, to the ordinary lectures of the medical schools of London.

On the occasion of the centenary celebrations honorary diplomas have been conferred on the PRINCE OF WALES,

the Marquis of SALISBURY, the Earl of ROSEBERY, and many eminent men of this country and from abroad, and for this purpose a special supplementary Charter was obtained.

Although on many occasions we have felt it to be our duty to point out faults in the management of the College, yet we confess that in spite of all its faults—and they are many—we are proud of possessing in this metropolis of the world an institution like the Royal College of Surgeons of England.

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THE starting-point of the wide discussion of the pathology of the nervous system presented to us in Dr. MOTT's lectures[1] is the nerve-cell, the central nutritional element of the neuron. The peculiar granules revealed in its substance by basic staining agents, the method of NISSL, he regards as revealed, but not actually produced, by the influence of the hardening process. When the cells have been stained during life the granules are invisible, but this only shows that the hardening agent has increased the contrast between tissues that present a chemical and functional difference during life which is augmented by the process to which they are subjected after death. These Nissl granules are of great pathological importance on account of the changes they present in many conditions. They seem to consist of a nucleo-proteid substance which is precipitated in hardening, and is regarded as lying between the nerve fibrils which pass through the cell; it seems to be a protoplasmic substance intimately related to the nucleus of the cell and to its vital function. A change in the appearance of these granules and their coalescence attend most important functional alterations, and when they unite, so as to fill the cell with a mass homogeneously coloured, the conducting fibrillæ are apparently so far damaged as to be no longer capable of function.

The investigations of WALLER not only revealed the dependence of the nutrition of the nerve-fibres on the cells from which they proceed, but, as Dr. MOTT shows, he distinctly anticipated the conception of the functional units which is the essence of the neuron theory. Later research has shown that the section of the axis-cylinder has an upward influence on the cell, although far slower and slighter than that on the peripheral part of the nerve. This upward influence was, indeed, observed as a late result of amputation by Dr. W. H. DICKINSON long before the modern means of discerning the early and slighter changes in the nerve-cells were available. These changes are remarkable. After experimental division of the nerve the protoplasmic granules which stain so readily no longer remain distinct and the nucleus is displaced towards the periphery of the cells. A similar change is observed in cases of peripheral neuritis in which the axis-cylinder perishes at a distance from the cell. If recovery is possible the cell increases in size, the staining material resumes a more normal aspect, and the nucleus regains its central position. Ultimately the normal aspect returns after the nerve fibre has regenerated. The enlargement of the cell is regarded as evidence of physiological activity connected with the increased trophic energy. If the damage to the nerve is too severe to be recovered from, slow progressive changes occur in the proximal part of the fibre, with diminution of the myelin, and ultimately changes in the axis-cylinder and the alterations in the nerve-cell, instead of diminishing, progress to atrophy.

The slighter but definite changes in the nerve-cells when the nerve-fibre recovers have an interesting practical application which it was perhaps beyond Dr. MOTT'S province to notice. After recovery from pure peripheral inflammation such as that of the facial nerve, which causes the common form of facial paralysis, a remarkable over-action invariably ensues, in consequence of which there is undue tonic contraction of the muscles, sometimes accompanied by clonic contractions, and an associated over-action between the upper and lower parts of the face. It has been recognised that this must be ascribed to a morbid state of the nucleus, secondary in some way to the disease of the nerve trunk. The observed changes in the cells are important in this connexion. The associated over-action is, however, of muscles too distant to be explained by the changes in the individual cells, but the dendrons which convey the impulses to the cells must share the disorder of nutrition of the latter, and we are thus able to perceive a possible mechanism for this peculiar symptom, which has also been observed as a sequel to paralysis of the nerves of the arm.

Dr. MOTT'S observations on the appearances in the nerve-cells of the brain in experimental anæmia, which is soon relieved by the collateral circulation, are of considerable interest. He finds the transient disturbance of function is associated with swelling in the cells, an alteration in the arrangement of the staining Nissl granules, and a displacement of the nucleus towards the periphery of the cell, which may proceed to its extrusion and the death of the cell. The amount of destructive change can be traced by subsequent degeneration of fibres in the spinal cord. The slighter alterations gradually pass away if the circulation is soon enough renewed, and the several degrees of change closely resemble those which have been found in experimental anæmia of the spinal cord, according to its duration and in correspondence with the transient or permanent paralysis of the limbs which results. Another instructive subject is the influence of temperature on the nerve-cells. Their condition in cases of hyperpyrexia in the human subject shows a remarkable correspondence with those which have been found in animals that have been exposed to heat. In proportion to the degree and duration of the temperature there is the same confluence of the Nissl granules above described, indicating a profound alteration in the protoplasmic constitution of the cell. In man, however, the conditions found may be sometimes in part ascribed to the toxic agent which causes the high temperature. The proteid constituents of the nervous matter coagulate at different temperatures, and it has been found that one of the most important of these coagulates at a lower temperature if the exposure is more prolonged. A slighter degree of pyrexia for a longer period causes the same change as a higher degree for a shorter time. Thus, chemical investigations throw some light on the processes observed in disease. Moreover, it has been found that a slight degree of the change induced by hyperthermia is compatible with recovery, as is the

[1] See also leading article, THE LANCET, July 21st, 1900, p. 198.

similar change observed after injury to a nerve, and Dr. MOTT suggests that this may indicate a mode in which the cold bath effects its beneficial influence by reducing the temperature before its effects have continued so long as to preclude recovery.

The influence of toxic agents in causing degeneration of the neuron is perhaps the most important part of the subject from a practical point of view. It is this influence which has led to the wide extension of our knowledge of the mechanism of disease and the causes of symptoms. The toxic agents may be derived from without or may be generated in the body by micro-organisms or by perverted normal processes. The special selective influence of these toxic agents on certain parts of the nervous system is a familiar and special feature of their action of which Dr. MOTT gives many striking illustrations. As he insists, it shows that the tissue of the nerve structures of different function presents some slight modification in constitution which involves a different susceptibility. A striking instance of the difference in selective action which is caused by a most trifling difference in chemical composition is the discovery of Dr. A. WALLER that the difference of a molecule of water determines the action of one poison, veratrin, on the muscle or on the nerve. One of the most striking instances of local influence is afforded by the poison of tetanus. The affinity of this for nervous matter is strikingly shown by the fact that it loses much of its poisonous power if previously made into an emulsion with nerve substance. There is much discrepancy of observation regarding the occurrence of changes in the nerve-cells of the spinal cord after death from the tetanus toxin, a fact which may find its explanation in the chief action of the poison on the extremities of the dendrites.

The study of the chemistry of nerve degeneration has yielded interesting results, some of which are perhaps still open to the criticism which very few are qualified to afford. One practical point on which Dr. MOTT brings forward some weighty evidence is the probability that some of the symptoms in diseases attended with rapid nerve degeneration are due to the toxic influence of the products of the nerve tissues themselves. Choline, which seems to be a normal product of the metabolic changes in the nerve structures and is produced normally in small quantities and passes out of the system probably as urea, is found in general paralysis in amounts large enough to cause its characteristic effect of lowering the blood-pressure. Another product, neurine, which is thought to be sometimes produced in degeneration, has highly toxic qualities. The amount of proteid matter in the cerebro-spinal fluid in general paralysis is three times the normal and experiments seem to show that it would favour an occurrence of congestive stasis and even thrombosis in this disease. Dr. MOTT is inclined to attach much weight to this influence in causing special changes in the frontal and central convolutions because the veins from these ascend into the longitudinal sinus, and even open into it, so that the blood from them enters in a direction opposite to the current in the sinus. But it is to be noted that the current in this part of the sinus is very feeble and the influence of the descending blood in the posterior part is probably sufficient to prevent much tendency to stasis. If the mechanism were really effective, actual thrombosis in the veins of this part should be a more frequent incident in general paralysis than it is.

The close pathological relationship of general paralysis and tabes, which has been widely recognised, and formed the subject of a discussion at the Pathological Society which was opened by Dr. MOTT, is discussed in his fourth lecture. It is more than 20 years ago since WESTPHAL pointed out the frequency with which the posterior columns of the cord are degenerated in general paralysis of the insane, and the frequency with which the symptoms of the two diseases are combined, the frequency with which those of one or the other predominate or are chiefly manifested in the early stage of the disease, has been repeatedly noted. In the cases in which the combined symptoms are present, some special symptoms characteristic of tabes may occur in general paralysis when pronounced tabetic symptoms are absent. Of this Dr. MOTT gives many striking illustrations. The occurrence of loss of the reflex action of the iris to light has been frequently observed in general paralysis, and some instances are given of perforating ulcer of the foot and of tabetic arthropathy in this disease. In many of the combined cases in which the symptoms of tabes lead the way, these continue slight, remaining in the "pre-ataxic" stage after the mental affection has developed. The lecturer has had a unique experience of juvenile general paralysis and finds it associated with congenital syphilis just as juvenile tabes is known to be. He regards the two diseases—tabes and general paralysis—as really one, affecting sometimes the neurons which associate different parts of the central and frontal convolutions and in others the neurons of the posterior ganglia of the cord. The only objection to this which can be taken depends on the conception attached to the word "disease" and on the importance to be given to distinctive symptoms presented by a similar process in different regions.

There is, of course, a very large amount of assumption in Dr. MOTT'S lectures, and its quantitative estimation is a task for which very few can present the requisite knowledge. This does not lessen their value, because a careful reader can discern where the process comes in. Suggestion is precious if only it is taken as it should be—as an indication of the direction in which to look for truth. The field of science which he has ploughed with remarkable skill is in the most advanced region into which pathological knowledge has penetrated. It is certain that his lectures, fruitful as they are, will have far more prolific results from the investigations to which they will give rise.

But their admirable character and the manifest extent to which they are dependent on the opportunity and facilities afforded by the arrangement of the London County Council excite in us one regret. We should like to see the therapeutics of insanity investigated in a manner equally thorough and equally scientific under the same auspices. At present individual symptoms are relieved and all available external circumstances are combined to facilitate recovery, but how seldom is any systematic effort made to influence the course of disease by medicinal treatment. It is regarded as useless, and the belief that it is so is the cause of the absence of effort. The experience of many physicians outside

asylums testifies to the fact that even in general paralysis wisely ordered medicinal treatment is not seldom strikingly beneficial, but we hear little of attempts thus to influence the disease in asylums. The lectures of Dr. MOTT contain abundant evidence of the influence of certain definite substances of known chemical composition in causing disease. There is sufficient evidence also that drugs of definite composition may be employed to relieve or cure disease. We confess that we should be glad to hear that the London County Council has ordered a wing of one of its asylums to be set apart for cases, carefully selected, each one of which should be subjected to systematic treatment by suitable chemical agents, the results of which should be closely and persistently observed, recorded, and ultimately reported for the general good. No doubt most alienists will regard the suggestion as visionary, but we do not doubt that many of our readers who have had opportunities of observation will agree with us that the results would not improbably justify its adoption.

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ALL members of the medical profession in this country must feel desirous of seeing the matters in dispute between the Council of the British Medical Association and a large section of the members of the Association amicably settled. Even the most advanced members of this section would disclaim any wish to weaken the power of the Association or to diminish its numbers. But the difference of opinion between the Council and those who succeeded in defeating it at the special meeting in Exeter Hall on July 18th is considerable and this fact must be faced. It does not seem to us that matters are incapable of adjustment if a little moderation on both sides be observed and clear ideas be kept in the ascendant as to the nature and the objects of the Association. The general meeting at Exeter Hall had an importance which general meetings of the Association, and conspicuously the general meetings of the annual congress, have not often had. It had the importance of numbers, coming in this respect nearer to what a general meeting of an association with 17,000 members or more should be. Comparatively small numbers always assemble at general meetings of the profession to discuss alleged grievances—a fact which shows that after all we are a profession and not a trade and that scientific and professional questions have a charm for us that ethical and social questions have not. At the annual meetings of the Association it is difficult to get a general meeting together with a larger attendance than 50 or 60. Dr. J. R. THOMSON, the chairman of the Council, says that 30 is a good average attendance for these general meetings. But at the Exeter Hall meeting last week there was an attendance of 270 or more when the Council failed to obtain the requisite majority of three-fourths for the adoption of the new Articles of Association.

We need not here enter into all the details of difference between the Council and those who defeated it, but it would be foolish to make light of the difference or to neglect any reasonable means of removing it. The essence of the difference is that the Council think it best for the Association that the management and control of the business and affairs of the Association, including the disposition and expenditure of its funds, should rest with the Council, while the majority of the members present at the Exeter Hall meeting consider that the individual members of the Association acting through general meetings should have more power. The Council at the Exeter Hall meeting submitted a new set of regulations embodying their views and the thirty-fifth clause of these new articles [1] is the one round which the chief contest rages. This clause gives to the Council the important powers to which we have alluded, vesting the whole business conduct and pecuniary discretion of the Association in the Council practically without appeal. It is very natural that the members should wish for more powers, but it is obvious that these can only be exercised mediately. 17,000 men cannot all govern an association. Some means must be found of easily ascertaining the views of the majority of the members and of securing for them complete expression in the Council. The difficulty is to ascertain what the real majority of members actually think. A mere general meeting does not necessarily help much towards finding this out. As we have seen, these meetings are generally scantily attended, and are not unfrequently monopolised by a few louder voices. Of one thing we are certain. To make the Council mere delegates, every councillor being pledged to vote in accordance with the views of his constituency, would be an unsatisfactory way of governing the Association. Men who have to give the last judgment on a question of importance should be in a position to hear all sides of it and to decide accordingly. For a member to issue a post-card to the Council with a cut-and-dried deliverance on a difficult question and for this deliverance to bind the executive of an association with 17,000 members would be an easy and flattering way of governing so far as the member is concerned, but not one that would be likely to conduce to the moral, scientific, or financial reputation of the Association.

A few well-attended general meetings at which some plain speaking on both sides might be advisable, would do much to effect a reconciliation of view between the Council and the members. It will probably be found that the best way of increasing the attendance at general meetings and their authority will be to hold them separately from the annual meeting at some convenient centre. The Ipswich meeting will have a great advantage in following so closely on the discussion at Exeter Hall, and it is to be hoped that all parties will come together with a disposition to find a *modus vivendi* which, while securing respect for the opinion of members of the Association, will leave the chief control over its business and expenditure with the Council. There is no derogation from the function of members in leaving such control with the Council so long as members have due control over the election of the Council, any more than it detracts from the English constitution that the House of Commons has control over the public purse. The number of the Council exceeds that of the average general meeting, and it is an elected body representing more or less all the members. Such a body cannot be called an autocracy or

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[1] See Brit. Med. Jour., July 7th, p. 54, et seq.

an irresponsible junto. It will not conduce to the stability and influence of the Association to lessen the responsibilities of the Council or to make it too easy for a small number of members to tamper from time to time with its regulations and by-laws. And as long as general meetings are so sparsely attended their views must be regarded as the views of a small number.

THE First International Congress on Medical Ethics or Deontology commenced its sittings in Paris on Monday, July 23rd, and comes to an end to-day, Saturday, July 28th, thus overlapping the Congress of the Medical Press and impinging upon the great International Congress of Medicine. The plethora of congresses arranged to take place in Paris during the end of July and the beginning of August should have led to larger attendances for the view that the medical man interested in any one of them, finding himself in Paris, would inevitably attend them all, was a probable one. As a matter of fact, however, a great many medical men, especially English medical men, have been frightened away by the fear of finding Paris over-full of the medical world. In England other abstentions have been due to the fact that the British Medical Association meets at Ipswich during the first week in August and also to a widespread feeling that the attitude of France, especially of Paris, is so inimical to England that the Englishman is better away from the beautiful city of pleasure. We trust that even if the attendance be a little sparser than was expected the proceedings at the Congress of Deontology will be thoroughly successful, for the work that it proposes to do lies very near our heart. It is impossible that a body of earnest men, attending either as delegates from ethical bodies or on account of their own individual work in ethical fields, can deliberate carefully upon the important practical questions comprised under the phrase "deontology" without some good accruing to the medical profession. We are aware that the different customs of different nations no less than the various ways of regarding social problems of all sorts preclude any idea of an international code of medical ethics being established; but medical men of all nations will be benefited by learning what situations are created in other countries than their own by hospital abuse, by quackery, and by lay exploitation. On p. 275 of our present issue will be found a report from our special correspondent of the proceedings at the First International Congress on Medical Ethics, and the success that has already attended the formation of medical unions in Austria and Belgium should encourage those members of the British medical profession who have made practical attempts in this country to the same end.

# Annotations.

"Ne quid nimis."

## THE PATHOLOGY OF INSOLATION.

AT a recent meeting of the New York Academy of Medicine Dr. Ira van Gieson read a paper on sunstroke, a subject which has just now a special importance. The pathology of this affection was still unknown. The symptoms and manifestations had interesting resemblances to those of poisoning by snake venom, while the loss of consciousness and the convulsive and tetanoid seizures brought it into relationship with the coma of diabetes and uræmia in particular. Among the pathological theories two occupied a prominent place. The caloric theory stated that the symptoms were due to the direct action of excessive heat on the body, and important facts illustrating or confirming this view were furnished by the experimental investigations of Goldscheider and Flatau, Ewing, and others, who had found certain characteristic (destructive) lesions in the cerebral and spinal nerve-cells of animals submitted to artificial hyperthermia which ended fatally with symptoms resembling those of sunstroke. Dr. van Gieson points out that these changes might be secondary to changes in the blood brought about by exposure to the excessive heat to which these animals were subjected. The toxic or autotoxic theory sought to trace a toxic agent which circulating in the blood acted on the nerve-centres as a poison. He stated that his investigations and experiments at the Pathological Institute in New York during the epidemic of sunstroke in 1896 convinced him that the disease was due to an acute toxæmia originating somewhere in the body and acting violently on the nervous system, particularly on the cells which governed the heart and controlled the vaso-motor apparatus. The delirium, convulsions, opisthotonos, and mental derangement could be partly explained as the outcome of such a poisoning of the nerve cells by an agency of autogenous origin. In cases which resulted in recovery within a few hours there was probably very little degeneration of the ganglion cells. Between this grade and that in which the cells were permanently damaged there were probably many intermediate conditions. "The source of the poison, as well as its relation to the cessation of perspiration prior to and during the attack, were unknown. The sudden onset of the disease favoured the autotoxic theory." Experiments on animals made by Dr. P. A. Levene showed that the blood of patients suffering from insolation contained a poison the virulence of which was as great as that of some snake poisons and in some respects resembled their action. The urine of convalescent patients when injected into the circulation of rabbits was found to produce decidedly toxic results, and injections of blood serum taken from two patients gave prompt and decisive results. The two classes of animals which perspired most—viz., human beings and horses—were the ones which showed the most marked classical symptoms of sunstroke. Probably the pathogenesis of sunstroke could be formulated somewhat as follows. The exciting cause in the form of excessive external heat induced a change in the blood the nature of which was unknown. As a result of this an angio-paresis resulted, this being probably caused by a paralysis of the vaso-constrictor nerves due to the toxic action of the altered blood. The cessation of perspiration in the subject of sunstroke and the accumulation of carbonic oxide in the blood were concomitant with the angio-paresis. With the angio-paresis and the accompanying stasis of blood in the vessels began the hyperpyrexia, for they interfered with the free radiation of heat from the cutaneous surfaces to the extent of 80 or 90 per cent. The toxic condition of the blood acting upon the cerebral nerve-cells produced loss of consciousness. The best working hypothesis, sustained to some extent by the few facts definitely ascertained, pointed to an auto-intoxication of somewhat sudden origin. It was interesting to observe that as in the cases of persons dying from snake-poisoning the post-mortem clotting of the blood was retarded. In the discussion following the reading of the paper Dr. P. A. Levene observed that in sunstroke there were a marked diminution of the urine secreted (ischuria), a decrease in the quantity of urea and other ingredients, and the specific gravity of the urine was lowered. This fact could not be explained by postulating an organic change in

the kidneys, such as parenchymatous nephritis, as no albumin or casts could be detected in the majority of cases. Pfaff of Harvard had recently demonstrated that defibrinated blood influenced the function of the kidneys in a similar manner to that produced by sunstroke. This would suggest that extreme heat produced changes in the blood similar to that produced by defibrination, or probably even rendered the blood less coagulable than normally. The latter fact was observed by some pathologists in cases of sunstroke and would be a corroboration of the autotoxic theory. Dr. George M. Parker, who was a resident physician in hospital at the time of the epidemic of sunstroke in 1896, said that the mortality was 66 per cent., death occurring in from 12 to 36 hours after the onset of the attack. The symptoms were those of an acute general poisoning. Comparatively few cases of sunstroke occurred until the hot weather had lasted for several days. Dr. Charles A. Whiting, referring to the same epidemic, emphasised the statement that the cases were rare during the first two or three days of the hot spell and then began to multiply rapidly.

## THE RELATIVE VITIATION OF THE AIR OF ROOMS PRODUCED BY VARIOUS HEATING AND LIGHTING APPLIANCES.

"WHEN a coal fire is in use for heating and the electric light for lighting an inhabited room the air is purer than by any of the other plans tried for heating and lighting." Such is, perhaps, the most important conclusion arrived at in an interesting investigation on this subject by Mr. Francis Jones, F.R.S.Edin., F.C.S. The results are published in a *brochure* which has recently reached us. This conclusion may have been anticipated when the conditions described are considered. But Mr. Jones's investigation has led to other observations which are not less in point of interest as bearing upon the question of the healthy condition of domestic apartments. He finds, for instance, that the air of a room, however heated and lighted, is purest at the floor, less pure three feet above, and most impure at the ceiling, and that when a gas fire is in use for heating and the electric light for lighting the amount of carbon dioxide in the room rises rapidly in the first two or three hours and then remains uniform for three or four hours afterwards. When a coal fire is in use and an ordinary gas-jet is burning the air of the room is purer than when a gas-fire is in use and an ordinary gas-jet burning. The use of a gas cooking-stove with a flue connected with the chimney greatly raises the amount of carbon dioxide in the air of the room. The humidity of the air of the room is much diminished by the use of gas-fires. We do not find any reference to the work of THE LANCET upon this subject, but if Mr. Jones will refer to the report of THE LANCET Special Analytical Sanitary Commission published in THE LANCET of Nov. 25th, 1893 (pp. 1326–1336), dealing with gaseous fuel, gas-heating, and gas-cooking appliances, and also to the report of the same commission on the Incandescent System of GAS Lighting, published in THE LANCET of Jan. 5th, 1895 (pp. 51–55), he will see that some of the conclusions there arrived at are in harmony with his own, and he will find also other results of equal interest in connexion with this subject. Mr. Jones, however, has made a useful departure by employing permanganate of potassium for the estimation of impurities over and above carbonic acid, which has no effect upon permanganate. Oddly enough, although the permanganate tests determine different impurities from those of the carbon dioxide tests there is a remarkable agreement between the two sets of experiments. Thus when the carbon dioxide is low the permanganate is only slightly affected; when it is high the permanganate is greatly altered. The question remains as to what the concomitant impurity is. The results are so parallel as to suggest a product of combustion produced uniformly with the carbonic acid. May this not be due to the sulphur ever present, though in small quantity, in coal gas? It should be remarked that weak solutions of permanganate of potassium undergo deterioration in a pure atmosphere, and this raises a doubt as to whether the method is reliable. Still, the results certainly show a remarkable uniformity. We should like to suggest to Mr. Jones that in continuing his interesting experiments he should try the effect of oil lamps. The results would be of interest since oil burns into little else than carbonic acid and water and the question of sulphur would not obtain. The permanganate method adopted by Mr. Jones was that of exposing a solution of permanganate of potassium in a shallow porcelain tray and afterwards estimating by a well-known method the reduction effected in the strength of the permanganate.

## THE NOBLE OFFER OF THE MAHARAJAH OF GWALIOR.

IN the House of Commons on the night of July 23rd various questions were asked as to what provision had been made for the care of British wounded in China. Lord George Hamilton in answering said that the Government of India have provided a hospital ship and were preparing to convert three transports into hospital ships. The American hospital ship *Maine* had also been placed at the disposition of Her Majesty's Government, and he begged to express the gratitude of the country to those who had provided and furnished this ship. He was able to inform the House that his Highness the Maharajah of Gwalior had offered to equip fully a hospital ship for China at the expense of 20 lakhs of rupees. This princely offer was made by the Maharajah on behalf of himself, his mother, and his wife, in testimony of their loyalty to the Queen-Empress. This statement was naturally received with loud cheers. At the present exchange 20 lakhs of rupees represents, we suppose, something between £120,000 and £130,000, a gift which is indeed worthy the tradition of Oriental munificence. The century is closing amid stress and trouble of every kind, but never perhaps before have the various items composing the British Empire been so united in their loyalty to the Sovereign. If feudalism has passed away there yet remains the old feeling of faith owed to the head of the body politic, and from the lowliest trooper who is serving his Sovereign to the great native Princes of India there is but the one idea of faithful service.

## MEDICAL EXCURSION TO FRENCH MINERAL WATER RESORTS.

OUR Paris correspondent has already announced the forthcoming excursion and we now give some further details. The next Voyage d'Études aux Eaux Minérales Françaises will last from Sept. 2nd to 15th and will be taken up with visits to localities in the south-west of France, including Luchon, Capvern, Bagnères de Bigorre, Argelès, Barèges, Saint Sauveur, Cauterets, Pau, Eaux Bonnes, Eaux Chaudes, Saint Christau, Salies de Béarn, Biarritz, Cambo, Sanatorium d'Hendaye, Dax, and Arcachon. For the similar excursion held in 1899 the locality selected was Central France and Auvergne. The party will consist exclusively of medical men and medical students, who may be of any nationality. The scientific part of the programme has been entrusted to Dr. Landouzy, Professor of Therapeutics in the Paris Faculty, who has arranged for the holding of discussions in different places on the therapeutic applications of mineral water. Luchon will be the starting-point of the expedition, and all the French railways will carry foreign medical men at half the ordinary rates both to Luchon from the place at which they enter France, and also on their homeward journey from Arcachon to the frontier station

where they first arrived. For the trip from Luchon to Arcachon an inclusive charge of 300 francs (£12) will be made to cover all expenses of railway travelling (in special trains), carriage drives, hotels, food, conveyance of luggage, and gratuities. Every information may be obtained from Dr. Carron de la Carrière, 2, Rue Lincoln, Paris, by whom the excursion has been organised. Names of those intending to join the party will be received up to August 15th.

## HÆMORRHAGIC EFFUSIONS INTO THE PLEURAL AND PERITONEAL CAVITIES (PLEURO-PERITONITIS) FROM ALCOHOLISM.

INFLAMMATORY effusions occupying simultaneously the pleural and peritoneal cavities are usually due to cancer or tubercle. The following case related by M. Fernet at the meeting of the Société Médicale des Hôpitaux of Paris on June 22nd is remarkable in that neither of these diseases was present, and, further, in that the effusions were hæmorrhagic, a circumstance which is sometimes the result of tuberculous, but usually of cancerous, infection. A man, aged 50 years, entered hospital with intense dyspnœa and mental confusion. He was evidently addicted to alcohol. His illness was of several years' duration. He first had alternating diarrhœa and constipation. Then, two years before, he noticed that his abdomen was enlarging and he felt pains in the right side of the chest. For several months his condition remained stationary, but seven or eight weeks previously to his admission it became suddenly aggravated and he then felt increasing oppression. On examination a large pleural effusion extending nearly to the clavicle was found on the left side. The heart was displaced and pulsated just inside the right nipple. There was a considerable effusion in the abdominal cavity. The lower border of the liver extended below the ribs for a distance of two or three fingers' breadth. There was diarrhœa and the urine contained a trace of albumin. To relieve the dyspnœa puncture was decided upon. Thoracentesis gave issue to dark sero-sanguineous fluid the flow of which was arrested when one and a half litres (42 ounces) had been withdrawn. The patient was relieved and pulmonary resonance and murmur returned in the upper part of the affected side. He was put upon a milk diet. Later abdominal puncture was performed, which gave exit to two litres of fluid similar to that which had been withdrawn from the pleural cavity. Numerous red corpuscles were observed in the fluid. No evidence of cancer or tuberculosis could be found. 550 cubic centimetres of urine containing 16·9 grammes of urea were excreted in the 24 hours. Thoracentesis was performed a second time and one and a quarter litres of fluid were removed which appeared completely to empty the pleural sac. Ten days later, however, it was again full. A third operation gave exit to one and a half litres of similar fluid. The patient became worse: at intervals he had delirium and periods of complete mental cloudiness; the respiration was irregular and of the Cheyne-Stokes type. These symptoms were attributed to uræmia. The renal permeability was tested by the administration of methylene blue. The excretion lasted for five days and was therefore much delayed. He died from uræmia. At the necropsy sero-sanguineous fluid was found in the peritoneal cavity. The intestines were glued together by thin and fragile lymph, indicating recent inflammation. The intestinal peritoneum was cyanosed and blackish in parts, as if ecchymosed. The question arose whether oozing of blood had not taken place and given to the effused fluid its sanguineous character. The liver was enveloped in a whitish fibrous coat at least a millimetre in thickness. The organ was in the condition of atrophic cirrhosis. The spleen had a fibrous covering similar to that of the liver. The capsules of the kidneys were removed with difficulty and the cortex was sclerosed. The left pleural sac contained sanguineous fluid. The right pleura and the pericardium were everywhere adherent. Evidently there had been inflammation of these membranes. Microscopical examination showed renal and pulmonary cirrhosis. M. Fernet attributed all the lesions to alcoholic irritation. Possibly the sanguineous effusions were produced through the medium of the hepatic and renal cirrhosis and the concomitant vascular changes. The fact that these effusions can result from other causes than cancer or tubercle is the important point shown by the case. In the discussion which followed M. Galliard pointed out that in his work, "Les Hémorragies Pleuro-pulmonaires de la Cirrhose," he had shown that hæmorrhagic pleurisy was not rare in cirrhosis of the liver. In THE LANCET of Nov. 11th, 1899, p. 1286, Dr. G. S. Middleton has recorded a case of hæmorrhagic ascites in cirrhosis of the liver (in an alcoholic subject) and pointed that this complication is practically unrecognised. An annotation on "Primary Hæmorrhagic Effusions into the Pleuræ and Peritoneum"[1] and an article on a case of hæmorrhagic ascites published by Dr. Theodore Fisher[2] may also be compared.

## PLAGUE IN TURKEY.

ON July 16th Dr. Vouros, sanitary inspector of Beyrout, telegraphed to Constantinople that he had on that day in company with several military and civilian medical men visited four patients employed at a shop in the centre of the city. The extraction of sesame oil was the business carried on at this place. The ages of the patients were from 12 to 25 years. The youngest had been in bed for four days; he had a bubo of the size of an egg in his axilla and a small bubo in Scarpa's triangle; his temperature was 40·5° C. (105° F.); he suffered from vomiting, headache, and mental vacuity. Of the three other patients one had been in bed for four days and the other two for eight days. All three had inguinal buboes, painful on pressure, non-adherent to the skin, and of moderate size; their temperatures were about 38° or 39° C. They complained of headache, but did not vomit. There were no lesions of the skin of the lower limbs on the same side as the buboes. All the patients were Mahamedans from Lebanon. Three had been working in the same shop for several months, but the fourth only for 12 days. A fifth patient, a male, aged 16 years, had been ill and had recovered; he did not exhibit more than an indurated inguinal bubo. All these cases were suspected to be plague and were isolated, their surroundings being at the same time disinfected. Fluid aspirated from the buboes has been examined microscopically by Dr. Férid-Ibrahim, and culture experiments have been made with rabbits, but positive results have not yet been reported. The Conseil Supérieur de Santé has ordered 10 days' quarantine for arrivals from Beyrout. No fresh case of plague has been registered at Smyrna since July 8th.

## SULPHONAL HABIT ENDING FATALLY.

Dr. A. E. Taylor and Dr. J. Sailer have published an interesting case in the volume of "Contributions from the William Pepper Laboratory of Clinical Medicine, University of Pennsylvania," just issued, illustrating a somewhat rare condition resulting from the habit of taking sulphonal. The case was that of a woman, aged 52 years, unmarried, and presenting symptoms of hysteria. On inquiry it was discovered that she had been in the habit of taking sulphonal for some time, the dose being 15 grains per diem. She was informed of the evil results likely to follow the continued use of the drug and she discontinued its use for

[1] THE LANCET, Oct. 14th, 1899, p. 1028.
[2] THE LANCET, Jan. 6th, 1900, p. 17.

some weeks. After this she resumed taking the drug and began speedily to exhibit all the symptoms of sulphonal poisoning—viz., mental confusion, marked insomnia, difficulty of speech, and a peculiar sighing dyspnœa. The urine was tinged a deep pink colour (hæmato-porphyrinuria) and a stiffness and paralysis of both legs soon developed. The control of the sphincters was lost. Cutaneous sensibility was not affected. The paralysis spread rapidly upwards and death resulted from cardiac failure. Spectroscopic examination of both urine and blood disclosed the presence of hæmatoporphyrin. At the necropsy the following conditions were revealed. Fatty degeneration was present in the heart, liver, and kidneys. The spleen was filled with a greenish pigment, both free and within the lymphoid corpuscles, the fibrous trabeculæ were greatly increased in size, and the lymphoid follicles were extremely well developed. Excessive pigmentation was found also in the lymphatic glands of the body and in the lungs. No notable morbid changes could be found in the spinal cord or brain. Cases of sulphonal poisoning are rare, and a case like the above in which the necropsy disclosed lesions of a characteristic nature in the various viscera of the body is rarer still and possesses much importance both from a diagnostic and pathological standpoint. It is interesting to note, however, that hæmatoporphyrinuria—an indication of serious alterations taking place in the blood—from the use of sulphonal is nowadays less frequent than in the earlier days of the use of sulphonal when the drug was not always obtained in a state of purity.

## ON THE EXCITABILITY OF NERVOUS MATTER.

DR. AUGUSTUS D. WALLER in his presidential address to the Neurological Society published in the spring number of *Brain* dealt with the subject of the excitability of nervous matter with special reference to the retina. The general argument was that "a sigmoid curve expresses the ratio between physical stimulus and physiological effect as well as between physical stimulus and psychological effect," this being a development of the well-known Weber-Fechner law of physiology. The main argument was developed as follows. A nerve separated from its natural termini, isolated from the rest of the organism, gave no sign of life when excited except an electrical change which could be measured and demonstrated with accuracy by suitable apparatus. The electrical response given forth by a living tissue was one of the most general and most delicate signs of life, and a nerve was "an almost ideal sample of living matter upon which to test the comparative effects of all manner of reagents when the galvanometer was made its organ of expression." Living tissue, inasmuch as it *is* living, is also dying tissue, ceaselessly evolving energy and ceaselessly "restoring" it. This double chemical activity, of which living matter is the centre, manifests itself by actual chemical and structural changes when it is sufficiently intense or prolonged, but its weakest and briefest pulsations are manifested by electrical changes. At the moment of exposure of the retina to light and at the moment of cessation of the light-stimulus characteristic electric changes were present, and these curves of electrical variation could be registered on a photographic plate suitably arranged. A latent period occurs at the "making" of the light-stimulus, "a period of hesitation during which a tug-of-war, so to say, is taking place in the retina between two opposite forces or processes, positive and negative, that for a period counterbalance each other in the circuit." A similar, if less pronounced, opposition of forces occurs at the end of illumination, when the forces cease to act. During the continuance of the light-stimulus, however, the positive force rises and remains the stronger, whereas when the stimulus has ceased the negative force rises into prominence gradually. The reactions in an injured or moribund eyeball are different from those of a fresh eyeball excised with the least amount of injury. In regard to the action of colours Dr. Waller, after referring to the theories of Helmholtz and Young on the one hand and Hering on the other, finds that in all cases "different colours give rise to electrical effects in one direction, though of varying magnitude." To quote an instance, the galvanometric deflections gave for red light four units, for blue nine, for green 12, and for yellow 16. It was further proved that, taking two very weak colour-stimuli conjointly—e.g., red and green—the united effect of both stimuli was always greater than either of the separate effects, and not far short of their sum, and that a retina, subsequently to prolonged green or prolonged red stimulation, exhibits equal fatigue to green and to red stimuli. These experiments refer to the frog's retina. Further, the presence and significance of fatigue in nerves was investigated and Dr. Waller concludes that medullated nerves are practically not liable to fatigue, whereas non-medullated nerves, as shown by experiments conducted by Miss Sowton on the olfactory nerve of the pike, appear to suffer readily from exhaustion and fatigue as muscle does. Dr. Waller concludes from the curves obtained as the results of experiments made with gradually increasing stimuli on retina and nerve that a sigmoid curve represents more faithfully than Weber and Fechner's logarithmic curve the relations of stimulus and sensation. The curve in its early stages rises very slowly, then more rapidly, and, finally, it rises more slowly again. And an apt psychological illustration of this is given by language. In the learning of language we know that the first steps cost much and that acquisition is at first very slow. "Then the upward progress becomes more rapid, successive equal increments of energy give successive increasing increments of knowledge; finally, progress slackens, and the last steps towards perfection cost energy far in excess of those taken within the range of mediocrity." Dr. Waller's studies throw an interesting light upon the problem of nervous development.

## MASSAGE AS AN OCCUPATION FOR THE BLIND.

THE occupations which can be undertaken by the blind with any hope or prospect of being remunerative and of enabling them to contribute to their own support are unfortunately few in number. Brush-making, mattress-making, basket-making, bookbinding, and piano-tuning, almost complete the list for the less intelligent; tutorial work is occasionally undertaken, though few can hope to be brilliant professors like Penjou the mathematician or like Saunderson of Cambridge. There is, however, a restricted field open to those who have sufficient ability to qualify themselves for the post of organist. We are informed that a small committee of gentlemen and ladies who are interested in the welfare of the blind have resolved at some cost to themselves to make an effort which they trust will receive the favourable support of the profession to introduce a new industry for those who are so unfortunate as to have lost their sight. It is that of massage. It is said that it has been found by actual experience that massage as performed by blind people can be as efficiently practised as by those who see and that their delicacy of touch and intelligent manipulation have been fully appreciated by those placed under their care. It is proposed, if funds will allow, that rooms should be taken in some central situation under the control of a matron who should be in communication with a certain number of thoroughly educated blind masseurs and masseuses. To these rooms physicians and surgeons could send their patients, or if it were preferred, from this centre, as in the case of other nursing establishments, a male or female blind expert could be sent into the country. The blind are clever in making their way about and it is

not apprehended that any difficulty will be experienced in enabling them to reach their destinations, whilst when once they have made themselves familiar with a house their gentleness, quietness, and cheerfulness would be certain to render them satisfactory temporary inmates. Information in regard to the Institute for Massage by the Blind can be obtained from the honorary secretary, Mr. F. Talfourd Chater, Oxford House, Bethnal-green, E.

## ANGINA EPIGLOTTIDEA ANTERIOR.

THE *Albany Medical Annals* for July contains an important paper by Dr. C. F. Theisen on this rare affection. "Angina epiglottidea anterior" was the name given by Michel in 1878 to an inflammatory process involving the anterior surface of the epiglottis, as a rule confined to it, and accompanied by more or less œdema, which is the characteristic feature of the affection. The larynx itself may be affected to a certain extent. The disease may be primary, or secondary to acute inflammation of the tonsils, pharynx, or lingual tonsil. The following cases are described in the present paper. Case 1.—A man, aged 36 years, was seen on the second day of an illness which had supervened while he was in good health. Sitting in a chair, with anxious countenance, he complained of a severe sharp sticking pain at the base of the tongue when he attempted to swallow. Attempts to swallow even a few drops of water brought on severe attacks of choking and coughing. There was pain when he moved his tongue and severe headache and anorexia were present. His voice was clear and there was no dyspnœa. The pharynx was not reddened. The anterior surface of the epiglottis was intensely inflamed, of a uniform bright red colour, and œdematous. The larynx was practically normal. The temperature was 101° F., and the pulse was 110. An iced ichthyol spray, one-half per cent. solution, was used every 20 minutes, and an ice pack was applied round the neck. Ice was also frequently taken. On the next day the inflammation had subsided considerably, but there was still dysphagia. On the fifth day he was practically well, though the inflammation did not entirely disappear for several days more. Case 2.—A woman, aged 40 years, in good health, became restless and feverish and had great pain and choking when she attempted to swallow. There was dyspnœa on lying down which compelled her to sit up. The anterior surface of the epiglottis was reddened and so œdematous that the laryngeal entrance was partly closed. The vocal cords were slightly reddened and there was some swelling of the left ary-epiglottic fold. The temperature was 102° and the pulse was 120. Calomel was given and similar treatment to that employed in the previous case was adopted; later in the day, as breathing was still difficult, free scarification was performed which gave some relief. She was much better on the next day and in a week she felt well, although the epiglottis did not become normal for several days more. After the scarification cultures were taken from the epiglottis which showed mixed infection by the staphylococcus albus and pneumococcus. The reason why an œdematous condition of the anterior surface of the epiglottis does not involve the larynx is anatomical. Hayek has shown that the submucosa of the anterior surface is abundant and that the mucosa is not tightly adherent, while on the laryngeal surface the mucous membrane is tightly adherent. But when the œdema is very great it may extend by way of the thin mucous tissue of the pharyngo-epiglottic ligament to the ary-epiglottic folds. As to the causation, angina epiglottidea anterior may result from injury, such as swallowing irritant fluids or substances, or from the inhalation of pungent vapours. It may be part of a general œdema of the fauces resulting from large doses of iodide of potassium. It may occur during infectious diseases, such as measles, erysipelas, septicæmia, &c. Very often it is an acute primary process.

## THE HOLIDAYS AND LOCUM-TENENTS.

THE time of holidays is come—for patients. It is not so easy to see how medical practitioners are to secure their much-needed change. With the majority of medical men—perhaps a larger majority than some of us think—taking a holiday is a rare and difficult matter. We remember once to have met a worthy practitioner in an old town of Surrey who had practised for 40 years and had only once had a holiday—and that was when he had typhoid fever! At the present moment the obstacles are unusual. The abolition of the unqualified assistant and the demand for medical men in the naval and military services and abroad are such that a locum-tenent has become an expensive luxury. There seems to us to be only one way out of the difficulty. Medical men must come to terms amongst themselves. They should meet and arrange to give each other holidays; this has its inconveniences, but they must be faced. Such action on their part will moreover have a good effect on the tendency of locum-tenents to over-rate their services. We are not sorry that they are more appreciated than they used to be. Nothing can be more valuable in its way to a medical practitioner wanting a holiday than to know a gentleman of character and ability to leave behind him as a locum-tenent. It doubles the rest of a holiday to be able to leave his patients in the care of such a friend. And they have not always been adequately appreciated. The danger now, however, is the other way—namely, lest they should expect a rate of remuneration more than general practice will bear. The error will be the sooner corrected if medical men in their own neighbourhood and amongst each other agree on a system of mutual help.

## LOCAL ANÆSTHESIA AND NARCOSIS.

DR. CARL LUDWIG SCHLEICH contributes to a recent issue of the *Berliner Klinische Wochenschrift* (No. 13, 1900) a long and valuable article embodying the results of his more recent experiences in local infiltration anæsthesia, a subject previously referred to in these columns.[1] He proclaims that it is coming more and more into general use and must in many instances supersede general anæsthesia where the latter may be attended with danger. Infiltration anæsthesia properly conducted is, according to Dr. Schleich, absolutely without danger, owing to the very small amount of the anæsthetic used locally, and it is particularly indicated in all tumours and neoplasms of the skin and subcutaneous tissues—e.g., fibroma, nævus, angioma, lipoma, in most plastic and superficial operations such as tenotomies, excisions of scar-tissue, ganglion, transplantations, and the suturing of fresh and recent wounds and injuries, and for dermoids, chancroids, and sarcomata. The *modus operandi* is to fill the entire skin and subcutaneous tissue at and around the site of the intended operation with the infiltration fluid and to infiltrate the tissue no more than is necessary. In nervous patients the needle-pricks of the hypodermic syringe may be made painless by the application of ethyl-chloride spray. Major amputations may be performed as well as operations on the abdomen (herniotomy and cœliotomy). In injecting the fluid for operation on boils, carbuncles, or abscesses it is necessary to begin the infiltration on the surrounding healthy and non-inflamed tissue. For operation on the fingers or toes the method practised by Oberst—viz., that a ligature should be tightly applied at the base of the digit, after which injection may be made into the

[1] THE LANCET, April 29th, 1899, p. 1171.

subcutaneous tissue—is recommended. The pressure of the blood in this case causes œdema and aids the infiltration to diffuse readily and evenly throughout the finger in about half a minute. Cocaine and its derivatives, tropococaine and nirvanin, are the drugs most employed. Referring to the subject of narcosis or general anæsthesia Schleich recommends that a special solution as follows be used in cases where general anæsthesia is imperative — viz., ethyl chloride one-half to two parts, chloroform four parts, sulphuric ether 12 parts—and he states that he has used this mixture in about 5000 cases without any bad symptoms resulting. Local anæsthesia has been extensively adopted in amputations, resections, and operations on bones (Rubinstein), in gynæcological operations (Abel), and in ophthalmic operations (Wurdemann), as well as for costal resection, urethrotomy, hydrocele, hæmorrhoids, and fistula, &c. Schleich has in 250 cases used the infiltration method in operating on medical men, and with success. As in other papers on this subject, there is less said about the dangers of local anæsthesia than is perhaps advisable. Even when the obvious dangers of sepsis are omitted, since with due care they can be almost eliminated in hospital work provided their presence is appreciated, there yet remain drawbacks to the use of the infiltration method. The average patient does not go through a severe operation even when rendered analgesic—for analgesia and hardly anæsthesia is obtained in Schleich's method—without considerable shock and nerve prostration. There is always the fear that he is going to be hurt, besides the actual sickening pain when the viscera are being handled, which in some cases produces faintness, even collapse. It must be conceded that, valuable as the method is, it should be used as an adjuvant to, rather than as a supplanter of, general anæsthetics.

## PLUMBERS' APPRENTICESHIP.

IN London, and, indeed, in the southern counties generally, the system of apprenticeship in the plumbing trade has been gradually dying out, while the plumbers' ranks, as a rule, have to be recruited from a class of men known as plumbers' mates; now the master plumbers, together with the operatives, have at length recognised the importance of this fact. They are of opinion that it is a system alike injurious to the best interests of the London plumbing trade and to the public health. A joint board has therefore just been formed under the influence of the Worshipful Company of Plumbers consisting of certain elected members of the London Society of Associated Master Plumbers together with representatives from the London lodges of the United Operative Plumbers. The aims of the board are to encourage the taking of apprentices under an agreed form of indenture; to exercise a certain control over the apprentice so as to insure his attendance at a duly approved technical school; to occasionally examine him as to the progress made in practical and theoretical knowledge; and finally to register him in order that information respecting his training and abilities may be readily accessible at any future time. It is, indeed, a most welcome sight to see employers and employed united together both for their own and the public good, while so far as the object to be attained is concerned it is one to be commended. The embryo plumber caught in the first blush of early youth is likely to prove like plastic "clay in the hands of the potter." The conditions, however, existing in the plumbing trade, in the South of England more particularly, are not such as to encourage a revival of the apprenticeship system. The scheme suggests a rather expressive Americanism that "there is no good in whopping a dead nigger," and it is to be feared that the process of natural decay in the existing system has passed beyond the reach of stimulants. Unless a course of instruction can be devised, conducted by an organised body upon lines distinctly different to those at present governing apprentices, the difficulties to be overcome are too great to warrant much hope of success. The future development of the joint board will be watched with interest.

## HOUSING OF THE WORKING CLASSES.

A CONFERENCE is to be held by the Sanitary Institute on Monday and Tuesday next, July 30th and 31st, for the purpose of considering the problem of the housing of the working-class population in London and other large towns. In connexion with the Conference an exhibition of plans and models is being arranged in the Parkes Museum, and among the drawings that will be exhibited are those prepared for the London County Council, the Corporations of Liverpool, Manchester, Leeds, and Belfast, the Guinness Trust, the Peabody Trust, the Improved Industrial Dwellings Company, and other public bodies. On Monday the Conference will be presided over by Mr. Melvill Beachcroft, L.C.C., and the subject of discussion will be Unhealthy Areas and Displacement of Town Populations. On the second day Sir Sydney Waterlow will preside and the subject for discussion will be Improved Houses for Town Dwellers and Improved Means of Communication. About 400 delegates have been officially appointed by local authorities to attend the Conference, and in the afternoons visits will be paid to the new buildings being erected by the London County Council on the Millbank site, to the Boundary-street area at Bethnal Green, to the dwellings erected by the Improved Industrial Dwellings Company at Bethnal Green, and to the dwellings erected at Richmond, where the delegates will be received and entertained by the Mayor.

## ON THE SIMULATION BY HYSTERIA OF OTHER DISEASES.

DR. ERNEST FUERST of Dantzig has published in the *Deutsche Medicinische Wochenschrift*, No. 14, April, 1900, two very interesting cases illustrative of the above, showing not only the degree and extent to which the clinical signs and symptoms of other diseases may be simulated by hysteria, but the practical importance of such cases as regards prognosis and treatment. The first of these was a unique case of œsophageal spasm following the attempt to pass a tube into the stomach. The patient was a woman, aged 36 years, with no hereditary taint, who had suffered for some weeks from gastric disturbances with pains and vomiting of such a character as to point to the presence of gall-stones. There was no icterus, and morphia failed to relieve the symptoms. The vomiting was on one occasion very troublesome and a tube was passed into the stomach. This being done the stomach contents were duly evacuated, but on attempting to withdraw the tube it was felt to be firmly grasped by the œsophagus, which had apparently passed into a condition of spasm. Finally chloroform was administered and when the œsophageal spasm had been sufficiently relaxed the tube was withdrawn. It was then found that the tip of the tube had got folded on itself, probably owing to the spasmodic obstruction being near the cardiac orifice of the stomach, and this combined with the spasm had rendered its withdrawal difficult. The woman was suspected to be suffering from hysteria and was subjected to hypnotic treatment and suggestion, after a brief course of which she was completely cured. The second case was of importance owing to the positive indications which it gave of phthisis. The case was that of a man, aged 29 years, of healthy family. He suffered from pains in the chest, the sputum was slightly blood-stained and there was a febrile elevation of temperature which was not at first suspected to be of hysterical origin. Careful examination of the sputa failed to show the presence of tubercle bacilli, though the

tuberculin test caused an elevation of temperature to 38·5° C. after five milligrammes were administered, and the patient complained of pain over the left side of the chest. The symptoms complained of were, however, peculiar and led to the suspicion of hysteria. Hence an injection of a few drops of distilled water—supposed by the patient to be tuberculin—was given with the result that the same reactions followed, and on another occasion the mere introduction of the hypodermic needle and its withdrawal without making any injection caused a repetition of the symptoms. The case was regarded, therefore, as one of hysteria, and the temperature was attributed to hysterical fever in that it also oscillated in a characteristic and irregular way. With appropriate care and treatment the patient recovered.

## ALCOHOL AND THE TROOPS RETURNED FROM THE WAR.

DAY by day it is announced in the press that the victims of war, whether laid low by wounds or by disease, are returning from the front. Some of them are well enough to be sent to their own homes or to convalescent homes almost at once, and we wish to urge upon everyone coming into contact with these returned warriors the plain fact that knowing a man as a friend or the possession of admiration for a man who has done his duty is no reason for treating him to an overplus of alcoholic drinks. We do not say this because we have an objection to alcohol *per se*, but for any man, and more especially for one who has just recovered from a serious illness, to be filled with a selection of alcoholic drinks, and those, too, in many instances, not of the best quality, is conducive neither to his health nor to his chance of success in civil employment. A mixture, as is very possible, of beer, rum, and "whisky-and-soda" is calculated seriously to disturb the progress of convalescence, in addition to the fact that if a man on sick leave is treated to over-indulgence his resulting state of incapacity would not raise him in the eyes of a possible employer. The Army Temperance Association are issuing leaflets upon the same subject. We have treated the matter in a more practical way, but whether it be looked at from the practical or from the intellectual point of view we hope that the pleasure of the return home of those who have done well by their country will not be marred by their being subjected to either the pathological or the legal penalties of over-indulgence in alcoholic drinks.

## TABES DORSALIS IN INFANTS.

TABES dorsalis is a rare disease in infants and the cases recorded in literature amount to six in all—viz., three cases published by Remak, one by Strümpell, one by Mendel, and one by Bloch. Dr. L. Dydynsky gives an interesting account of a seventh case[1]—viz., that of a boy, eight years of age, in whom the tabes had its onset at the age of five years and gave rise to bladder troubles. The patient has since then suffered from incontinence of urine and sometimes from retention of urine. He showed Romberg's symptom while standing, the pupils were of the characteristic Argyll-Robertson type, and Westphal's sign (loss of knee-jerk) was pronounced. There were muscular hypotonia and feebleness but no atrophy or manifest incoördination. He had lightning pains and paræsthesia in the lower limbs, as well as patches of hypoæsthesia and hypoalgesia. The personal history of the patient showed a remarkable freedom from any infectious disease and there was not any direct sign of hereditary syphilis. The family history was as follows. The child's father had had syphilis when a young man, aged 20 years, and was at the time of recording of the child's present illness suffering from incipient tabes with characteristic knee symptoms and pupillary conditions. The child's mother had had five miscarriages before the present child was born. Following him were three other children (infants) who so far appear to be well. Dr. Dydynsky insists on the fact that in all the cases observed of infantile tabes and juvenile tabes (Raymond, Homen) syphilis has been noted in the parents, especially the father. Hereditary syphilis is undoubtedly the cause of infantile tabes dorsalis just as it is also the cause of the characteristic cerebral degeneration which may bring about juvenile general paralysis (Thiry, Alzheimer). It is interesting to note that in nearly all the recorded cases of infantile tabes the symptoms began with bladder troubles and troubles of micturition, after which ocular symptoms followed. Troubles of sensibility of the skin followed next in order of time, whereas ataxia and loss of the power of balancing and walking supervened late or did not appear at all. Considering the syphilitic etiology it is a question whether the prevention of both tabes and general paralysis in juveniles might not be effected were appropriate anti-syphilitic treatment adopted in the case of every infant subject to hereditary syphilis. The question opens up one of the most important departments of preventive medicine.

[1] Abstract from the Russian by A. Raichline in Revue Neurologique, May 30th, 1900.

## DENTISTS AND THE COMPANIES BILL.

MR. MORTON SMALE, Dean of the Dental Hospital of London, speaking at the conversazione and prize distribution in the Prince's Room, Piccadilly, on Wednesday night, July 18th, adverted to the effect of the Companies Bill now before Parliament on the profession of dentists. He said that almost every clause of the Dentists Act, 1878, began with the words "A person," from which it might be assumed that the intention was to restrict the practice of dentistry to individuals as apart from companies—in other words, that when a person went to consult Mr. Smith he should not be referred to Mr. Jones. This was a professional rule which had led the Royal College of Physicians of London to go so far as to say that even Fellows of the same College should not practise together. Within a few years of the passing of the Act, however, certain persons formed themselves into companies and proceeded to practise dentistry. While the question of remedying this grievance was under consideration the new Companies Bill was brought before the House of Commons and through the instrumentality of some members of the dental and medical professions two clauses were inserted with a view to prohibiting the practice of medicine, surgery, and dentistry by companies. At the moment when they thought they were secure Mr. Ritchie stated in the Grand Committee which was considering the Bill that he thought that it was necessary to drop the clauses because they were not germane to the subject matter of the Bill. Mr. Smale could not imagine that any Act which dealt with the formation of companies should not have reference to this matter, and he failed to see the potency of Mr. Ritchie's remarks. There was no more appropriate place in which to insert clauses for stopping this disreputable practice than this Bill. Everybody in the House of Commons was agreed that the practice was a disreputable one and it was nonsense to postpone the matter indefinitely. It was a monstrous injustice that dentists after going through a five years' curriculum should have to be met by companies carrying on their profession. We thoroughly agree with every word that Mr. Smale said and so does the whole of the medical and dental professions. But unfortunately the clauses in question were excluded on Tuesday night last

when the Bill was considered in the House of Commons as amended by the Standing Committee.

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THE Liverpool School of Tropical Medicine has received a communication from the expedition which was despatched last month to America *en route* for Brazil to the effect that, at the suggestion of Surgeon-General Sternberg, medical chief of the United States Army, the expedition had joined for a short period the official Yellow Fever Expedition which the American Government has just despatched to Cuba.

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MR. A. MARMADUKE SHEILD has been elected surgeon to St. George's Hospital in the room of Mr. J. Warrington Haward, who retires on completing 20 years' service on the full staff. Mr. H. S. Pendlebury, who has filled the post of Demonstrator of Anatomy and more recently of Surgical Registrar, has been elected assistant surgeon.

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WE regret to announce the death of Mr. W. Storer Bennett, F.R.C.S. Eng., L.D.S., dental surgeon and lecturer on dental surgery to the Middlesex Hospital. Mr. Storer Bennett was lately President of the Odontological Society and stood very high in the esteem of the medical profession. He died at the comparatively early age of 48 years.

# Pharmacology and Therapeutics.

### DORMIOL.

IN an article published in the *Münchener Medicinische Wochenschrift* of April 3rd Dr. Peters of the Luisenhospital in Aix-la-Chapelle gives a very favourable account of a new hypnotic which he has employed in practice for nine months. This substance, which has been named "dormiol" by its discoverer Dr. Fuchs, is a compound of one molecule of chloral with one molecule of amyl hydrate and is an oily colourless fluid having a specific gravity of 1·24 and an odour like that of camphor. It is manufactured by Kalle and Co. of Biebrich, and is sold by them either in the pure state, or in 10 per cent. aqueous solution, or in gelatine capsules. The patients to whom Dr. Peters gave dormiol were almost without exception kept under observation for some time previously, and in order to counteract the influence of suggestion injections of distilled water were given to some of them before the dormiol. These patients were 45 in number, and their morbid conditions were classified under the following heads: nervous system, 20; lungs, 3; heart, 1; intestines, 1; kidneys, 5; liver, 2; peritoneum, 1; genital organs, 2; bones and muscles, 5; blood, 1; chronic poisoning, 2; convalescence after influenza and scarlet fever, 2. They all took dormiol without repugnance, and some said that it tasted like ammonia or ether. It was given either in the form of a 10 per cent. watery solution mixed with milk or in gelatin capsules containing half a gramme (seven and a half grains). No unpleasant after-effects were ever experienced. In seven of the 45 cases no particular effect was produced, but these patients were also found to be unaffected by trional in gramme doses (15 grains), and by amyl hydrate in doses of from four to six grammes. In 84 per cent. of the cases a more or less deep sleep was induced. As with other hypnotics, the effect was for the most part palliative, but in some instances habitual insomnia was permanently benefited. Dormiol was especially serviceable in insomnia due to functional neuroses. It was also tried in cases of organic disease of the brain and spinal cord and was found useful in all but one. A patient suffering from paralysis agitans in whom the smallest mental excitement brought on insomnia was soon sent to sleep by half-gramme doses of dormiol. Half-gramme doses were usually given to commence with, and on an average the hypnotic effect appeared in from half an hour to an hour. The quantity might be increased to one gramme, but it was seldom necessary to give as much as two grammes. In conclusion, Dr. Peters recommended dormiol on the grounds that it was easy to take, that it was harmless in doses of from half a gramme to two grammes, that it was cheaper than other hypnotics, and that it was at least as serviceable as paraldehyde, amyl hydrate, and trional.

### IODALBACID.

Iodalbacid is a preparation of albumin containing 10 per cent. of iodine and is recommended as a therapeutical agent on the ground that in the animal organism it appears to be a much more stable compound of iodine than the alkaline iodides, acting less rapidly than the latter but more continuously, and never with the production of the phenomena of iodism. It is a yellow powder, having hardly any taste or smell, and is not readily soluble in water. It is made by L. W. Gans of Frankfort. The dose is from two to five grammes (from 30 to 75 grains) daily, sometimes for several months in succession, taken either in wafers, or baked in macaroons, or in half-gramme tablets. In the *Wiener Medicinische Wochenschrift* of April 7th Dr. Arthur Briess gives a summary of 25 cases of syphilis treated with it in the clinic of Professor Neumann of Vienna. In the greater number of these cases it acted well, and sometimes with comparative rapidity. In some instances, however, it failed, especially in recent syphilis, and other antisyphilitic remedies had to be resorted to. The patients who recovered under iodalbacid mostly suffered from late relapses, exanthemata, papules on the genitals and mouth, periostitis, and gummata. Two patients in whom iodide of potassium produced cardiac troubles, headache, and skin affections, had none of these symptoms when taking iodalbacid. Professor Neumann's patients had from eight to 12 pastilles of iodalbacid daily, with strict injunctions that they were to be taken only after food. Chemical analysis showed that iodine soon appeared in the urine and saliva.

# THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia of the Fellows was held on July 11th, the President, Dr. W. S. CHURCH, being in the chair.

The PRESIDENT informed the Fellows that he had accepted the invitation made to him as President of the College by the Secretary of State for War to become a member of the commission appointed by the Government to inquire into the condition of the sick and wounded in South Africa. In accordance with the by-laws he nominated Dr. F. W. Pavy to act as President during his absence.

On the motion of the PRESIDENT it was decided to send a congratulatory address to the Royal College of Surgeons of England on the occasion of their approaching centenary celebration.

A communication was received from the Secretary of State for War, asking the advice of the College on a proposal for encouraging the investigation of the nature and cause of dysentery affecting armies in the field and its relationship (if any) to enteric fever.

After some discussion the PRESIDENT was requested to express to the Secretary of State the hearty appreciation of the College of the proposal submitted, and to suggest that in their opinion the end in view would best be attained by appointing a small commission of suitably qualified persons to conduct the inquiry.

A communication was read from the Secretary of the Royal College of Surgeons of England reporting certain proceedings of its Council.

Two Reports were received from the Laboratories Committee.

On the motion of the REGISTRAR By-laws 13 and 28, which were amended in consequence of the re-constitution of the University of London, were re-enacted a second time, and By-law 133 which was amended to make it conformable to the conjoint regulations, was re-enacted for the first time.

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NOTIFICATION OF MEASLES AND WHOOPING-COUGH.—The Plymouth Town Council has given notice that the order for the notification of measles and whooping-cough will come into operation on Sept. 1st.

# THE FIRST INTERNATIONAL CONGRESS ON MEDICAL ETHICS OR DEONTOLOGY, HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

IN the large white hall of the cream-coloured Palace of Congresses on Monday, July 23rd, rather more than 200 medical men, coming from all parts of the world, met to inaugurate the first international congress of medical men who have gathered together solely for the purpose of discussing how to organise the profession so as to take an active part in the economic struggles of the day. This is not a scientific congress, unless we qualify political economy as a science, but a meeting of militant medical men who are resolved to maintain the highest ethical standard as the rule of their profession and to defend the economical interests of its members. A considerable number of the delegates who are expected were not present, nor was there any need for all to attend, as it was well known that the proceedings would be of a purely formal character. Nevertheless, it was an encouraging gathering. The few speeches delivered were certainly mild in character; it seemed as if the speakers felt they were treading on new ground and were anxious not to appear prematurely boastful. But there was a thoughtful, earnest tone which is probably quite as likely to produce good results. Dr. Théophile Roussel, senator and author of the admirable law for the protection of abandoned children, was honorary president and opened the proceedings by a few almost inaudible words of encouragement. Dr. Lereboullet, the President of the Congress, then delivered a more lengthy discourse in which he first expressed his thanks to all who in France and abroad had helped to render the Congress not only possible but successful and representative. He pointed out that the time was propitious, for the questions at issue had now reached the domain of practical politics. On all sides it was felt that the profession was overcrowded, that medical men worked more and earned less than formerly, and that their position was attacked from many sides. He denounced quacks, the sale of secret medicines, and unprofessional advertising, as contributing, as well as the great societies that organised contract work, to degrade the profession morally and to lower the incomes medical practitioners might legitimately hope to earn. All these evils could only be met by the organisation of strong medical unions for the purpose of defence and of educating the profession to a knowledge of its economical position. As a secondary task the medical unions might strive to establish some form of mutual insurance against accidents, sickness, and old age. In all these matters at every stage the principles of deontology must be brought to bear, namely, the duty of the medical man to the public, to his patients, and to his professional colleagues. Deontology sprang from the soul. It was difficult to define. It followed the principles of equity, it engendered a sense of refinement, it produced harmony, it obliterated strife, and though the most vague it was the most powerful force they possessed. The medical unions, by bringing the prosperous and the struggling together, helped to engender higher feelings, to efface selfishness, and to create a real professional brotherhood.

Honorary presidents selected from each nationality were then elected, and the general secretary of the Congress, Dr. Jules Glover, gave a short account of the origin and scope of the Congress. He expressed his regret that it would take up too much time to read all the letters of sympathy and approval the organisers of the Congress had received. This correspondence would show how warmly and enthusiastically the Congress had been approved by medical men of all nationalities. Under the Congress hall was the exhibition of social economy and now medical men were also beginning to study social economy as it affected their profession. Dr. Glover went on to show how the various phases of this problem had been intrusted to experienced technicians who had gathered together a great store of facts that bore on the points at issue. There was but little eloquence, but little oratory, in these papers which the Congress would be called upon to discuss, but they were essentially practical and full of information. This opinion will doubtless be endorsed by those who read the subjoined summary of some of these reports which I have been able to make from the proofs. After these few speeches the Congress adjourned to the restaurant of the Congress which faces the Congress hall, where light refreshments were served and the delegates indulged in friendly conversation.

## MEDICAL MEN AND FRIENDLY SOCIETIES.

Very shortly after nine on Tuesday morning the real business of the Congress began. The delegates met in the large amphitheatre of the École de Médecine. Dr. LEREBOULLET was in the chair and the discussion was opened on Dr. CUYLITS'S paper. This paper, on the Relations of Medical Men with Benefit Societies, which came first on the list of reports presented to the Congress, was written by Dr. Cuylits of Brussels, and it would be difficult to find in Europe anyone with greater practical experience of the subject. Dr. Cuylits is well known to the readers of THE LANCET as the energetic secretary of the Brussels Medical Union during their memorable strike against the Federation of the Benefit Societies of the Belgian capital. Dr. Cuylits commences by going back to the guilds of the Middle Ages which he describes as a rational attempt to organise labour, but the guilds had now been replaced by trades unions and professional unions. The same spirit of organisation, the necessity of association for mutual help and protection, likewise led to the formation of the vast "mutualities," benefit or friendly societies, to provide pensions and medical attendance in times of sickness, accident, or old age. As in all these cases medical care is necessary the medical officer is the foundation-stone on which such organisations rest. But these societies are philanthropic and not commercial undertakings. Therefore in most countries there are special laws in their favour and they sometimes received subscriptions and donations from benevolent persons. This movement is of the utmost importance because it is spreading so rapidly. Thus in Belgium there were 756 benefit or friendly societies in 1895 and in 1899 they had increased to 2928. In the same time the coöperative societies had augmented from 394 to 1297 and several of them had a medical service for their members. Dr. Cuylits estimates that out of the 6,670,000 persons that constitute the population of Belgium close upon 3,000,000 receive medical aid in some form or other and do not pay the usual medical fees. This state of affairs is not stationary; the evil is rapidly increasing. After alluding to similar conditions prevailing in other countries Dr. Cuylits insists that organisation can only be met by counter organisation. If the medical practitioner is to live in selfish isolation, without coming to a common understanding with his colleagues on matters of common interest, he must inevitably fall a prey to the solid organisations brought to bear against him. On the other hand, by organisation medical men may hope ultimately to abolish the contract system. The members of friendly societies, &c., should receive only financial aid when ill, and with the money thus obtained they would be free to call in and pay for the services of the practitioner whom they prefer. Dr. Cuylits proposes, however, that there should be a fixed minimum charge for each consultation given to members of such benefit societies as apply strictly a wage limit. This fee could vary according to the social standing of the members of the society; it would be notified to all practitioners and none would be allowed to accept less. Dr. Cuylits is uncompromising in his opposition to contract work. Let the subscriber make weekly payments not for medical aid but for money allowances when he is ill and with this money he will be able to secure and pay at a fixed rate per consultation any one of the practitioners who have come to terms with his society.

M. GAYRAL, after Dr. Cuylits had concluded amid warm applause, was the first to speak. He declared that he was in favour of reform, though he represented, not the medical profession, but the great friendly societies. He denounced the presence of wealthy members of such societies. They might remain as honorary members, but should not receive the medical aid intended only for the poor.

Mr. ADOLPHE SMITH (London) then suggested verbal modifications to the motions proposed, as the term *vraie* or "true" friendly societies would not be understood by those who had not followed the discussion. At the request of the secretary of the Congress he gave some details of the abuses prevailing in England, which were greeted with loud applause and not a little laughter. When he insisted that

cheap contract work tended to degrade the profession the Congress enthusiastically and unanimously approved.

Dr. VANDAM, President of the Brussels Medical Union, followed and insisted that the medical officers should have a voice in the management of the friendly societies. He denounced the "blacklegs" of the profession and demanded the creation of a representative body possessing sufficient authority to ostracise those medical men who undersold their brothers in the profession. Such an authority would be greater if it were international.

Dr. LASALLE (Bordeaux) explained how it was sought to establish a minimum fee of one franc per consultation and one and a half francs per visit. This effort had failed through the action of the "blacklegs."

Dr. CUYLITS said he had no fear that his meaning would be misunderstood, for Mr. Smith was not only an eloquent and humorous orator, but one of the ablest correspondents of the medical press and would not therefore fail to make his meaning clear.

After a lengthy and at times a somewhat confused discussion the motions which concluded Dr. Cuylits's report were finally adopted with some slight modification and are as follows:—

No. 1.—All genuine friendly societies, that is to say, societies composed exclusively of workers, are entitled to a minimum tariff which in all other circumstances would be incompatible with the dignity of our profession.

No. 2.—The friendly societies will only be allowed to profit by such tariffs if they undertake to accept and to retain as members only such persons as are in poor circumstances.

No. 3.—These tariffs may differ according to the resources of the friendly societies according to local circumstances.

No. 4.—These tariffs shall be established by mutual arrangement between the friendly societies and the medical societies. These tariffs shall be notified to all practitioners, thus leaving each practitioner free toaccept or reject them.

No. 5.—The system of subscribing (contract work) cannot be authorised under any conditions whatsoever, and the members of the friendly societies are free to select the medical attendant they may prefer.

No. 6.—The administrative committees of friendly societies must comprise a medical man as one of the administrators.

The Congress having unanimously passed these resolutions adjourned for lunch.

### INTERNATIONAL RECIPROCITY AMONG MEDICAL MEN.

At the afternoon sitting on Tuesday Dr. SCHWALBE of Berlin opened the discussion on the conditions of practice enjoyed by medical men in other than their own country. Some States, notably Denmark, were very hard on foreign practitioners. Great Britain was, comparatively speaking, very lenient, and so also were Bulgaria, Roumania, and Turkey. —Dr. STOEBER protested against the treatment of French doctors in Alsace and Lorraine, and wanted to see an agreement concluded with Germany similar to that which existed with other countries.—Dr. VANDAM alluded to a Bill before the Belgian Parliament based on the principle of reciprocity. The Belgians would grant the right to practise in Belgium to those foreign medical men who came from countries where Belgian medical men were likewise allowed to practise.

The discussion now drifted from the question of general practice to that of frontier practice. This is a question and a grievance that will not have occurred to the English mind as England has no immediate neighbours, but on the Franco-Belgian frontier it often happens that a Belgian practitioner living in Belgium is nearer to a French farm or hamlet than the nearest French practitioner living on French soil. Therefore, especially in emergencies, it is the Belgian medical man who is called to the French patient. Conventions allowing this so-called frontier practice have been agreed upon by the two countries. It is now said that the Belgian medical men carry out not a "frontier practice" but a "penetrating practice," travelling sometimes 15 miles beyond the frontier and passing the residences of one or more French medical men. The Congress, therefore, adopted the following resolution:—

The Congress resolves that the conventions relating to the practice of medicine on the frontiers be modified, and that the distance which medical men may penetrate beyond the frontiers be precisely defined.

### HOSPITAL ABUSE.

The next paper, which was by Dr. PAUL THIÉRY, surgeon on the staff of the Paris hospitals, dealt at great length with the question of hospital abuse. The Medical Union of the Parisian practitioners have discussed this matter extensively and published many pamphlets and articles on the subject. The evil—namely, the use of hospitals by those who can afford to pay fees—is increasing so rapidly in most countries that M. Armand Lefèvre declared in the Municipal Council of Paris that in spite of all efforts to the contrary the time would come when bread and medical aid would be given gratuitously to all who applied, and that the time was not far off when the medical practitioner would be a paid functionary of the State. Dr. Thiéry discusses at length the class of persons who are entitled to frequent hospitals and maintains that workmen protected by legislation rendering their employers liable in case of accident have no right to admission in the hospitals. There is no need of charity in such cases, particularly as the employers are generally insured against such risks. Many cases of abuse are cited, notably that of a jockey who was earning £1000 a year and went to the Hôpital de la Pitié to be treated for a sprain; and a lady was able to pay for her journey from America so as to obtain advice at the same hospital. The cashier of a commercial house earning a salary of £800 went to the Hôtel Dieu, and to-day any number of visitors to the Paris Exhibition profit by the opportunity to obtain gratuitous advice at the Paris hospitals. A young lady came from Russia, was operated upon gratuitously at the Hôpital St. Louis, and then went for her convalescence on a journey to Italy. A celebrated singer wanted the hospital surgeons to come to her own house—she did not like to go to the hospital—and yet she strongly objected to pay any fee whatsoever. All classes and conditions of people seem to think that they have the right to be treated for nothing at the hospitals. Dr. Le Blond had proposed that no one should be admitted whose rent was equal to £40 or more per annum. There are about 50,000 births every year in Paris. Out of these 18,000 take place at the public expense, yet it is scarcely likely that one-third of the mothers in Paris are so poor that they cannot pay for a private medical man. If the well-to-do did not so constantly profit by the public charities the genuine poor would receive greater and more efficient help. Medical practitioners too often are themselves to blame, for they readily give letters of recommendation for treatment at the hospital to patients who should be independent of these charitable institutions. Nor is this grievance met by establishing paying wards and such institutions as the Hôpital Dubois, pompously called the Maison Municipale de Santé, which is practically a cheap medical hotel where wealthy patients only pay a part of what they cost. Dr. Thiéry has sent a circular asking questions to the hospitals of 21 important French towns. The answers received all go to show that no real effort is made to prevent abuse, and the institution of paying patients is very widespread, the charges made varying from 2*s.* to 16*s.* per day, yet the physicians and the surgeons receive no fees from these paying patients. At Havre, however, some attempt is made to ascertain what is the financial position of the patients and at Lyons a certificate of poverty is demanded before a consultation is given at the hospitals. Similar inquiries made in the leading capitals of Europe, and notably in London, show that hospital abuse prevails in all directions and in all countries, and the grievance comprises the paying as well as the other patients. The payment is simply a means of soothing the conscience of the patient; he nevertheless remains a recipient of public charity. For instance, the administration estimates the average cost of the maintenance of patients at the Hôtel Dieu of Paris at three francs 65 centimes per day. But the land on which this hospital stands is worth 75,665,000 francs which if divided by the 563 beds the hospital contains means 134,398 francs per bed. At 4 per cent. interest this is equal to 14 francs 75 centimes per bed per day. Adding the cost of maintenance each bed costs 18 francs 40 centimes per day, and this is not all, for there is the cost of the central administration, so that each patient may be said to cost about 20 francs or 16*s.* per day. Now if a well-to-do patient pays five francs a day he is still taking daily about 15 francs out of the public purse, money which the taxpayer pays so as to help the poor. In response to the efforts of Dr. Porson the Paris Municipal Council recently voted that well-to-do patients should not be admitted in the hospitals and that they might only be received in special buildings when they paid sufficient to defray the entire cost of their maintenance without in any way trespassing on the resources at the disposal of the poor. This resolution has not, however, been sanctioned by the Prefect. In conclusion Dr. Thiéry urges that the clerks or porters at the hospitals, instead of merely taking the names and addresses of patients, should make inquiries as to their means of subsistence. A special inspector attached to the poor relief authorities of each district should then make an

inquiry to verify these statements. The patient on his side should be made to sign an agreement by which he undertakes to pay for his treatment if it should be proved that he has misrepresented his financial position. Should such deception be practised a second time by the same person then there should be a possibility of obtaining a conviction entailing a penalty of a fine and even of imprisonment. Unless under well-defined and altogether exceptional circumstances there should be no more paying patients admitted into the public hospitals. It will be seen that this paper deals with very similar grievances to those described as prevalent in England.

Dr. VACHOT, after Dr. Thiéry had concluded, pleaded in favour of the genteel poor, who he thought were quite as much entitled to hospital treatment as the working classes.

Dr. NOIR (Paris) suggested that the outdoor patients should first be treated at the local dispensaries established by the poor relief administration or Assistance Publique. All such medical relief led to inquiries and charitable persons called at the houses of the people. Such visits would be very disagreeable to persons who were in good circumstances and would materially tend to prevent abuse. In this manner also only the more serious cases would be referred to the hospitals. He further thought that students should begin by this practice among the poor and go to the hospitals at a later stage of their studies.—Dr. VANDAM protested against inquiries made as to the financial position of patients and thought that there was not much hospital abuse in Belgium.—A number of Parisian doctors then followed, warmly debating details of hospital practice in Paris, and the foreign delegates became impatient at the purely local character which the debate was assuming. At last Mr. ADOLPHE SMITH strongly protested that this was an International Congress and that a great part of the conclusions of the report only applied to France. He then narrated some incidents of hospital abuse in England showing the total difference of the state of affairs on the English side of the Channel. This was further explained by a paper written by Colonel Montefiore, which gave many statistics and showed that one-third of the London population received medical aid from charitable and Poor-law institutions. At last the conclusions of Dr. Thiéry's paper were set aside as better suited to a French congress, and the Congress adopted a resolution stating that hospitals should be reserved exclusively for the poor, and that local medical unions should strive to enforce this principle in the manner best suited to their respective local circumstances.

The Congress now adjourned to the big hall of the Hôtel des Sociétés Savantes where "a wine" was offered by the Medical Union of Paris and the neighbourhood. The hall was very elegantly decorated with palm trees and the flags of all nations. The greatest cordiality prevailed and it was generally agreed that a very good day's work had been done.

### THE ILLEGAL PRACTICE OF MEDICINE.

The Congress continued its sittings on Wednesday morning when Dr. DESCOURT, Professor of Forensic Medicine at the Paris Faculty of Medicine, read a paper on the Illegal Practice of Medicine. He points out that the economical position of medical practitioners is more and more compromised, not only by the increase in the number of practitioners, by the competition of the hospitals, by the sweating proclivities of medical aid associations, and by the sale of largely advertised patent drugs, but also because a large number of unqualified persons illegally practise medicine. In Paris alone he considers that from 15,000 to 20,000 consultations are given daily by others than qualified practitioners. If this continues medical men will in time be compelled to surrender their independence and become mere employés of the State or of large organisations, companies, &c., whose interest it will be to pay their medical officers as little as possible. The law restricting the illegal practice of medicine is not fully applied. The lay population does not take the matter in hand and medical men are too busy and too poor to risk doubtful and expensive legal proceedings. The remedy lies in the constitution of strong medical unions. Such organisations could undertake legal proceedings and in France have done so successfully on several occasions. These trials may cost each member of a medical union a pound or two in the course of a year but they will save him from illegal competition, and both the moral and material gain is far greater than the cost. Some discussion ensued.

### GREAT SUCCESS OF MEDICAL ORGANISATION IN HUNGARY.

In regard to the formation of medical unions a most encouraging report was presented by Dr. ERNEST JENDRASSIK of Budapest. It appears that at first it was proposed to form a chamber of medical men on the model of the Chamber of Barristers which was created in 1874. But it was found that such an organisation would place medical practitioners too much under the control of the Minister of the Interior. By law every medical man would be compelled to join the Chamber; he would be protected by the law, but while many duties would be imposed nothing in the constitution of such chambers indicated that anything effective would be done to deal with the economic condition of medical practitioners. Further, the results acquired in Austria and Germany, where such chambers of medical men exist, was not calculated to encourage the Hungarian practitioners. Therefore they resolved to form a free medical union which was entitled the General Medical Association of Hungary. The rules were adopted at a medical congress held in 1897, and these were shown to the Minister of the Interior and approved by the Government. The object of the association is to unite all the medical practitioners into one great corporation so as to protect their moral, social, and material interests. The association is subdivided into local branches which must consist of at least 20 members, with president, secretary, and treasurer elected for three years. The branches enjoy considerable local autonomy, but must of course conform to the general rules. The central, or, as it is called, the Presidential, Council is the link between the branches. This general medical council consists of a president, two vice-presidents, a general secretary, two assistant secretaries, a treasurer, 10 members selected among the practitioners of Budapest, 20 from the provinces, and the presidents of all the branches. As there are actually 74 branches the presidential council now consists of 112 members and is thus a very representative and influential court of appeal. An annual congress of the entire association is held in September each year at Budapest. The weakest point of this organisation is that it cannot compel by law every medical practitioner to join, but though a chamber may force everyone to subscribe it cannot compel them to obey, and unity of action is more important than the multiplicity of subscriptions.

At first some doubts were expressed as to whether the movement would be successful, but when the first branches became sufficiently numerous for it to be possible to issue a monthly publication recording what had been done the great majority of the medical practitioners of Hungary joined. It is now calculated that no less than four-fifths of the medical men in practice have become members of this widespread organisation. This is a tremendous result, achieved in an incredibly short time, and it seems to indicate that a new principle is more readily adopted in a new country than in the older established nationalities. The General Medical Association of Hungary has already collected statistics setting forth the financial position of the practitioners; it has fixed a tariff of charges for medical examinations for insurance companies; it has drawn up a report on all the laws that affect the practice of medicine and their deficiencies and forwarded the same to the members of the Government. Now the association is engaged in striving to fix a minimum fee for medical consultations which shall also govern the payments made for contract work. Finally, a benefit fund has been created to help medical men who are in distress. Members alone are allowed to subscribe to this fund, but they are not compelled to do so. It is a form of mutual insurance. The fundamental purpose of the association is the defence of the economical interests of the medical practitioners and to abolish that form of competition based on "under-cutting"—namely, taking lower fees. Hence the absolute necessity of establishing a minimum fee and bringing the whole power of the association to bear so as to prevent any practitioner accepting less. The fact that four-fifths of the practitioners of Hungary are members of this association is an example that medical men in all countries should take to heart. It is one of the most encouraging statements that have been made to the Congress. No discussion followed.

The Congress then adjourned.

### A DEFINITION OF MEDICAL DEONTOLOGY.

Dr. GRASSET, Professor at the Medical Clinic of the Montpellier University, has a very lengthy paper in which he strives to define and explain what is meant by the term "deontology." This is to be read to-morrow (Thursday), but I send its substance for the consideration of your readers. He protests that the word was not created, as Max Simon says, by Deschambre, but had been previously employed by Bentham in 1747, the British jurisconsult to

whom the National Convention decreed the honorary title of French citizen. Bentham's work was entitled "Deontology or the Science of Duty" and was translated into French by Laroche in 1834. The great Cruveilhier, when writing on the duty of the medical practitioner, said that duty is honour; it is the moral life of man and of society; where it is lax degeneration has set it; where it ceases to exist death soon follows. Deschambre said that for medical dignity to be respected the medical man must first be imbued with the sentiment of self-respect. Max Simon insisted that the preliminary step towards medical reform was to reform the medical man, but Dr. Grasset urges that before blaming medical men for not observing the principles of deontolcgy they must first be certain that they are acquainted with those principles, and at the present time the young practitioner finds no book, code, written rule, or guide in such matters. Now deontology has nothing to do with civil or criminal law. Montesquieu said: "There are means to repress crimes; these are legal penalties; but to correct bad manners there only exist better examples." Jules Simon argued that they did their duty simply because it was their duty, and Max Simon that the abstract idea of duty was alone capable of maintaining the medical practitioner at the height of his mission. "Preserve the cult of honour. In its indefinite character it is superior to the written law, it cannot be reasoned with, it can only be felt, it is a religion." It may be said that deontology is one of the highest phases of the moral law and in no profession is a higher moral standard more necessary than in that of medicine. Therefore, from the very first the medical man will not aim at success in the worldly sense. He will first seek to honour his profession by honouring himself; placing himself beyond the possibility of reproach he will pay every deference to his colleagues and be guided by the sentiment of duty and honour, not by the desire of material gain. If the public are to respect medical men the latter must first respect each other, a fact too often obliterated by feelings of jealousy and the spirit of competition. To judge others leniently and to be severe to one's self and to avoid all backbiting is the surest way to win the public respect for the profession. The Medical Union of the Paris medical men has issued a special circular to its members on this subject. It urges them never to criticise the treatment ordered by a colleague. "Let us remember that any malevolent word discredits not only certain doctors but the entire profession."

Dr. Grasset then proceeds to quote a number of rules drawn up by medical societies of different countries against all sorts of cabals or intrigues having for object to attract clients or to advertise some special remedy. Every form of self-advertisement must be strictly prohibited, as also the giving of commissions to agents, interpreters, couriers, &c., so that they may bring clients to some special establishment where a physician is attached. Monfalcon speaks even of ecclesiastics who bring members of their congregations to certain doctors and are paid for doing so, and then there are touts, matrimonial agencies, but above all hotel servants, who all receive commissions for the patients they send. Dr. Brouardel has mentioned dispensing chemists who received as much as 50 per cent. of the fees paid by the patient they had sent to a particular practitioner. This paying of commissions, though greatly opposed at first, has become very prevalent in France, and though, of course, energetically condemned is thought preferable to advertising. Sometimes the grievance is in the contrary sense and it is the practitioner who receives commissions from the chemist whom he recommends to his patients. This sometimes leads to the prescribing of expensive drugs that are not really needed. Again, there are medical men who receive commissions from the proprietors of hydropathic establishments for sending their patients to these places, and practitioners often receive circulars offering such commissions. Then there are medical men who are shareholders of such establishments and have therefore a direct financial interest in sending their patients where they will help to increase the dividends. There is no law to prevent a medical practitioner purchasing shares of a company that exploits some medical mineral springs. But deontology teaches us that the practitioner should be above suspicion, and therefore it should not be possible to say that he had any financial interest whatsoever in the remedies or methods of treatment he prescribes. In a word, though the medical practitioner has the right to claim payment for his services his first object is not to earn money but to acquit himself with dignity and integrity as a member of the medical profession. His first interest is the interest of the profession; his first care is the honour of the profession; the making of money is altogether a secondary matter; if he thinks money is the first object then let him go into trade or finance.

The next important point in medical deontology is the conduct of medical men towards fellow medical men, and especially when treating the same patient or taking each other's duty. On these matters great differences of opinion prevail among medical men themselves. For instance, in a case of acute illness can a medical man consent to continue a treatment which has been commenced by one of his colleagues? Some reply in the negative and others that the patient should have the right to change his medical adviser if he thinks fit. Dr. Grasset argues that in cases of urgency a practitioner may visit his colleague's patient, but should hand back the case when there is no longer any urgency and not accept any fee. When it is the patient who wants to change his medical adviser the new attendant called in should be in a position to show that he has done nothing whatsoever to bring about such a change, and, above all, that he has not offered to accept lower fees. The patient should be made to give a formal notification to his former medical attendant and the new medical attendant should make it his business to see that his predecessor is paid before he himself accepts any fees. On this point the opinions of a great number of medical authors and of medical societies are quoted which it would take too long to reproduce here.

Then there is the question of nomadic practitioners who go to a town or village once in the month or once a week and of the army or naval surgeons. The former system is only approved for localities where there is no resident practitioner; but with regard to the ethical right of army surgeons to practise among the civil population opinions are very much divided. The expressed opinion of authors and of medical unions is also quoted in regard to the etiquette that should govern the choice of a consultant. So long as the personal and professional standing of the consultant is beyond question the medical attendant must submit to the choice made by the patient. At Bordeaux, however, the opinion prevails that the medical attendant may object if the consultant chosen is not possessed of the special experience the former may judge necessary, and it is suggested that in such a case there should be two consultants, one chosen by the patient and the other by his regular medical attendant. Again, the question is raised—and on this also opinions are divided—whether a medical practitioner should refuse to meet a consultant who is not working in harmony with the local medical union and also whether a consultation with a homœopath should be objected to. It would seem from what is said that there is less objection to act as a consultant when sent for by a homœopath than to send for a homœopath as a consultant. The necessity of punctuality in meeting the consultant, the manner of his reception, the importance of avoiding all criticism or fault-finding in presence of the patient, &c., are dealt with at great length. The opinions of a large number of medical unions are quoted which concur in recognising that in his own house the consulting-room of the consultant is neutral ground and there he may give advice to patients who call on him without inquiring whether they have a regular medical attendant. But at the same time the consultant should not break through this neutrality by persuading his patient to change his regular medical attendant. "Theft for theft, why steal away the confidence a patient has in his doctor?" Also, if the patient is wearing some apparatus the consultant should refuse to remove it unless it be in the presence of the practitioner by whom it was applied. Indeed, in all cases it is preferable that the patient should inform his regular medical attendant that he is going to visit a consultant. After dealing with some other points the paper then proceeds to consider how these ethical principles are to be enforced and at once suggests that there should be a course of lectures on deontology at all the medical schools. Then there should be some book published on the subject and it ought to be placed in the hands of medical students. The *Concours Médical* has offered a prize of £20 for the best pamphlet on the subject and the *Lyon Médical* opened a subscription for a similar purpose. But, after all, such pamphlets would only express the opinions of their authors. The code of ethics should be based on the opinions expressed or the resolutions voted by numerous medical societies or unions. But these associations have all got the defect of being too

local in their conceptions and sentiments; a more general authority is required. Therefore, local societies should federate nationally, and, better still, internationally, and thus create a really representative body which could elect a committee capable of treating such a question in a broad spirit and in a manner applicable to all districts and to all nations.

Paris, July 25th.

## THE WAR IN SOUTH AFRICA.

THE news from the seat of war is again unsatisfactory and disappointing. From a military point of view the progress towards any final settlement seems to be very slow, and until General De Wet and his forces have been disposed of or some fresh and decisive movement has taken place on the part of the British it is not likely that things will be otherwise. The history of De Wet's raids and movements and of his successful though chequered career since the capture of Pretoria is remarkable reading. He is a sort of Rob Roy and has shown uncommon skill and ability as a military leader and guerilla chief.

We gather from all the accounts which we have received from South Africa that the cold weather has had a beneficial influence in checking the progress of enteric fever. The reports from medical officers have assumed a much more assured and hopeful tone in regard to it. With the limited railway transport at Lord Roberts's command and its insufficient amount of rolling stock and worn-out and comparatively powerless locomotives, and the long distances that have to be traversed, the difficulties in the way of supplying the army can be readily imagined. It is therefore greatly to be regretted that at this stage of the war we should hear of the frequent interruption of the railway and lines of communication by the enemy's forces.

Now that the South African Commission has not only been definitely constituted but has begun its inquiry at Burlington-gardens under the presidency of Lord Justice Romer we trust that people will be content to set aside for the time being all acrimonious feeling, of which there seems to be a good deal in South Africa, and to patiently await the result. The measures which have been taken to elicit the truth and to guard the witnesses from all injury to themselves in giving their testimony should, we venture to think, satisfy the most fastidious. It is simply ridiculous to suppose that the members of the Commission are not well qualified by their high personal character, attainments, and business qualifications to conduct an inquiry of this kind in an unbiased and thorough spirit. The preliminary inquiry, so far as it has already gone in this country, will have the effect of educating them in the principles of army systems and organisation in matters of transport, supply, and hospital field service generally. It is satisfactory that Mr. Harrison is a member of the Commission, for his intimate acquaintance with railway traffic and organisation, where the matter of transport enters so largely into the question before the Commission, will be very valuable. We may here briefly advert to the letters referring to the subject which appeared in the *Times* of July 23rd. They were all worth reading, but that by Mr. Watson Cheyne struck us, as might have been expected, as especially so. He has had large personal experience in South Africa and took a deep interest in everything connected with the hospital systems in force and he describes what he saw and the arrangements and efforts that were being made and in which he took a prominent part in consultation with the various medical officers concerned. Mr. Watson Cheyne gave evidence before the Commission on Wednesday last.

### THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

It is hard to think that we are in July. Really it seems much more than five months since we were getting ready to start in London. Though we are in mid-winter it is so warm in the sun that we are able to carry most of the patients out into the open air for some hours each day. They like it and there is no doubt that it does them good.

Christian De Wet is not broken yet, but surely it cannot be many days before our many divisions which are all round him bring about his downfall from his high pedestal as the one efficient discomforter left and so put an end to the war. There ought to be a big bag soon and there is an impression that Botha will surrender when De Wet is settled and that then the resistance to Lord Roberts will fizzle out quickly. We hear that Lord Kitchener has gone down to have a go at this most sporting of generals. There is, in fact, a widespread feeling manifest in this camp and among those who come into it that the war is all over, and the chief question on everybody's lips is how soon we shall get home. The words "impending dissolution" fairly define the feeling that pervades the hospital. The colonials who came on to our staff in various managerial capacities are all anxious to get away and to return to their permanent work. Our dental surgeon and one of our dressers (Hay) have already gone home. Blathwayt, as I told you, is in the isolation hospital and we have made him the medical officer in charge there. Poor FitzHugh is dead and two of our medical men (Greenfield and Elliot) are still in the wards recovering from enteric fever, so that the number at mess has been somewhat attenuated of late. Breeks, who came out as one of the dressers but who is a qualified medical man, has been promoted to fill the vacancy caused by FitzHugh's death.

I am thankful to say that the epidemic of enteric fever is rapidly diminishing both in the number of its victims and also in the virulence of the disease. This is what we have been hoping for ever since the cold weather set in. The effect upon the work in the various hospitals is immediate and very marked. The report from Bloemfontein is that already the hospitals there are half empty, and certainly the authorities show nothing like the anxiety they did, even two or three weeks ago, to fill up our vacant beds as soon as we notify them as empty. Indeed, we have not taken in a train-load since the sick and wounded from Mafeking arrived a fortnight ago, though small parties of Yeomanry still drop in with great regularity every day—almost, I might say, by every train. In spite of this we have been quite busy with surgery up to the middle of last week. The various hospitals which for some weeks past Surgeon-General Wilson has had ready packed in trucks to be shot up to the stations north of Bloemfontein have not all of them got through even yet. The difficulty is not one of deficient medical resources but of deficiency of transport; for, what with the repeated interruptions inflicted by De Wet upon the railway service, the worn-out condition and the small number of the engines, the delays at the deviations where a bridge has been blown up, and the scarcity of fuel and water, it requires the entire energy of the railway staff to keep the army fed.

My rubber, who came out with me, had to spend a week in hospital lately, and his services were very much missed. He pays from 30 to sometimes as many as 50 visits every day and has been so useful that we have sometimes kept cases in the hospital much longer than we should otherwise have done so that they might benefit from his attentions. Chilblains have been a great nuisance to the sisters recently. I never saw such bad ones as they have had out here, particularly the sisters in the enteric fever huts, for they have to be perpetually wetting and drying their hands.

It is rather late in the day to mention the great loss incurred because friends at home label the parcels they kindly send to South Africa with a full indication of the tempting nature of their contents; the best way is for only a general description to be put on the parcel—e.g., "gifts for the troops," rather than "tobacco," "cigarettes," or "sweets."

I should have spoken of this earlier if I had known how great the loss has been, but I told you before that people "commandeer" in this happy land, and also most people are making collections of any trophies they come across. Mafeking siege stamps are very scarce and are considered cheap at 30 guineas the set of 19, and the siege paper money sells readily at 20 guineas for notes the total face value of which is £2 6*s*. Talking of Mafeking, we have, as you know, a large number of men here who went through the siege, and it is rather amusing to hear their criticisms of the inflated accounts which reach their ears from outside of the doings of some of their fellow-captives during the siege. Every one of them is loud in praise of General Baden-Powell.

The metal badges of the hospital have arrived and were distributed on Saturday by Lady Chesham to the entire staff. Also the name-boards of the wards and beds have come and

are being stuck up as quickly as possible. Two names which I appropriated for two of my wards are the "Wills" and the "Article Club," because it was owing to some friends of mine that they were endowed—Sir Frederick Wills being personally responsible for the first, while his son, Arthur Wills, prompted the generous efforts of the club which equipped, and therefore named, the second. Mr. Wills was only just starting his good work when we left England, and I am delighted to see that he succeeded in carrying through his project of equipping the whole ward. During the past week there has arrived from the Royal Army Medical Corps Fund in London a welcome present of pipes, tobacco, and clothes for each of the non-commissioned officers and men of our staff. The gift gave them great pleasure, for it showed them that they were not forgotten, and, indeed, I do not think that Her Majesty's forces contain any harder or more devoted workers than the hospital orderlies. Their position is one of considerable danger. I know of one hospital which has lost no less than 30 orderlies from enteric fever out of less than 200, and their work in the words is exacting and continuous. For them there is no such thing as a halt, from the beginning of the war to the end, unless, indeed, they get sick themselves, and they deserve all the kindness and recognition which friends at home can secure for them.

I think I told you some time ago that my wife had kept some of the patients occupied by starting essay competitions. More lately she got one or two of them to try their hands at sketching and some others at wool-work. Both of these pursuits have "caught on" to such an extent that it takes up all of her spare time to keep the hardy warriors supplied with needles and wool and canvas and other necessaries, and it looks most quaint to see them sitting up in bed stitching away for all they are worth. Some of them rush through a pair of slippers in an incredibly short space of time. Others, again, devote their entire attention to the various games that have been sent out from home. Cards, perhaps, form the most popular of these diversions, and when we move the patients, on their reaching convalescence, from the huts to the bell tents and subsequently into the trains for Cape Town, they do not fail to provide themselves with means for whiling away the time, so that there is a perpetual demand for a fresh supply of these smaller articles of diversion to the serious wards.

Deelfontein, July 2nd.

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(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

The slack season having set in at Cape Town the usual "military hospital" baiting has recommenced, this time headed by no less a person than the Archbishop of Cape Town, ably seconded by the wife of the Military Secretary to the Governor and the majority of the members of the Good Hope Society, backed up by the *Cape Times*, which paper for some inscrutable reason seems to have delighted from the very commencement of the campaign in throwing dirt at the military medical arrangements. Perhaps some of its staff have been refused admission to the wards when wishing to pass away a leisure hour. They say—or rather I believe that Tennyson does—that half a lie is worse than a whole one, especially if it contains a modicum of truth, but that the *Cape Times* can give credence to the hearsay evidence on which it bases its leader of June 26th gives one the idea that it is only too willing to believe such manifest untruths as it publishes. What can be said for the "charity" exhibited by the head of the Church in South Africa who on the secondhand evidence of a "friend" accuses the medical officers of military hospitals of diverting clothing from the sick, and alleges that blankets provided by the society never reached the wounded, and who further states on the same evidence that only the strongest pressure would induce the "medical men" to supply the necessary comforts? Comment on such statements I leave to abler pens than mine, but I confess to a feeling of utter disgust that any person should be ready to accept on such flimsy evidence such disgraceful allegations against a body of officers who have been working their hardest to overcome difficulties of which a person in the archbishop's position can have no knowledge. I pass over the remarks of the Rev. J. J. McClure, as of course he followed in his superior officer's footsteps, and any remarks which he might make regarding the dieting of patients or their treatment by the medical authorities must be put down to ignorance of the matter in question, but still it shows the necessity of measures being taken by the proper authorities to keep meddling interlopers outside the precincts of military hospitals. The medical officers in charge of our hospitals are quite capable of doing their duty without interference from the outside by irresponsible persons, and if they do not there are means of supervising them without any assistance in the shape of "visiting ladies," whose presence, in the capacity for which they are delegated, is an insult to the medical authorities. It is a curious coincidence that this hysterical agitation should have taken place in Cape Town synchronously with the letters to the *Times* written by Mr. Burdett-Coutts, who was staying in Cape Town prior to embarking for England. To put an end once and for all to this constant interference by these (I do not doubt well-meaning) people I would suggest a committee of inquiry to investigate these alleged atrocities who should take the evidence of the men themselves, who, I must say, are remarkably silent regarding them.

I am happy to say, turning to a more genial subject, that enteric fever is diminishing in Bloemfontein and that the general health of the troops is undoubtedly improving, though, of course, every week sees a great number of invalids homeward bound. Still, on the whole there is a distinct improvement and the pressure on the hospitals is lessening.

Bloemfontein, July 1st.

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THE ACTION OF THE SMALL-BORE BULLET AND SHELL FRAGMENTS AT THE SIEGE OF MAFEKING.

*To the Editors of* THE LANCET.

SIRS,—The Mauser bullets as generally used by the Boers at the siege of Mafeking are of small calibre, low trajectory, high velocity, light in weight, and covered with a nickel casing. They do not cause any great amount of bruising in and around the wound and they are not so liable to smash a bone as are bullets of large calibre and slower velocity. In most cases the bone is merely perforated or grooved, and the missile passes through the body or limb and rarely lodges. It appears that the small quantity of bone carried on by the Mauser bullet after passing through a bone is so pulverised by the high velocity of the projectile that the particles are lost in the tissues surrounding the exit from the bone, and do not in any way retard healing of the parts, as spicules of bone formerly did when a bullet of large calibre was used; both the wound of entry and the wound of exit are small. At a range of about 1200 yards and upwards the Mauser bullet appears to lose its great velocity, as the wound of exit somewhat enlarges. This is caused by the bullet having a tendency to become deflected out of a straight line by meeting with resistance when the range is great, but as a general rule it passes through the body and rarely lodges. The fatality following the wounds made by the Mauser bullet is very low, especially in relation to the limbs, even when joints are implicated. I observed one patient who was shot through both frontal lobes; he was again on duty in a few weeks. Wounds through the lungs proved fatal, also no cases recovered where either the large or small intestines were perforated. Flesh wounds healed very quickly and without suppuration. On one or two occasions the nickel casing surrounding the ordinary bullets used stripped in the wound without any apparent contact with bone; when this occurred the wounds healed slowly and suppurated considerably. The stripping was probably caused by some defect in the manufacture of the bullet or by the enemy having tampered with the nickel-coating before firing.

*Shell wounds.*—Shell wounds of all descriptions healed with great difficulty, and the suppuration in most cases was profuse. This is accounted for in consequence of the great amount of tearing and contusion which the tissues encounter, by the large surface exposed, by fragments of clothing being carried into the wound, by pieces of shell, and by the general dirty condition of the projectiles. The shock to the system is in all cases very great, and was often the cause of death, as hæmorrhage is usually slight in all cases of wounds caused by shell fragments. From personal observation and practice I found that shell wounds treated by copious antiseptic irrigation, free and continuous drainage by ordinary indiarubber tubes, and apposition of the torn tissues by deep and superficial sutures, gave the most satisfactory results.

I am, Sirs, yours faithfully,

F. A. HOLMDEN, M.B. Edin.,
Medical Officer, Her Majesty's Service, British Bechuanaland Protectorate.

June 15th, 1900.

# CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

## THE PROGRAMME OF THE FESTIVAL.

THE proceedings in connexion with the Centenary Festival of the Royal College of Surgeons of England began on Wednesday morning, July 25th. From 11 until 1 in the unrivalled museum of the College Professor C. STEWART gave demonstrations to the Fellows, Members, and guests of the College. During the same hours Dr. T. G. BRODIE, director of the laboratories of the Conjoint Board, gave lantern demonstrations at the Examination Hall, Victoria Embankment, in illustration of the work done under his surpervision.

## MEETING OF THE COUNCIL.

The August Council meeting of the College was held in the afternoon, the President, Sir WILLIAM MAC CORMAC, Bart., K.C.V.O., being in the chair.

Dr. FREDERIC SHEPHARD DENNIS was introduced and after signing the by-laws and making the required declaration he was admitted a Fellow of the College.

The SECRETARY reported the death on July 19th of Mr. Storer Bennett, elected on July 12th a member of the Board of Examiners in Dental Surgery.

The Council passed a vote of condolence with his family.

The PRESIDENT stated that the vacancy in the Board so occasioned would be filled up at the quarterly Council meeting in October.

The PRESIDENT reported that the deputation appointed by the Council had attended at Marlborough House on July 24th and had conferred the Diploma of Honorary Fellow on H.R.H. the Prince of Wales.

The Council proceeded to elect to the Honorary Fellowship 35 surgeons whose names we have already given.

A letter was read from Sir Henry E. Roscoe, Vice-Chancellor of the University of London, requesting the Council to appoint two persons to represent the College on the Senate under Section 12 of the Statutes. The Council appointed Mr. H. G. Howse and Mr. A. Pearce Gould.

Professor PACHOUTINE, President of the Imperial Military Academy of Medicine of St. Petersburg, presented to the Council an address of congratulation on the centenary of the College. Addresses of congratulation were also received from Professor Sklifossovsky on behalf of the Imperial Clinical Institute of the Grand Duchess Helena Pavlovna, from the Royal College of Physicians of London, and from the Royal Institute of Public Health.

## THE CONVERSAZIONE.

On the evening of Wednesday there was a well-attended conversazione at the College, when the English surgical and scientific world was thoroughly well represented, although the tropical heat no doubt accounted for some regrettable absences.

On the morning of Thursday Professor C. STEWART and Dr. T. G. BRODIE continued their work of demonstrating, and at 2.30 P.M.

## THE CENTENARY MEETING

was held in the theatre lately used by the University of London at Burlington-gardens. Sir WILLIAM MAC CORMAC then delivered the following address of welcome.

## AN ADDRESS OF WELCOME BY SIR WILLIAM MAC CORMAC, BART., K.C.V.O., &C. (PRESIDENT).

MY LORDS AND GENTLEMEN,—One hundred years have passed since the charter granted by King George III. incorporated the surgeons of England into a Royal College, whereby the art and science of surgery might be the better cultivated and the commonweal of the people of this kingdom benefited. We meet to-day in order to celebrate the centenary of our incorporation, and the occasion compels us to reflect how far the College has fulfilled its high mission and merited the public consideration and confidence it enjoys and, as we believe, deserves to enjoy through unselfish service to the State.

My first and most pleasant duty is to welcome our illustrious guests who have come from many and distant countries to do honour to our College. Amongst them are great surgeons from almost all the nations, men who not only hold the highest professional position in their respective countries, but whose public record has made their name familiar to us all, while many of them are dear personal friends. We have guests, too, our own countrymen, whom we delight to honour; dignitaries of the Church and of the Law and heads of our ancient seats of learning. Although I cannot enumerate all, I can and do extend to each and every one the most cordial welcome and would wish to express our grateful appreciation of their presence amongst us.

An occasion like this possesses historic interest. We contrast our present position with that of our predecessors, and rightly congratulate ourselves on our greater knowledge and opportunities, on the facilities we enjoy for investigating the mystery of disease and for its more effective treatment. The comparison enables us to realise, as only such a comparison can, the extent of our gains and our increased opportunities for doing good. It leads us at the same time to recognise as we ought how large a debt we owe to the workers who have preceded us for so many of those happy results which are now matters of daily accomplishment.

The progress of surgery has been greater during the present century, more especially in the latter portion of it, than in all the preceding centuries combined, and it is of especial interest to us to note that this period of rapid advancement exactly corresponds with the life-history of our College, whose centenary we are assembled to commemorate. If we look back—and it is well to look back sometimes—we find in the labours of the old masters of surgery much to enlighten, to widen, and to confirm our views. A knowledge of the history of our art and science tends to make us juster judges both of our own work and of that of others. When we search the history of the development of scientific truth we learn that no new fact or achievement ever stands by itself, no new discovery ever leaps forth in perfect panoply as did Minerva, from the brow of Jove. Absolute originality does not exist, and a new discovery is largely the product of what has gone before. "We may be confident that each forward step is not ordered by one individual alone, but is also the outcome in a large measure of the labours of others. The history of scientific effort tells us that the past is not something to look back upon with regret, something lost, never to be recalled, but rather as an abiding influence helping us to accomplish yet greater successes."[1] Again and again we may read in the words of some half-forgotten worthy the outlines of an idea which has shone forth in later days as an acknowledged truth.

We see numerous instances of this in the history of surgery. Some fellow worker in years long past has discovered a new fact or indicated the path leading to a fresh truth. It is forgotten, and a century later something nearly the same, or mayhap a little better, is discovered afresh. The psychological moment has arrived, and the discoverer reaps the reward not only of his own labours but of those of his predecessors as well. The countless trials and experiments which ended in the general use of ether and chloroform in surgery—that trebly blessed discovery of a sure relief from pain—were guided by the experience of previous trials, half successful, half failures. The patient labour of our distinguished Fellow, Lord Lister, now President of the Royal Society, has been rewarded by a success to which all the world does homage, and which will crown his head with imperishable laurels. Yet none will be readier than Lord Lister to acknowledge how much the antiseptic methods of wound treatment owe to the researches and discoveries of Pasteur.

If we examine the old books we may find again and again something very near to what is the accepted doctrine of the present time.[2] History, it is said, repeats itself, and so very certainly does surgery. The difficulty of discovering anything really new is as great in surgery as in other branches of knowledge. Hippocrates (460 B.C.), the father of medicine, classified injuries of the skull in much the same way as that adopted in our modern text-books. He spoke of contusions of the cranium without fracture or depression, of simple fractures, depressed fractures, indented fractures involving the outer table alone, and fractures at a distance from the seat of injury which we now style fractures by

[1] Presidential Address, British Association, Dover, 1899, by Sir Michael Foster, K.C.B.

[2] For many of the details which follow I am indebted to an interesting history of surgery by Dr. Billings, which is to be found in the "System of Surgery," by Dr. Dennis, F.R.C.S., of New York.

*contre-coup*, a classification which leaves but a small margin for improvement. Many of the surgical instruments found in Pompeii are precisely similar in principle, if not quite equal in workmanship, to those now in use, and Pompeii was destroyed 1800 years ago (A.D. 79). Heliodorus, who lived at the beginning of the second century A.D., in the time of the Emperor Trajan, was a surgeon of much originality and appears to have been familiar with some of our modern methods and discoveries. He knew, for instance, of the ligature of arteries, of the radical cure of hernia by extirpation of the sac, and of the excision of a rebellious stricture of the urethra. Oribasius, who flourished in the middle of the fourth century A.D., was the friend and physician of the Emperor Julian. He has preserved for us the work of Antyllus, whose treatment of aneurysm by ligature of the vessel above and below the sac, with subsequent incision and evacuation of its contents, has of late years been revived with success, and is still considered by many of our surgeons as the best method of treatment in certain cases. One might cite other examples of old methods consciously or unconsciously revived, but these may perhaps suffice. The modern specialist finds his prototype in very ancient times and what we are apt to regard as a recent development is in reality a survival. Herodotus tells us that in Egypt there were as many branches of the profession as there are parts of the human body.[3]

In Europe, until the rise of the Italian Universities, surgery was mainly in the hands of peripatetic charlatans who cut for stone and operated on hernia. They travelled from town to town, kept their methods secret, and handed them down as family property to their descendants. The Hippocratic oath restricted the performance of lithotomy to those who had specially devoted their whole energies to the cultivation of this operation, and may partly serve to explain this remarkable survival. Some of these "cutters" were skilful men, but all were of necessity very ignorant. A very famous "cutter," whose name we do not know, died in Genoa in 1510, and Senerega, the Genoese historian, tells us that his method was to introduce an iron rod along the urethra into the bladder until it touched the stone, which he then extracted through a perineal wound. It has been suggested that this Genoese taught his method to John of Cremona who is credited with the invention of the grooved staff. One of the most celebrated "cutters" was Pierre Franco who was born in Provence about 1500 A.D. He used a staff and cut on the gripe as well and employed instruments for the purpose of crushing large stones. He was a man of determination and resource for he relates a case of a boy in whom, having failed to remove a stone by way of the perineum, he successfully performed the supra-pubic operation. The stone was of the size of a hen's egg and the patient subsequently made a good recovery. Colot was appointed lithotomist to the Hôtel Dieu of Paris in 1556. He had learnt what is known as the "Marian operation" from an itinerant quack, and he practised the method with, it is said, much success. The office and its secret descended to his son and to his grandson. In the great metropolitan hospitals—in St. Bartholomew's and St. Thomas's, for instance—persons were at one time specially appointed for the purpose of cutting for stone. John Bamber, who lived during the reigns of William III., Queen Anne, George I., and George II., was the last of the special lithotomists at St. Bartholomew's. He resigned his office in 1730, and his duties were transferred to the surgeons of the hospital, who were specially paid a small stipend each year as lithotomists until 1868. Bamber's portrait, by Verelst, may be seen at Hatfield House, and Lord Salisbury inherits some portion of his property through an heiress of this line who married a Marquis of Salisbury. At St. Thomas's Hospital certain of the surgeons were specially appointed to cut for stone, but before the year 1730 there appears to have been a special "surgeon for the stone," and the first of these was James Molins, who held a similar office at St. Bartholomew's. There is, indeed, no end to the matters of interest in the history of our art.

The great French surgeon Guy de Chauliac, who was born about 1500 A.D, studied at the three most famous centres of learning of that time—Bologna for anatomy, Paris for its surgery, and Montpelier for medicine. He travelled much, but finally settled at Avignon, where he became physician in succession to Pope Clement VI., and afterwards to Pope Innocent and Pope Urban. It was in Avignon he wrote his "Great Surgery," and in a special chapter of this work he records opinions which have an application even in the circumstances of our own times. "Formerly," he says, "all medical writers were both physicians and surgeons—that is to say, well-educated men; but since then surgery has become a separate branch and fallen into the hands of mechanics." It is interesting to find from Guy that there were in his day exponents of that modern foolishness called "Christian Science." These Guy describes as "consisting of women and many fools." They refer the sick of all diseases to the saints, saying: "Le Seigneur me l'a donné, ainsi qu'il Lui a plu. Le Seigneur me l'ostera quand il Lui plaira, le nom du Seigneur soit bénit. Amen." As a striking instance of my thesis I may take the great French military surgeon Ambroise Paré. We know his title to fame in substituting the ligature of arteries for the use of the hot iron in the arrest of hæmorrhage. We know also the story of how he forbade the barbarous practice of pouring boiling oil into gunshot wounds, due to the then prevailing belief that these wounds were poisoned, a belief revived with almost every war, even the latest one in South Africa. Paré had been apprenticed to a provincial barber at the age of nine years. Soon afterwards he came to Paris, attended lectures at the Faculty of Medicine, and gained admission to the Hôtel Dieu. He lived there as a dresser for three years, "seeing and knowing a great variety of diseases constantly being brought there." He was only 19 when he accompanied the king, François I., into Provence to meet the army of Charles V. He was attached to the Courts of four kings of France and, although a Huguenot, was spared at the massacre of St. Bartholomew by the direct intervention of Charles IX. It is interesting to learn that Dionis, more than 100 years after Paré's time, was urging at the Hôtel Dieu the adoption of arterial ligature in place of the caustic even then in vogue. Dionis, too, although he advised the Marian operation for stone, considered that the risks of the suprapubic method had been over-estimated, an opinion revived and insisted on by Sir Henry Thompson in our own time. We all remember J. L. Petit (1674–1750) who invented the tourniquet known by his name in the early part of the last century, and Anel who tied the brachial artery for traumatic aneurysm at the bend of the elbow, upon which procedure a claim was based for priority over Hunter, though Hunter's operation is wholly distinct in the principle involved. Towards the end of the eighteenth century, Desault, who nearly lost his life in the Revolution, was the leading French surgeon. He was accused of poisoning the wounds of some of his revolutionary patients in the Hôtel Dieu, and to be accused was in those times almost the same thing as being condemned. Desault, whose fame has been eclipsed by the brilliance of his pupil Bichat, was the first surgeon to teach surgical anatomy after the modern manner, although the great French hospital where he practised was described at that time as "the oldest, largest, richest, and worst hospital in Europe." I need not refer to more recent and greatly honoured names—Dupuytren, Velpeau, Nélaton, and many others.

In Germany, even so recently as 100 years ago, surgery was at a low ebb. George Fischer[4] tells us that quacks of all kinds, "cutters" for stone and hernia, cataract operators, and bone-setters, flourished in the land. The public executioner, whose business it was to fracture bones and dislocate joints on the rack, was supposed thereby to have acquired a knowledge of disorders of these parts and was consulted freely about them—so much so that Frederick the Great in 1744 published a decree limiting the powers of these men, and while permitting them to treat fractures, wounds, and ulcers forbade them to practise medicine. Hildanus (1560–1634), who lived in Germany at the end of the sixteenth century and beginning of the seventeenth century, has been called the father of German surgery. He was a voluminous writer, a bold operator, and his "Opera Omnia" was a work of reference for many years. Heister (1683 1758), a surgeon of much note in the eighteenth century, wrote a "General

[3] "The medical profession," he says, "is distributed among them [the Egyptians] in this wise: each physician is for a single disease, and not for more. The whole land swarms with physicians: some are appointed for the eye, some for the head, some for the teeth, others for the region of the belly, others again for unseen (internal) diseases.'—Herodotus, ii., 84.

[4] Chirurgie vor 100 Jahren, Historische Studien.

Surgery," which enjoyed much repute and was translated into English. Bilguer (1720–1796), a surgeon-general in the German army, was noted for opposing the indiscriminate amputation of limbs then in vogue for gunshot fracture of the extremities which his predecessor Schmucker had warmly advocated and practised to an inordinate extent. Towards the end of the eighteenth century Von Siebold (1736–1807), a famous surgeon who enjoyed great repute as a clinical teacher and operator, taught anatomy at Würzburg, and about the same time Richter (1742–1812) was professor of surgery at Göttingen. Richter had travelled much, was familiar with the work done in England and France, and was the best writer and teacher of his day. He was the first to place surgery in Germany on a truly scientific basis. Of those German surgeons whose names still fill our ears with their fame and whose loss we have recently deplored—Stromeyer, Langenbeck, Billroth, Volkmann, Thiersch, Nussbaum, and others—I could only repeat what all of you know as well as or better than I.

The first English surgeon of whom we possess any definite knowledge and whose writings are still in existence is John of Arderne; he was born in 1307. He must have been an accurate and close observer, to judge by the graphic description which he furnishes of cancer of the rectum. He says: "It breeds within the fundament with great hardness but with little pain. After a time it is ulcerat, oftentimes all the circumference, and the excrement goeth out continuallie." He gives a true and telling description of how the condition is to be diagnosed, and of the progress and termination of the disease.

It is noteworthy how many of the older surgeons who attained eminence spent part of their career in the army or Navy. William Clowes (1540–1604), who was surgeon to St. Bartholomew's, had been a surgeon in the navy, and wrote "A proved Practice for all Young Chirurgeons concerning Burnings with Gunpowder and Wounds made with Gunshot," and he refers to Ambroise Paré in terms of admiration. The greatest English surgeon of the seventeenth century was Richard Wiseman (1622–1676). He served in the Dutch Navy till 1644, and then entered the army of Charles I. Afterwards he spent three or four years in the Spanish navy and on the restoration joined the forces of Charles II., by whom he was appointed one of his surgeons. He published many treatises, which exercised a considerable influence on English surgery but were little known abroad. William Cheselden (1688–1752) was a surgeon of great renown in England in the early part of the eighteenth century. He was a surgeon and lecturer at St. Thomas's Hospital. In 1723 he published a treatise on the high operation for stone, but he soon abandoned this for the lateral method which he so much perfected and improved that the operation remains at the present time much as he had left it. Percivall Pott (1714–1788) was the famous English surgeon of the middle portion of the last century. He was surgeon to St. Bartholomew's Hospital, and made many and most important contributions to surgery, especially on hernia and on injuries to the head. His name remains attached to many surgical disorders. Of John Hunter (1728–1793) no detailed mention is required here. His memory and his methods continue a living influence amongst us. He made our surgery a science, and has given to us in our museum an imperishable memorial of his industry. In it are illustrated those marvellous powers of observation which had never before been equalled, and will never in all probability be surpassed. So long as surgery continues Hunter's influence must be felt. It is witnessed in the creation of so many distinguished disciples imbued with his principles and able to expound his doctrines. He embodies and represents the glory of our science, our College, and our country.

The historical *résumé* I have attempted would not be complete without some account of the connexion existing between the Surgeons and the City of London which appears to have continued quite without interruption since the middle of the fourteenth century until the foundation of the Surgeons' Company in 1745.[5] There are many entries in the City records of the admission by the Lord Mayor of Surgeons and Master Surgeons to practice in the City of London, and the licence thus granted exacted a promise "that they should well and truly serve the people in their cures and report to the Lord Mayor and Aldermen any Surgeon neglecting his patients." In 1416 the Craft of Barbers practising Surgery petitioned the Lord Mayor and Aldermen "to provide a sure remedy against unskilful persons who indiscreetly pretend to be wiser than the Masters of Surgery, and who expose the sick to the greatest danger of death or maim by their presumption." The City took immediate and, as we learn, successful action on this petition. The City recognised the distinction between Barbers and Surgeons, for they appointed "Masters of surgery" to control those practising surgery only, and other masters were annually selected to supervise those practising barbery. Early in the fifteenth century the surgeons appear as a distinct body, and in 1423 a College of Physicians and Surgeons, which had been founded chiefly through the influence of John Morstede, a surgeon who accompanied Henry V. to Agincourt, was formally sanctioned by the Lord Mayor, and powers granted to it to examine and control persons practising medicine and surgery in the City of London.

The Livery Company of Barber-Surgeons was founded in 1540 and its Hall in Monkwell-street is still standing, as it escaped destruction in the Great Fire of London. The famous picture by Hans Holbein of Henry VIII. delivering the charter of the company to the assembled Barber-Surgeons is still there, where until recently one might see the old theatre, where lessons in anatomy were read upon the bodies of executed malefactors. Thomas Vicary (149(?)–1561), sergeant-surgeon to the King, the first Master of this Company, was a wise and honest gentleman. He held a unique position at St. Bartholomew's, and there is in Holbein's picture at the Barber-Surgeons' Hall a characteristic portrait of him. Vicary was succeeded by Thomas Gale (1507–1587), who had served with the army of Henry VIII. in France in 1544 and under Philip II. of Spain in 1577. In his "Institutions of Chirurgeons" there is an account of wounds made by gunshot. He opposes the view that they are poisoned, and gives cases to prove that bullets may be left for long in the body without danger. The Barber-Surgeons appear to have borne their due share in the city pageants. At one pageant given at the Restoration the Lord Mayor and Aldermen appointed that the Company should provide "twelve of the most grave and comlyest personages; appareled with velvet coats, sleeves of the same, and chaynes of gold, to attend the Lord Mayor on horseback." Mr. Edward Arris, an alderman and barber surgeon, had a great desire to increase the knowledge of chirurgery, and to this intent bequeathed to the Company a sum to found lectures, in 1645, on anatomy, on condition that a "humane" body should once in every year be publicly dissected. The Gale Lecture was founded by John Gale a little later, in 1655, and Havers, well known for his description of the canals in bone, since called Haversian, was appointed the first reader. The Arris and Gale Lectures are still annually delivered in this College, for when the Surgeons finally separated from the Barbers in 1745 they carried nothing with them but the Arris and Gale bequests. The hall, library, and plate remained the property of the Barbers, and the new Company of Surgeons had to make a fresh start in the world.

The Act of Parliament separating the Surgeons from the Barbers became law in 1745, and a corporation was established consisting of a "Master, Governors, and Commonalty of the Art and Science of Surgery in London." John Ranby, one of the prime movers in effecting the change, became the first Master. He was serjeant-surgeon to George II., and accompanied that monarch to the battle of Dettingen in 1743. The other active mover was Cheselden, surgeon to Queen Charlotte's, to Chelsea, and to St. Thomas's hospitals. The first meeting of the new Company was held in the Stationers' Hall on July 1st, 1745. Mr. Ranby, as Master, occupied the chair, and Mr. Cheselden and Mr. Sandford were his wardens. Ten examiners were appointed to conduct the examinations of those seeking the diploma of the newly constituted company, and this number is continued in the present Court of Examiners. Part of their duty was to examine surgeons for His Majesty's army and navy, and the examination of surgeons for those services, which had been instituted in the reign of Henry VIII., was continued for a long time by the Court of Examiners until other arrangements were made at a comparatively recent date. It was for this examination, I may note in passing, that Oliver Goldsmith presented himself in order to qualify as a naval surgeon's mate on Dec. 21st, 1758. He was unsuccessful and it was well, perhaps, since he could scarcely have written "The Vicar of

[5] South's Memorials of the Craft of Surgery.

Wakefield" in the cockpit of a man-of-war. In "Roderick Random" we possess a graphic and probably fairly correct description of one of these examinations, derived, doubtless, from Smollett's personal experience, as he obtained the Company's diploma for the post of surgeon in His Majesty's navy.

The Surgeons established themselves in the Old Bailey and there they built a theatre. In 1753 Percivall Pott and John Hunter were chosen as the first Masters in Anatomy, and no more brilliant choice could have been made. It is recorded that immediately after this election the Court proceeded to discuss how they should dispose of the bodies of the three persons who were to be executed a few days afterwards for "murther" and then sent to the College theatre to be dissected. Amongst the bodies brought in this way was that of Lord Ferrers, executed in 1760 for killing his steward. It was not, however, dissected, but was buried in Old St. Pancras churchyard at the intercession of Lady Huntingdon. On July 7th, 1796, Henry Cline the elder was elected a member of the Court, but, as it subsequently turned out, the meeting at which this occurred was irregular and its proceedings were illegal, a properly constituted quorum not being present. Although only a technical illegality had taken place this incident led to the final extinction of the Company of Surgeons, for a Bill shortly afterwards introduced into Parliament to legalise the proceedings was thrown out and the Company was thereupon dissolved. The Bill had passed the House of Commons but was rejected in the House of Lords, mainly through the influence of Lord Thurlow, who was bitterly opposed to Mr. Gunning, a very distinguished surgeon, and at the time Master. "There is no more science in surgery," Lord Thurlow is reported to have said, "than there is in butchery." "Then," replied Gunning, "I heartily pray your lordship may break your leg and have only a butcher to set it, and my lord will then find out the difference between butchery and surgery." In 1796 the Surgeons migrated from the Old Bailey to Lincoln's Inn-fields. In that year a new Bill they sought for was rejected in the House of Lords on the ground that the College premises were too far removed from the place of execution and that it would be indecent and improper to carry the bodies of deceased criminals so long a distance through the streets of London. Finally, the Court in 1797 decided to apply to the Crown, and not to Parliament, for a new charter, and although opposition was again offered it proved unsuccessful, and on March 22nd, 1800, the Royal College of Surgeons in London was established by charter of King George III. This charter gave the College its former rights on condition of resigning its municipal privileges. The titles of "Master" and "Governors" were retained for a time, but a supplementary charter from King George IV. in 1821 replaced these by those of "President" and "Vice-Presidents." In 1843 another charter, granted by Her Majesty Queen Victoria, changed the title to that of "Royal College of Surgeons of England, with a President, two Vice-Presidents, Council, Fellows, and Members, as they exist at the present time. Thus it was that the Royal College of Surgeons of England was created.

It would seem in consonance with the tenor of this address, and calculated to identify this College as far as may be with the progress of surgery in England during the last 100 years, if I append a brief record of the life and work of those men who have during that period presided over its destinies, men who for the greater part have occupied a foremost position in their day, many of whom have achieved the highest honours and have each in turn devoted time and labour, often in a conspicuous degree, to further the interests of this College and thereby the advancement of the entire profession.

During the century of its existence this College has witnessed discoveries which have profoundly changed the character of surgical practice and the scope of surgical aspirations. An immense development has been effected in the operative surgery of every region of the body, and the victories of the surgeon over disease and death are without end. John Hunter and many of the older surgeons regarded operations as somewhat of an opprobrium to surgery and as a confession of failure. How far otherwise it is now! Intra-cranial, intra-thoracic, and intra-abdominal operations are successfully carried out, many of them by proceedings which had never previously been imagined even by the boldest amongst us. A great impetus has been given to conservative methods in surgery, and the preservation of life and limb is now attainable in cases innumerable, and of the most different description, where conservation was previously regarded as impossible. How largely, also, have physicians and surgeons alike developed and cultivated that highest form of conservation, the conservation of the race in the happiness and vigour which are associated with physical health. Plastic methods have been perfected in an extraordinary degree. I would only mention as a striking although common example, the union of the ends of an accidentally divided nerve and the re-establishment of its function. Although the number and variety of operations have multiplied a hundredfold, the skill and fertility of resource exhibited in their performance have equally increased and the measure of success which has been realised, whilst it rewards and gratifies the surgeon, will appear, even to the educated layman, as little short of miraculous. In the early part of the century the surgeon knew of but a limited number of operations and for the most part those only were performed which appeared to be inevitable. He knew by sad experience how generally fatal important operations and cases of severe injury were when treated in hospital wards. His patients were more than decimated by infective diseases—pyæmia, septicæmia, erysipelas, tetanus, and by suppuration, hectic, and gangrene. He recognised, and could to some extent control, these scourges, but of any effective manner of dealing with them he knew nothing. Now we possess an intimate knowledge of the essential causes of many of these diseases, and if we cannot always cure them we can do much to prevent them. Some things have hitherto baffled our efforts. The cause and the cure of cancer are as yet unknown. We possess some crude ideas about the exciting causes of the disease and attempt with indifferent success to cure it by timely extirpation. Let us hope that the new century will still be young when some surer means of dealing with this terrible and increasing malady is discovered. A notable feature of our time is the development of the museums which are now attached to most of our public institutions. Those which more immediately concern ourselves illustrate everything within the range of biological science, and foremost amongst them all is our own great collection.

Much more might one say, and much certainly there is to say, but I will only repeat that our welcome to you all is sincere and heartfelt, and most especially so to our foreign colleagues. Our science knows no narrow national boundary. It is the common property of us all. We desire to sympathise with our fellow-workers abroad and to appreciate their work, as we trust and believe that they appreciate ours. In this address I have ventured to urge that we are much beholden to those who have gone before. In but a few years all who are now present will also belong to the past. Let us hope that, as we have not altogether forgotten those who preceded us, we, too, may be remembered a little by those who are to follow.

On great occasions like the present one the older seats of learning and other public institutions had power to grant honorary distinctions. Formerly we possessed no such faculty, but by the act of Her Gracious Majesty we, too, have recently obtained permission to grant a certain number of Honorary Fellowships of this College. The Fellowship is the greatest distinction it is in our power to bestow, and we regard it as the highest purely surgical qualification obtainable in this country. It is, therefore, a great privilege and pleasure for me to present, in behalf of this College, this high honour to those distinguished men who are about to receive it. I am sure also all present will be gratified to learn that His Royal Highness the Prince of Wales has graciously consented to become the first of our Honorary Fellows. His Royal Highness has always shown his interest in the College, and has evinced a special care for the success of its centenary. It is quite fitting, therefore, that His Royal Highness, who is the patron of so many learned and scientific societies, should add the lustre of his name to the Royal College of Surgeons of England.

*(To be continued.)*

BRISTOL LUNATIC ASYLUM.—The new wing of the Bristol Lunatic Asylum is now completed. It consists of four wards, which will provide accommodation for 150 female patients, and also rooms for the nursing staff. A small hospital for infectious diseases, fitted with six beds, three for each sex, had also been added. The institution will now afford accommodation for about 1000 patients. The estimated cost of the new buildings is £45,000.

# ADMISSION OF THE PRINCE OF WALES TO THE HONORARY FELLOWSHIP OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A DEPUTATION consisting of Sir William Mac Cormac, Bart., K.C.V.O., the President of the College; Mr. John Langton, F.R.C.S. Eng., Mr. Henry Morris, F.R.C.S. Eng., Vice-presidents; Mr. Thomas Bryant, F.R.C.S. Eng., past President and Senior Member of Council; Mr. Edward Trimmer, M.A., the Secretary; and Mr. Sibert Cowell, B.A., the assistant secretary, attended by appointment on Tuesday, July 24th, at Marlborough House for the purpose of presenting to the Prince of Wales the diploma of the Honorary Fellowship of the College to which His Royal Highness was elected on June 14th, 1900.

Sir WILLIAM MAC CORMAC, after introducing the members of the deputation, addressed His Royal Highness as follows:—

YOUR ROYAL HIGHNESS,—It is my great pleasure and privilege to-day, as President of the Royal College of Surgeons of England, to confer upon your Royal Highness the title and distinction of Honorary Fellow of our College. When this question was first mooted, nearly three years ago, we discovered that we did not possess the power to confer any honorary degree. Since then a new Charter has been procured and Your Royal Highness having graciously acceded to our wishes that you should become associated with our Corporation, I now in the name and by the authority of the Royal College of Surgeons of England, admit you an Honorary Fellow of the College.

And now, Sir, that you have become a Fellow of our College, permit me to tender to you our most respectful congratulations. You have on many occasions shown your interest and sympathy with our work, and what has happened to-day is not likely to diminish that interest. We are sure that the intimate association of your illustrious name with our College is an event in its history of the greatest importance, and cannot fail to be an encouragement in the future to all those who are connected with it.

Sir William MacCormac then handed to the Prince a Diploma on vellum engraved with the College arms, impressed with the College seal, and inscribed in the following terms:—

"Know all Men by these Presents that We, the Royal College of Surgeons of England, do hereby admit His Royal Highness Albert Edward, Prince of Wales, Duke of Cornwall, K.G., &c., &c., &c., &c., an Honorary Fellow of the College.

"As Witness our Common Seal this fourteenth day of June, 1900.

"WILLIAM MAC CORMAC, President.

"HENRY G. HOWSE } Vice-Presidents.
"JOHN TWEEDY }

"Enrolled by EDWARD TRIMMER, Secretary."

The Prince having accepted the Diploma expressed in courteous terms the pleasure it gave him to become an Honorary Fellow of the Royal College of Surgeons, the centenary of which was about to be celebrated. His Royal Highness, as the first Honorary Fellow of the College, having signed his name on the "Roll of Honorary Fellows," afterwards took leave of the President and officers, and the deputation withdrew.

# FACTORIES AND WORKSHOPS IN 1899.

## I.

THE exhaustive annual report of the Chief Inspector of Factories and Workshops for the year 1899 has just been issued by the Home Office and contains, as usual, much that will repay perusal by those interested in the health of the community and the means taken to safeguard it. Dr. Arthur Whitelegge, the chief inspector, in his interesting summary of the year's work of his department, tells us that 1899 was a busy year with many changes. Trade generally was active, involving the registration and inspection of more premises and an increase in the number of accidents to be investigated, heavier lists of casualties being always expected in times of industrial activity. With regard to these we find from a table appended that the accidents reported to certifying surgeons under the Factory and Workshop Act amounted in 1897 to 15,985, in 1898 to 19,227, and in 1899 to 22,771, these totals including fatal and non-fatal accidents occurring to both male and female workers; while the 22,771 accidents of 1899 include 871 fatal accidents, 858 to males and 13 to females, and the 21,900 non-fatal accidents for the same year comprise 18,758 to males and 3142 to females. These figures give some idea of the relative amount of danger from accidents which is run by the two sexes in our trades and manufactures. We note with regret that a decrease in accidents to children observed in 1897-98 was not continued, there being, on the contrary, some increase in 1898-99. Dr. Whitelegge further points out that while the minor accidents reportable only to the inspectors increased 25·2 per cent., from 38,335 to 47,989, the number reported also to certifying surgeons advanced 18·4 per cent., from 19,227 to 22,771, and the fatal accidents 19·8 per cent., from 727 to 871. On the whole, therefore, he observes, the increase was less marked in the more severe forms of injury, but only under the head of "Loss of sight" was there actual decrease, and in that group the numbers are small, reference to the tables showing that loss of sight was recorded in 53 cases in 1898 and in 47 cases in 1899. With regard to the compulsory notification of certain forms of industrial poisoning under section 29 of the Factory and Workshop Act of 1895 the tables and details given show that cases of plumbism were on the whole fewer, which was mainly owing to the decrease in the number of cases reported as occurring in, and in connexion with, potteries. Under some of the sub-heads under which occur other trades in which lead in various forms is a source of danger diminution is also observable. Such sub-heads are "Glass-making," "File-cutting," and "Smelting." There was increase, however, in lead poisoning in some industries, especially in the manufacture of white lead and paints and colours, and in the miscellaneous group of minor lead industries. For the third year in succession there was no reported case of industrial arsenical poisoning. In the case of phosphorus necrosis also it is satisfactory to learn that fewer instances were reported, but anthrax seems to have increased and to have become unusually prevalent. Anthrax arises in dealing with horsehair, hides, and skins, and the degree of danger appears to vary markedly with the various sources from which these are imported, the worst country in respect of anthrax being conspicuously China. Mercurial poisoning occurs in the report for the first time, the Home Secretary having availed himself last year of the power given by Section 29 to place diseases traceable to mercurial poisoning in a factory or workshop among those of which notice must be given to his department.

The provisions of this Section of the Act of 1895 should be borne in mind by all medical men wherever practising. Those in large manufacturing centres are presumably familiar with them, but the medical inspector in his report in the Blue Book before us states that many elsewhere are not, such diseases as scarlet fever and their duties with regard to the notification of them being matters of everyday practice, while cases of lead poisoning are comparatively rare. The result of this is that the statistics with regard to lead poisoning are in some respects not to be relied upon as accurate or exhaustive. We may mention that the 29th Section of the Factory and Workshop Act of 1895 provides that every medical practitioner attending or called in to visit a patient whom he believes to be suffering from lead, phosphorus, or arsenical poisoning or anthrax contracted in any factory or workshop, shall (unless the notice required by the Section has previously been sent) send to the Chief Inspector of Factories at the Home Office a notice stating the name and full postal address of the patient and the disease from which in the opinion of the medical practitioner the patient is suffering. The medical man duly giving this notice is entitled to a fee of 2*s*. 6*d*. to be paid by the Home Office; by neglecting to do so he is liable to a fine of 40*s*. Care must therefore be exercised not to omit reporting a case proper to be reported, but it must be borne in mind that the illness must have been contracted in a factory or

workshop. The case, therefore, of a man who had contracted lead poisoning in coach-painting, or in burning off or removing old paint (one of the sources of danger mentioned in the report), in a factory or workshop should be notified, but that of a man poisoned in pursuing in the ordinary way the trade of a house-painter or a plumber should not. These do not come within the terms of the Factory Acts, except in so far as they may have contracted lead poisoning while performing such processes as grinding lead pigment in factories and workshops, and some friction has arisen through the necessary refusal to grant fees not authorised by the Act when lead poisoning has been reported and investigation has shown that it did not arise in a factory or workshop. The present practice at the Home Office is stated to be to assume that the practitioner can say that the patient is employed in a factory or workshop in which risk of lead poisoning may reasonably be anticipated and that he will not notify cases in which he cannot affirm this.

The extent to which lead poisoning is to be anticipated among house painters and plumbers is shown by the fact that under the conditions of limited notification mentioned 100 cases have been notified, while in addition information has been received from the district registrars of 18 cases in which lead poisoning was directly or indirectly the cause of death.

Before leaving the subject of the reports from which these useful statistics are compiled we observe that 63 certifying surgeons appointed under the Factory and Workshop Act of 1891 failed to make the report required of them under Section 19 of that Act, and that of 37 of these the appointment was cancelled owing to no satisfactory explanation of the omission being forthcoming. It is stated that the returns ultimately missing would not materially affect the figures given in the tables, so no doubt these cases arose where the certifying surgeons were seldom, if ever, called upon to perform their duties, but at the same time it is to be regretted that such returns as those before us should not be as complete and as accurate as possible. With regard to so much of the summary of the Chief Inspector of Factories and the reports of his subordinates as refer to dangerous processes and manufactures there is one matter which appears to us to be highly satisfactory. The stringent regulations which have been framed from time to time in order to minimise the danger of the workers in particular trades have evidently in many cases had the effect of abolishing the danger entirely. The regulations are possibly irksome, while the infringement of them may be attended with penalties, and either ingenuity is exercised which before lay dormant in order that the dangerous work may be done by machinery instead of by the hand of the workers, or else the process in which the employment of a poisonous substance was formerly regarded as necessary is found to be equally possible with the help of an agent that is innocuous. Match-making affords an instance of each of these changes, for we are informed in a single paragraph that in some match factories machinery is taking the place of hand labour in dangerous processes, while in one the firm has announced its intention to discard yellow phosphorus as it has succeeded in making "strike-anywhere" matches without it. Match-making, however, does not stand alone in its increasing safety; the use of lead for glazing earthenware and china lingers, the glazing being, as a rule, applied under conditions which protect the workers as far as they can be protected while lead is used, but the disuse of lead and the substitution of other glazes equally effective which do not contain it appear to be considerably on the increase and, indeed, form a hopeful feature in the report. Again, under the heading of "Industrial mercurial poisoning" we note a paragraph which informs us that the silvering of mirrors by means of an amalgam of mercury and tin (water-gilding), which was in former years the chief industrial source of mercurial poisoning, has been superseded in this country by the nitrate of silver and ammonia process. It will be seen from these instances that legislative interference with manufacturing processes with a view to protecting the health of the workers does not necessarily imply the undoing of the trade or manufacture interfered with merely because the interference is at first sight arbitrary and irksome. On the contrary, it stimulates the invention and adoption of better and safer methods, which better and safer methods must of necessity attract workmen of a better class who were deterred before by the danger of the employment.

## THE LIGHT TREATMENT AT THE LONDON HOSPITAL.

MORE than three years have now elapsed since Finsen of Copenhagen introduced to the profession his method of treating lupus by means of light, and the favourable evidence obtained at his clinic is amply sufficient to justify a more extended employment of this valuable agent in the treatment of this troublesome disease. Although Professor Finsen has used his method for three years, yet it is only a little more than six weeks since any public institution in this country has been in a position to employ this therapeutic aid. The London Hospital is the pioneer in this matter, and this is due partly to the gift to the hospital by the Princess of Wales of some of the apparatus needed for its working and partly to the praiseworthy energy of the authorities of the London Hospital who have done all that can be required for the efficient working of the method. The "light cure" is carried on under the superintendence of Dr. Stephen Mackenzie and more immediately under the direction of Dr. J. H. Sequeira who attends for several hours daily for that purpose. A fair-sized ward has been set apart for the treatment and it includes dressing-rooms for the patients. The apparatus consists of an arc light surrounded by a shade so as to prevent the eyes of those present being dazzled. From this light there radiate four or more telescopes, each telescope conveying the light to one patient. The telescope contains lenses composed of quartz which has less obstructive effect on the active rays than any other refractive medium. The space between two of the constituent lenses of the telescope is filled with distilled water to moderate the temperature and an enclosing water-jacket serves still more to abstract the heat. The lenses are so arranged as to render convergent the divergent rays proceeding from the arc light, and they are brought to a focus by another lens which is held in position by a nurse. This lens is composed of two plates, which may be of quartz or even of glass, and the space between them is filled with water and may be connected with a supply so that there is a continuous replacing of the water which may have become heated by water which is cold. This cooling lens is held by the nurse and pressed by her fairly firmly on to the affected part. The object of this pressure is to render anæmic the part to be treated, as it has been found by experience that the therapeutic effect is much greater if the tissues are bloodless than if the circulation in them is proceeding normally. The active rays seem to be those which are usually called actinic, and are ultra-violet in the spectrum; they are therefore the most refractive rays, and they are accurately focussed on the part, the pressure being so adjusted that a red halo is seen surrounding a colourless centre of a little less than a shilling in size. The lens pressing on the skin may be held in position by rubber bands, but it is thus liable to shift and the employment of an intelligent nurse gives much more satisfactory results. It is, however, necessary that the nurse's eyes should be protected by coloured spectacles, as the light reflected from the lens pressed on the skin is intensely brilliant. Whenever it is necessary to readjust the position of the patient a red cloth cap is placed over the lower end of the telescope. The patient lies on a raised table or is seated in an adjustable chair the position of which can be varied so that the rays of light shall fall perpendicularly on to the skin. Each application or *séance* lasts about an hour and as each patient is treated only once a day and the department is open from 9 A.M. to 12.30 P.M. three sets of patients are under treatment every day, an interval of a few minutes being allowed between two sittings. The nurses after a little practice do not find it at all tedious to keep the compressing lens in position, exerting pressure at the same time, even though it lasts three hours each day. Great care is taken against sepsis; in order to prevent any such accident a separate pressure lens is kept for each patient and also separate parts of any other portion of the apparatus which comes in contact with him. These are kept in a series of lockers inscribed with the patients' names. Care is taken to protect the eyes and the unaffected parts of the patients' skin from the effects of the light rays. The light is provided by an arc lamp taking 60 to 80 ampères of current. This is obtained in the following

way: the public electric main is employed to work a converter which increases the ampèrage of the current from 10 to 60 or 80, while reducing its voltage from 140 to 60. The present converter is quite capable of supplying two such arc lamps as that employed at present, so that the capacity of the department could be doubled if necessary.

The same treatment can be carried out by the employment of the direct rays of the sun, and a small portion of the grounds has been shut off by a high paling from which can be hung curtains so as to exclude the gaze of the curious. The parallel rays of the sun are focussed on to the part by a large hollow lens containing an ammoniacal solution of copper which absorbs a large proportion of the heat rays. A separate lens has to be employed for each patient and a pressure lens, like that used with the electric light, is held against the affected part. There is no essential difference in the results obtained by the two methods.

The effect on the patient is in no way painful; the application itself causes no discomfort, and in so far as it is felt at all it is said by the patients to give a sensation of gentle warmth. But a few hours after the first application there is a certain amount of "reaction"; the part swells, becomes reddened, and is tender, but even then there is no real pain. This reaction varies in degree in different cases and is always seen in lupus vulgaris, but does not occur in cases of lupus erythematosus, so that it may be of some diagnostic value. As a rule it may be said that the greater the reaction there is the better the result. The beneficial effect of the treatment is often manifested within a few days, and one or two cases have occurred in which recovery ensued after only a few applications. Generally about 15 to 20 or 25 applications have to be employed before a satisfactory result is obtained. At one time an area not larger than the size of a shilling can be treated, so that if the diseased patches are extensive a prolonged course of treatment is required. The results, however, are eminently satisfactory: the skin becomes smooth, soft, and pliable, and what scar there is attracts little notice. The cases that are the most suitable are those with small recent patches of disease, but extensive chronic cases are improved, though not so rapidly. Lupus vulgaris seems to be the only disease in which the results are marked; in lupus erythematosus there is a little beneficial action, and one case of this disease is now under treatment at the London Hospital. It is early yet to speak of the permanence of the result, but Professor Finsen finds that recurrence occurs in only a small proportion of the cases, and in those a little further treatment removes the recurrent disease. When each patient is first admitted to this treatment at the London Hospital a photograph is taken and an elaborate system of notes has been devised. At the end of the treatment a second photograph is taken, and we hope in a few months' time to show the results when sufficient interval has occurred to render it probable that recovery is permanent. It is intended in a short time to provide an afternoon *séance* for paying patients if a sufficient number present themselves. Whatever may be the ultimate verdict of dermatologists on the Finsen treatment no one can deny the striking beneficial effects in lupus of this variety of phototherapy.

## THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE following were among the principal amounts received at the Mansion House in aid of this Fund up to July 20th, when the total reached nearly £48,000:—

| | £ | s. | d. |
|---|---|---|---|
| Per the Chief Rabbi (including Great Synagogue, Aldgate, £254; New West-end, £134; Bayswater, £73; Central, £74; Hampstead, £69; St. John's-wood, £34; South-east London, £34; Dalston, £24; East London, £22; Maiden-lane, £20; New Dalston, £20 ... ... ... ... ... | 924 | 0 | 0 |
| St. Mary Abbot's, Kensington, Parish Church... ... ... | 314 | 0 | 0 |
| St. Paul's, Vicarage-gate ... ... ... ... ... ... | 126 | 0 | 0 |
| Christ Church, Victoria-road ... ... ... ... ... | 97 | 0 | 0 |
| Church of the Annunciation, Marylebone ... ... ... | 286 | 0 | 0 |
| West London Synagogue ... ... ... ... ... ... | 205 | 0 | 0 |
| Christ Church, North Brixton ... ... ... ... ... | 82 | 0 | 0 |
| Corporation of the City of London ... ... ... ... | 105 | 0 | 0 |
| St. Thomas's, Telford-park ... ... ... ... ... | 22 | 0 | 0 |
| Holy Trinity, St. Marylebone ... ... ... ... ... | 65 | 0 | 0 |
| St. John the Baptist, Leytonstone... ... ... ... ... | 20 | 0 | 0 |
| St. Alban the Martyr, Holborn ... ... ... ... ... | 40 | 0 | 0 |
| St. Philip's, Sydenham ... ... ... ... ... ... | 23 | 0 | 0 |
| Box outside Mansion House... ... ... ... ... ... | 11 | 0 | 0 |

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6486 births and 3662 deaths were registered during the week ending July 21st. The annual rate of mortality in these towns, which had been 14·5 and 15·6 per 1000 in the two preceding weeks, further rose last week to 16·4. In London the death-rate was 16·1 per 1000, while it averaged 16·7 in the 32 provincial towns. The lowest death-rates in these towns were 10·0 in Huddersfield, 10·7 in Cardiff, 11·6 in Burnley, and 11·7 in Bristol; the highest rates were 21·0 in Manchester, 22·2 in Salford, 23·0 in Sunderland, and 23·6 in Liverpool. The 3662 deaths in these towns included 555 which were referred to the principal zymotic diseases, against 344 and 427 in the two preceding weeks; of these 214 resulted from diarrhœa, 118 from measles, 91 from whooping-cough, 69 from diphtheria, 37 from "fever" (principally enteric), and 26 from scarlet fever. No fatal case of any of these diseases occurred last week in Plymouth; in the other towns they caused the lowest death-rates in Burnley, Halifax, Bradford, and Gateshead, and the highest rates in Derby, Salford, Leeds, and Sheffield. The greatest mortality from measles occurred in Derby, Oldham, Huddersfield, and Sunderland; from scarlet fever in Blackburn; from whooping-cough in Liverpool, Bolton, and Blackburn; and from diarrhœa in West Ham, Birkenhead, Liverpool, Salford, Leeds, and Sheffield. The mortality from "fever" showed no marked excess in any of the 33 towns. The 69 deaths from diphtheria included 21 in London, 10 in Sheffield, six in Leicester, and five in Leeds. No fatal case of small-pox was registered last week either in London or in any of the 32 provincial towns. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been 17 at the end of each of the two preceding weeks, had declined to 14 on Saturday last, July 21st; one new case was admitted during the week, against four in each of the two preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1877, against numbers increasing from 1754 to 1861 on the six preceding Saturdays; 222 new cases were admitted during the week, against 210, 229, and 208 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 140 and 160 in the two preceding weeks, further rose last week to 169, but were slightly below the corrected average. The causes of 39, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bolton, Oldham, and 10 other smaller towns; the largest proportions of uncertified deaths were registered in Leicester, Liverpool, Salford, and Hull.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·9, 17·7, and 17·2 per 1000 in the three preceding weeks, rose again to 19·0 during the week ending July 21st, and exceeded by 2·6 per 1000 the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·5 in Perth and 14·3 in Dundee to 19·7 in Greenock and 22·2 in Glasgow. The 538 deaths in these towns included 38 which were referred to diarrhœa, 22 to whooping-cough, 18 to measles, 11 to "fever," six to diphtheria, five to scarlet fever, and two to small-pox. In all 102 deaths resulted from these principal zymotic diseases, against 85 and 73 in the two preceding weeks. These 102 deaths were equal to an annual rate of 3·3 per 1000, which was 0·8 per 1000 above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 32 and 23 in the two preceding weeks, rose again last week to 38, of which 23 were registered in Glasgow, four in Edinburgh, and four in Dundee. The deaths from whooping-cough, which had been 22 and 21 in the two preceding weeks, rose again to 22 last week, and included 16 in Glasgow, two in Aberdeen, and two in Paisley. The fatal cases of measles, which had been 20 and 17 in the two preceding weeks, rose again last week to 18, of which 10 occurred in Glasgow and six in Edinburgh. The deaths referred to different forms of "fever,"

which had declined from four to none in the three preceding weeks, rose again to 11 last week and included 10 in Glasgow. The fatal cases of diphtheria, which had been two and four in the two preceding weeks, further rose last week to six, of which three were registered in Glasgow and three in Edinburgh. The deaths from scarlet fever, which had been four and seven in the two preceding weeks, declined again to five last week, and included two in Glasgow and two in Edinburgh. The two fatal cases of small-pox were both registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had declined from 97 to 71 in the three preceding weeks, rose again last week to 80, and were 22 in excess of the number in the corresponding period of last year. The causes of 29, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·8 and 18·2 per 1000 in the two preceding weeks, further rose to 23·4 during the week ending July 21st. During the past four weeks the death-rates in the city has averaged 19·9 per 1000, the rates during the same period being 14·6 in London and 17·0 in Edinburgh. The 157 deaths belonging to Dublin registered during the week under notice were 35 in excess of the number in the preceding week, and included 13 which were referred to the principal zymotic diseases, against three, six, and eight in the three preceding weeks; of these, five resulted from whooping-cough, four from diarrhœa, two from "fever," one from scarlet fever, one from diphtheria, and not one from either small-pox or measles. These 13 deaths were equal to an annual rate of 1·9 per 1000, the zymotic death-rate during the same period being 2·6 in London and 2·9 in Edinburgh. The fatal cases of whooping-cough, which had been two, three, and four in the three preceding weeks, further rose last week to five. The deaths referred to diarrhœa, which had been two and one in the two preceding weeks, rose again to four last week. The fatal cases of "fever," which had been one and three in the two preceding weeks, declined last week to two. The 157 deaths in Dublin last week included 26 of infants under one year of age and 34 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons considerably exceeded the number recorded in the preceding week. Seven inquest cases and three deaths from violence were registered; and 52, or one-third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

Fleet Surgeon Samuel W. Vasey to the *Centurion*. Staff Surgeon James McC. Martin, D.S.O., to the *Barfleur*.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant A. D. Jameson has proceeded to Woolwich for temporary duty.

### VOLUNTEER CORPS.

*Rifle:* 1st Volunteer Battalion the East Lancashire Regiment: Surgeon-Lieutenant A. Little resigns his commission. 2nd Volunteer Battalion the Essex Regiment: Surgeon-Captain S. A. Mugford resigns his commission.

### ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Edmund Eustace Dyer, 7th Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders), to be Surgeon-Lieutenant.

### VOLUNTEER MEDICAL STAFF CORPS.

The Glasgow Companies: Surgeon-Captain G. T. Beatson to be Surgeon-Major and to command under paragraph 55A Volunteer Regulations.

### THE SOUTH AFRICAN COMMISSION.

The Commissioners have lost no time in commencing their labours. The preliminary meeting was held at the commencement of the past week at Burlington House, when the President, Lord Justice Romer, stated that although the Commission was directed to inquire into and report upon the arrangements for the care and treatment of the sick and wounded during the South African campaign they had no compulsory or special powers conferred upon them; but they hoped and believed that practically they would not be hampered in their work by not having such powers. They proposed first of all to take the necessary departmental evidence and then to obtain from unofficial witnesses in England as much information as possible bearing on the subject of the inquiry. The Commissioners hoped to leave for South Africa on Saturday, August 4th, and they would therefore in all probability not be able to complete the evidence in England before they left. He further stated that should the Commissioners find that their anticipations were not realised and that they were substantially hindered from ascertaining the facts by the absence of compulsory powers they would not hesitate so to report to the Prime Minister and to ask his assistance in procuring the necessary powers.

It is hardly necessary to remind our readers that the Commission is now composed of the following gentlemen: Lord Justice Romer (President); Dr. W. S. Church (President of the Royal College of Physicians of London), Professor D. J. Cunningham (Trinity College, Dublin), Mr. Frederick Harrison (General Manager of the London and North-Western Railway), Sir David Richmond (ex-Lord Provost of Glasgow), and Major Tennant (secretary).

The following have been examined as witnesses:—Surgeon-General J. Jameson, C.B. (Director-General A.M.S.), Lieutenant-Colonel Johnston (Assistant-Director A.M.S.), Major W. G. Macpherson, R.A.M.C. (Deputy-Assistant Director A.M.S.), Lieutenant-Colonel J. S. Cowans (Deputy-Assistant Quartermaster-General), General Sir Henry Brackenbury (Director-General Ordnance Department), Colonel Steevens (Principal Ordnance Officer), Sir Ralph Knox (Under-Secretary of State for War), Colonel Stirling Ryerson (Canadian A.M.S.), Rev. W. H. Orford, Sir Howard Vincent, M.P., and Mr. Watson Cheyne, F.R.C.S. We hope to report the proceedings at some length next week.

### THE RELIEF OF KUMASI.

A telegram has been received by the Colonial Office from Colonel Willcocks dated "Bekwai, July 20th," in which he says: "I left Kumasi 17th July, leaving behind 150 native soldiers under Captain Eden, Lieutenant Mayne, Medical Officer Thompson, (and) Sergeant Desborough, R.A., all West African Frontier Force, and ample supplies of ammunition and of food for seven weeks, long before which I will have reinforced detachment with a force sufficient to free itself from the surrounding villages, &c. I brought away from Kumasi old garrison, most of them in hammocks, and also a great many refugees, women and children. Before departure from Kumasi had buried heaps of rotting corpses which must have been lying near fort for weeks past. I had also cut short bush and the grass which was growing up quite close to (the) walls of the fort. The work was sickening in the extreme, but at the same time all ranks helped bravely. ..... I cannot end without bringing to notice the soldierly qualities of officers and men under trials I have personally never previously known in my long experience of jungle warfare, their cheerfulness under every form of discomfort, their valour against the unseen and unknown numbers, on half rations, native soldiers without any blankets, yet always cheery. They are deserving of high praise." Amongst the names thus brought to notice is that of Dr. McDowell, Principal Medical Officer.

### DEATHS IN THE SERVICES.

Surgeon-Major Arthur Croker, late A.M.D., in his 69th year.

Brigade-Surgeon Thomas William Wright, A.M.S. retired, aged 68 years, at Blackheath, on July 20th. He served in the Ashanti war in 1873–74 and retired from the service in 1882.

Lieutenant-Colonel Charles James Hislop Warden, late I.M.S. (Bengal), on July 18th, at his residence, Highbury-grove, N., aged 49 years. He entered the Indian Medical Service in 1874.

Fleet Surgeon Thomas Martyn Sibbald on July 13th, at Taku, aged 48 years. He joined the naval service as surgeon in 1876, and was surgeon of the *Shah* when, in May, 1877, she engaged the Peruvian rebel turret-ship *Huascar* off the town of Ylo. He served in the two night torpedo expeditions, and was mentioned in despatches. During the Zulu war he landed with the *Shah's* naval brigade, accompanying the Ekowe relief column, and was present at the battle of Gingihlovo in April, 1879 (Zulu medal with clasp). He became staff-surgeon in 1888, and fleet-surgeon in 1896.

### THE SICK AND WOUNDED AT TIEN-TSIN.

We have as yet no sort of well-grounded assurance that our worst fears regarding the Legations at Pekin are unfounded. It is quite clear that the upheaval in China is a national one and of a very formidable character. The fighting at Tien-tsin has been serious and the losses on the part of the allies are considerable. We know but little regarding the medical arrangements. The navy has mainly supplied the medical officers. General Gaselee, as soon as he reaches China with his force from India, is to telegraph as to the suitability of Wei-Hai-Wei (our possession) for the location of a base hospital. His force is accompanied by medical officers and field hospitals from India and by a hospital ship as well as by transports capable of being used as hospital ships. Moreover, the American hospital ship *Maine* has been placed at the disposal of Her Majesty's Government. Most important of all—as a munificent expression of loyalty and good feeling—the Maharajah Sindhia of Gwalior has made the offer of a fully-equipped hospital ship for China, upon which he is willing to spend 20 lakhs of rupees. This princely offer is made on behalf of himself, his mother, and his wife, to testify their loyalty to Her Majesty the Queen-Empress.

### TRANSVAAL WAR NOTES.

The following officers of the Royal Army Medical Corps have been discharged from hospital to duty:—Major C. G. Woods, Lieutenant J. W. H. Houghton, Lieutenant R. D. Jephson, Major J. G. Black, and Major A. P. Hart; also Civil Surgeon F. G. Ralston.

Major Greig, R.A.M.C., and Major Anderson, R.A.M.C., are returning home invalided in the *Avondale Castle*.

The Mayor of Devonport has inspected the military hospital, Stoke, and visited the sick and wounded soldiers, who number about 45, all the others having recovered sufficiently to leave for their homes. The mayor, who was received by Surgeon-General G. J. H. Evatt, P.M.O., Lieutenant-Colonel J. R. Rahilly, and Major C. J. Addison, R.A.M.C., distributed presents to the men. About 250 more invalids have arrived by the *Cavour* and will be accommodated in the hospital.

The steamship *Britannic* arrived at Southampton on July 22nd from South Africa. She carried 505 invalids, who were admitted to the wards of the Royal Victoria Hospital, Netley.

Telegraphic news has been received of the sudden death of Captain J. S. Stevenson, I.M.S., who was lately appointed deputy sanitary commissioner. We hope to publish an obituary notice of this very promising young officer.

# Correspondence.

"Audi alteram partem."

## "THE FOURTH DISEASE."

*To the Editors of* THE LANCET.

SIRS,—I accept without hesitation the differentiation of rubella into two distinct diseases which Dr. Clement Dukes has made. His reputation as an accurate observer and his position as an acknowledged authority on all affections to which boys are subject during the school period compel attention to his important communication on rubella, and the minute description he has given of the two diseases which have passed under this name is most convincing. I was, however, prepared for his conclusions. I have said for many years that there were at least three kinds of measles, but the casual and desultory experience of consultation work did not admit of the establishment of the differences by which they might be distinguished one from the other. More particularly it was impossible to ascertain if the different species "bred true." Now that the distinctions have been laid down I recognise their accuracy at once.

I am Sirs, yours faithfully,

Brook-street, W., July 25th, 1900. W. H. BROADBENT.

*To the Editors of* THE LANCET.

SIRS,—Whilst writing a short note on the clinical contrasts of scarlatina and scarlatiniform erythema my attention was called to Dr. Clement Dukes's article entitled, "On the Confusion of Two Different Diseases under the Name of Rubella (*Rose*-rash)," published in THE LANCET of July 14th (*p. 89*). The publication of that article has made more patent to my mind a probable fact which I have for some time suspected—viz., that scarlatina is frequently diagnosed erroneously owing to forgetfulness of the existence of a disease comparatively recently described by Brocq as "erythema scarlatiniforme desquamativum." Though I say that the disease has been recently described under this name the name only is new, since under the designation of "roseola æstiva" the same disease has long been known to us. Dr. Dukes's "fourth disease" is assuredly nothing more or less than our old friend, appearing this time without the dignity of a name. That the difficulty of distinguishing this exanthem from scarlatina is very great is evidenced strongly by the special references of many of the older authors and by modern works devoted to dermatology. More recent works on the practice of medicine are guilty of the sin of omission. The prevalence in an epidemic form of Dr. Dukes's new disease does not, I think, negative the view which I have expressed, as competent observers have related instances of epidemic roseola.

The clinical differences between cases of scarlatina and scarlatiniform erythema have been at all times little discussed, at least not sufficiently considering the importance of the subject. For some time the similarity of the simpler disease to scarlatina in most of the cases of the former which I have seen has been so great that I have considered the subject worth more attention than it commonly obtains. The ability in a given case to declare the presence or absence of scarlatina—a disease attended by so many dangers not only to the individual but to others also in his immediate vicinity—will readily be admitted to be most desirable, and yet, I fear, too often the medical man has to possibly err on the safe side and advise precautionary measures of isolation and disinfection unnecessarily. These precautionary means are at all times quite an undertaking even when necessary and are proportionately more so when directed for a passing exanthem of little importance. The most trying circumstances occur in the case of adults, amongst whom, especially in the case of middle aged females, roseola æstiva is not very uncommon during the summer months. In several cases such as I have mentioned the thermometer has registered an unexpected relatively high temperature; this fact is worth mentioning as I find that one of our best authorities on the matter particularises the fact that in the minor disease rarely does the temperature rise beyond 101° F. Instances of an elevation above this do, I believe, occasionally occur and they serve to indicate the importance of not relying too implicitly upon the thermometer as a guide in differential diagnosis here. I only record the result of my observations after most careful consideration of recent cases under my care where erythema was diagnosed and where the diagnosis was verified, in so far as it was possible to do so, by the absence of the sequelæ of scarlatina or previously acquired immunity, and from the fact that there was no resulting infection from any of them. The practical advantages of directing attention to this subject through the medium of THE LANCET consist, I assume, in recording, after mature consideration, clinical distinctions between the diseases under discussion, preferably after the method selected by Dr. Dukes, in tabular form. I do not wish to recapitulate unnecessarily, nor would I presume to an act almost amounting to a revision of so able an article by appending a lengthened table of diagnosis, but I will briefly state the results of my observations in the form of contrasted sentences.

| — | Scarlatina. | Erythema scarlatiniforme. |
|---|---|---|
| Eruption... ... | Diffuse, punctiform; affected skin area not hypersensitive; rash when once out does not fade and reappear. | Patchy and erythematous, with well-defined borders; affected areas of skin sore to touch; rash evanescent, disappearing and reappearing in different parts of the body. |
| Throat ... ... | Swelling generally present, and ulceration often present. | Redness of fauces constant; no swelling or ulceration. |
| Glands ... ... | Sub-maxillary glands frequently markedly involved. | Sub-maxillary glands slightly or not at all affected. |
| Tongue ... ... | Strawberry character seldom absent. | Nothing characteristic. |
| Temperature... | Usually above 103° F. | Seldom reaches beyond 101° F. |
| Complications and sequelæ | Nephritis, otitis, &c. | None. |

I have mentioned in the above table those symptoms only which, in my experience, offer a constant contrast in the two diseases. The transient rise in the temperature (never exceeding 36 hours), the enlarged occipital glands, and the coryza seem to form a combination of symptoms almost pathognomonic of rötheln; at least one would imagine sufficiently so to exclude those affections most resembling it.

I am, Sirs, yours faithfully,

ALFRED RUTTER, M.B., C.M. Edin.

Ryhope, Durham, July 16th, 1900.

*To the Editors of* THE LANCET.

SIRS,—May I make a suggestion to Dr. Clement Dukes as to the genesis of his "fourth" infectious disease. Living here, where there are educational centres for young people, the first two or three weeks of each term are always more or less anxious to the medical officer of such schools, and he has to act without much time for reflection on his diagnosis and isolate the sick from the healthy and so prevent or arrest the spread of epidemic disorders in the schools or district.

As a student I was taught to regard German measles as a hybrid disease between measles and scarlet fever, but like many other medical men found some cases where the diagnosis was almost impossible, and on two occasions (one in the practice of a colleague, the other in my own) the following serious accident occurred. In both cases the utmost care was taken to eliminate any source of fallacy, so much so in my case that a consultation actually was held before the patient was removed. Years elapsed between the occurrence of these cases, but in both instances the diagnosis was mild scarlet fever; they were both removed to different isolation hospitals and within a week both patients took genuine scarlet fever in the hospital. These cases were doubtless examples of this somewhat mysterious "fourth" disease alluded to in THE LANCET of July 14th by Dr. Dukes. Fortunately epidemics of this so-called "fourth" disease are rare, else more mistakes would occur at infectious hospitals.

While travelling in Spain and Portugal I was struck with the numbers of mules, the importance attached to them, and the care bestowed on their breeding. Of course the mule owes its existence to an asinine father and an equine mother, and our old friend German measles may be looked upon as similarly due to the efforts of the microbes of measles and scarlet fever. But there is another animal which is also a hybrid, which owes its genesis to an equine father and an asinine mother; this animal is somewhat rare and is known as a hinny and would correspond to the "fourth" disease.

I do not pretend to give any details as to the maternity or paternity of the microbes of scarlet fever and measles in the production of German measles, or the "fourth" disease or, as Dr. Dukes calls it, the scarlatinal form of German measles. It is generally believed that hybrid animals have no productive power, but this is not strictly true, and I have most direct evidence of a mule conceiving and bringing forth.

How German measles in both forms could propagate themselves seemed a difficulty at first, but as we descend the scale of animal existence fertility and fecundity increase at a most rapid rate, and the space in development from a horse to a scarlet fever microbe might account for the propagation of the infectious diseases and the difficulty in this direction with a mule or a hinny. Still it is well known that scarlet fever and measles are more highly infectious than those hybrid forms of disease. My object in this short note is to show that the idea of a "fourth" disease had occurred to other minds, and also that anyone who reads this may be prevented from sending a case of "fourth" disease to be treated at a scarlet fever hospital. I have suspicions of another hybrid disease which I hope to refer to on another occasion.—I am, Sirs, yours faithfully,

THOMAS JOHNSTONE, M.D. Edin., M.R.C.P. Lond.

Ilkley, Yorks, July 25th, 1900.

*To the Editors of* THE LANCET.

SIRS,—If the views given by Dr. Dukes in THE LANCET of July 14th, p. 89, be reliable one important result must not be overlooked. Free desquamation alone will not be a sufficient warrant for a diagnosis of scarlet fever in the absence of a clear history and no other sequelæ. Many a medical man who in days gone by has notified such a case straight away and regarded himself as a public benefactor will in future sit on the fence and do nothing of the sort. There has been an impression abroad that however one might be misled by sore-throats and rashes there was a haven of certainty in "free desquamation." I confess to being rather glad that this haven has been bombarded, and I would like to put another missile into it by insisting that even in measles there may be protracted and free desquamation. Such a case happened to me the other day. Two girls (twins) had ordinary measles with catarrhal symptoms and in one case severe dysenteric diarrhœa. In one of these cases desquamation was going on so vigorously a month afterwards that another medical man who accidentally saw it had an overwhelming suspicion of scarlet fever. Holt is the only author I can find who mentions that the desquamation in measles may be protracted—and even he only allows two weeks—yet here is a clear case of over a month.

I am, Sirs, yours faithfully,

July 25th, 1900. GERALD S. WALTON, M.B., C.M. Edin.

## THE APPOINTMENT OF SPECIAL MEDICAL OFFICERS FOR THE CERTIFICATION OF LUNATICS.

*To the Editors of* THE LANCET.

SIRS,—Now that the "St. Pancras Scandals" have brought up the important subject of the certification of lunatics I think it is a very fit time to make a few suggestions concerning such notification and also as to the after-responsibility of people who have been inmates of lunatic asylums.

In the first place I would suggest that medical officers should be appointed for various districts, as in the case of the medical officer of health, with a fixed salary per annum (and not by the number of cases certified); moreover the medical officer should not be in private practice, so that his opinion on any case would not be biased in any way on account of being afraid of offending patients and their friends. Also such medical officers should have had previous experience in asylums, so as to be in a position to give an expert opinion on the mental condition of any person they might be called upon to certify, and in that way many patients suffering from the delirium of various diseases, such as alcoholism, meningitis, &c., would not be sent (long distances in many cases) to asylums for treatment when they should have been sent to a hospital or infirmary, and their friends, moreover, would be saved much pain and anxiety. Another important point that would tend to prevent patients from travelling in an unfit state would be a rule that every medical officer certifying a patient should see that patient not more than 48 hours previously to admission into the asylum. It would not be out of place to mention that many medical men have never certified a case and if called upon to do so would be at a loss to know what are the chief points to inquire into before certifying that a person ought to be under proper care and control, and, finally, some medical men refuse altogether for fear of prosecution. Such medical officers would also be expected to inquire into the family history of each patient and to observe the kind of home they have, their mode of life as regards drink, sexual habits and excesses, with whom they reside, and the manner in which they are treated by their friends, the knowledge of such matters often being of great importance in certain cases so as to be able to judge if statements made by patients with regard to the treatment they have received, the owning of property and money, are really delusions or not. Also that the medical officer should be present when the patient is interviewed by the magistrate so that if there was any doubt as to the patient's sanity it could be thoroughly inquired into before he was sent to an asylum. In some cases, such as mania following a drinking bout (the patient often recovering in a few days), there is no need to send them to asylums for treatment; in fact, if they were sent anywhere, a home for inebriates or a prison would have a better effect in suppressing such cases.

The above information about patients would also be of great help to the superintendents of various asylums when the subject of the discharge of a patient is under discussion, since it is very important in certain cases to know if he would be properly looked after for the first few weeks after leaving an asylum. Again, while the patients are on "trial" (before being finally discharged) such medical officers should

visit them from time to time, and in the case of a patient showing a relapse at once have them removed to the asylum again; in that way many accidents might be avoided. It might be mentioned here that in cases of medical men certifying their own patients they have occasionally been subjected to much annoyance by violence from such people after their release from an asylum which would probably not happen in the case of an independent certifying medical officer. Another important point is the obtaining of work for patients recently discharged from asylums, in which endeavour they might be materially helped by such medical officers, who would probably be in touch with members of town councils, &c.

Finally, there are many cases of insanity brought to the notice of the police owing to the eccentricities or violent habits of patients, and many accidents might be avoided if in such cases an expert in mental diseases was at once called upon to make an examination. To be able successfully to obtain all these various pieces of information without causing undue offence or annoyance to patients and their friends would in many cases require much patience, tact, and judgment, but I think asylum training, especially if combined with some experience of private practice, should enable a man to cope with the majority of cases.

I am, Sirs, yours faithfully,

Hatton, near Warwick, July 23rd, 1900. O. POLHILL TURNER.

## LEADLESS CERAMIC ENAMELS.

*To the Editors of* THE LANCET.

SIRS,—On Nov. 19th, 1898, at page 1338, and again on Jan. 7th, 1899, at page 49, you were kind enough to notice my efforts towards the discovery and practical introduction of leadless glazes, and as you have referred to the recent Parliamentary debate on lead poisoning I should like to point out an error that some persons fall into by assuming that the general use of leadless glazes would of itself entirely remove the liability of pottery employés to contract plumbism.

Reference to statistics shows that such persons as ground-layers and litho-colour dusters yield quite a large proportion of cases, and yet they do not handle the glaze in a free state; what these people use are the *enamel colours*, which are almost invariably compounds of *fritted* lead with borax and colorant oxides (see pages 7, 8, 9, and 40 of the report by Dr. Thorpe and Dr. Oliver). To meet such cases I have for many months been laboriously experimenting with the object of discovering leadless ceramic enamels, and now I submit some specimens which, although willingly admitted to be more or less defective, are nevertheless sufficient evidence that such enamels will ultimately be practicable. Then, and not until then, will it be possible to entirely dispense with lead compounds and thus completely eradicate plumbism in potteries.

I am, Sirs, yours faithfully,

WM. J. FURNIVAL.

Granville-terrace, Stone, Staffs, July 17th, 1900.

## A MEMORIAL TO THE MILITARY AND CIVIL MEMBERS OF THE MEDICAL PROFESSION WHO HAVE LOST THEIR LIVES IN THE SOUTH AFRICAN WAR.

*To the Editors of* THE LANCET.

SIRS,—The Princess Christian Convalescent Homes for Soldiers and Sailors, now in course of erection at Bisley, will soon be available for use. Many of the beds have already been endowed. The Queen has given two beds, the Duke and Duchess of York one bed for a soldier or sailor, the Princess Christian one for the King's Royal Rifles, and Princess Victoria of Schleswig-Holstein and Princess Aribert of Anhalt one bed for a "green-jacket," &c. Princess Christian has suggested to me her wish that a bed should be endowed for the sole use of the non-commissioned officers and men of the Royal Army Medical Corps. I proposed that the bed should be endowed as a memorial to the members of the medical profession, both military and civil, who have lost their lives in the war in South Africa. The ready response which I have received from a few friends to whom I applied privately, encourages me to hope that the scheme will commend itself to the medical profession generally. The amount required for the permanent endowment of a bed is £600, and towards this the Committee of the R.A.M.C. South Africa Fund has voted £200. From other sources I have received £125, and I now venture to appeal to the medical profession to make up the amount required (£275). I append a first list of subscriptions. Cheques or postal orders should be made out to Mrs. Meredith, and crossed "Barclay & Co., Princess Christian Bed." The fund, when completed, will be handed over to the trustees appointed for all the endowed beds.

I am, Sirs, yours faithfully,

CAROLINE S. MEREDITH.

21, Manchester-square, W., July 23rd.

LIST OF SUBSCRIPTIONS.

| | £ | s. | d. |
|---|---|---|---|
| R.A.M.C. South Africa Fund ... ... ... ... | 200 | 0 | 0 |
| Sir William Broadbent ... | 20 | 0 | 0 |
| Sir R. Douglas Powell ... | 10 | 10 | 0 |
| Dr. Church ... ... ... | 10 | 10 | 0 |
| Dr. Buzzard ... ... ... | 10 | 10 | 0 |
| Mr. Alfred Cooper ... ... | 10 | 10 | 0 |
| Mr. Somerset Beaumont | 10 | 0 | 0 |
| Sir T. Lauder Brunton ... | 5 | 5 | 0 |
| Dr. Barlow ... ... ... | 5 | 5 | 0 |
| Mr. H. T. Butlin ... ... | 5 | 0 | 0 |
| Dr. Playfair ... ... ... | 5 | 0 | 0 |
| Lady Broadbent ... ... | 5 | 0 | 0 |
| Lady Vaughan Williams | 5 | 0 | 0 |
| Mrs. Lang Elder ... ... | 5 | 5 | 0 |
| Mr. Charters Symonds ... | 3 | 3 | 0 |
| Mrs. W. Marshall Webb | 3 | 3 | 0 |
| Mrs. Wickham Flower ... | 2 | 2 | 0 |
| Mrs. Barlow ... ... ... | 2 | 2 | 0 |
| A Friend ... ... ... ... | 2 | 2 | 0 |
| Mr. Alfred Willett ... ... | 2 | 0 | 0 |
| Miss Ewart ... ... ... | 2 | 0 | 0 |
| Mrs. Johnson ... ... ... | 1 | 0 | 0 |
| Mrs. Fletcher ... ... ... | 1 | 0 | 0 |
| Total ... ... ... | 326 | 7 | 0 |

## PROFESSOR LUSTIG'S PLAGUE SERUM.

*To the Editors of* THE LANCET.

SIRS,—As a new series of observations with Professor Lustig's curative serum was in progress at the Arthur-road Hospital I did not intend troubling you with any communication on the subject until it was completed. But as your Special Correspondent in India, who seems to have taken the serum treatment of plague under his kind, too kind, protection and considers himself the sole arbiter of its destinies—never so happy as when sounding its death-knell and from which he appears to derive a sort of malign pleasure—is again on the warpath, the interests of truth, no less than those of science and humanity, demand that the true facts bearing upon this most vital question should be placed before your readers.

In the issue of THE LANCET of June 2nd (p. 1608) there appears from the pen of your correspondent a critique on a paper read by Dr. Alfons Mayr of the Municipal Laboratory at Bombay, wherein the various issues and conclusions arrived at by the author are so confused and mixed up by him as to prejudice those not conversant with the subject against this line of treatment and to create a distinctly unfavourable impression. And it is with a view to remove this unjust and unfair prejudice and wrong impression that I have ventured to trespass on your space, especially as I have personally conducted all the observations on the serum treatment and am solely responsible for the results achieved up to now. Dr. Mayr's paper was based, in fact, entirely upon the monthly reports submitted by me officially to the municipal corporation and such other records as I placed at his disposal.

Professor Lustig reached Bombay in June, 1897, after the first epidemic of plague had ran its course. A few sporadic cases, however, existed, and these were placed at his disposal for treatment with a curative serum he had brought with him from Florence. The results proved extremely satisfactory. As material for further observation was not available in Bombay he proceeded up country and treated some 30 cases with results equally satisfactory. When, some time after his return to Florence, he learnt that another epidemic had broken out, he offered to prepare and send down some serum with a view to test its efficacy on a sufficiently large scale, and it is needless to say that his offer was thankfully accepted by the corporation. Early in March, 1898, Dr. (now Professor) Galeotti and Dr. Poluctinci arrived in Bombay with a quantity of serum, and as the epidemic was at its height arrangements were made to begin at once with the serum treatment. As the supply of serum was to reach Bombay from time to time and at irregular intervals, and was to be limited, and as the objects then in view were to test its value on a clinical basis and to watch its effects from day to day on the more pronounced symptoms of plague, the following procedure was adopted in treating the cases. All moribund cases (those in which the action of the heart had

become gravely impaired and exhibited signs of failure or impending failure) and as also all convalescents and semi-convalescents were excluded from the treatment. The reasons for such exclusion are sufficiently obvious to all experimenters. Whenever a new mode of treatment has to be tested it is usual to eliminate all disturbing factors that tend to vitiate the final results. And as it was found from our experience of plague that the two above-named classes of cases were such disturbing factors they were excluded. The former when admitted into hospital were generally found to be beyond the reach of all possible human help, and in the case of the latter it was soon recognised that half the battle—nay, more than half and that the most important—had been already fought and won outside the hospital, and no further assistance was required. Moreover, just as the inclusion of the moribunds would not have told against the serum treatment the non-exclusion of the convalescents would have failed to convince us of its value. Nowhere, so far as I am aware, is such material selected for experiments with new methods of treatment, and in adopting this procedure there was no violent departure from the methods in vogue elsewhere—in fact, there was ample justification for it in a preliminary trial.

The first series of observations lasted from March to November, 1898, and again from February to May, 1899. During the course of this period 403 patients received the serum treatment and 1190 patients were treated by ordinary methods. The clinical effects of the serum were watched from day to day, and although in some very grave and advanced cases the patients ultimately succumbed the immediate effects on the general condition of the patients were extremely well marked, and this indicated either that the dose of the serum was too small, or that it was not strong enough, or that the treatment was commenced too late. But on the whole the improvement was quite perceptible and gratifying. When at the termination of these observations the results were tabulated it was found that the serum-treated cases had a recovery rate of 38·2 per cent., whereas that in those not so treated was 19·5 per cent. only. The latter rate was, however, not less than that of the other large public hospitals, and the combined admissions numbering 4762 in two of the largest during the same period had a recovery rate of 19·7 per cent., and thus it becomes apparent that the exclusion of moribunds and convalescents did not tell in favour of the serum by reducing to any extent whatsoever the mortality rate in those treated by ordinary methods. In fact this system of "selection" so-called or rather mis-called, was so strict and accurate as to eliminate even all mild cases, for were it otherwise the mortality rate in the serum-treated cases ought to have mounted up much higher than the average of the other hospitals.

The second series of observations was commenced in May, 1899, and is still being continued. The object with which this series was started was to determine the statistical value of the serum, and hence it was resolved to conduct observations on 1000 cases of plague, 500 to be treated with the serum and 500 by ordinary methods, the latter acting as controls, and the cases were to be taken for treatment *alternately* in the order of admission and *without any attempt at exclusion of any sort*. But objection to this method of treatment was the preponderance of either moribunds or convalescents in either set vitiating the final results. It was, however, anticipated that in two such large sets of 500 cases each these would equalise at the end, and thus no undue advantage would accrue to one side or the other. We shall see further on whether and to what extent this anticipation was justified by practical experience. Further, in order to arrive at strict accuracy and to eliminate all errors some standard had to be fixed as to what cases should be classed as moribunds and as convalescents. It was therefore determined to fix the limit for the former at 24 hours, and all patients dying within 24 hours of admission were considered as moribunds, but it was subsequently found that a large number died between 24 and 27 hours of admission, and hence 27 hours was adopted as the standard. As regards convalescents,[1] all those that had gone over the acute stage of the disease and had a normal temperature or thereabouts and had suppurating or suppurated and open buboes were considered convalescent.

And now as to the results. Up to the end of last month 480 cases have been treated with the serum, and 480 cases have become their controls, under ordinary treatment:—

| | No. | Died. | Recovered. | Percentage of mortality. | Percentage of recovery. |
|---|---|---|---|---|---|
| Serum cases | 480 | 328 | 152 | 68·33 | 31·67 |
| Control cases | 480 | 382 | 98 | 79·58 | 20·42 |

The serum cases show a recovery rate of 31 67 per cent., whereas the controls have a rate of 20·42 per cent., a difference in favour of the serum of 11 25 per cent. But the above results are not strictly accurate, and have been rendered fallacious by the undue preponderance of moribunds and convalescents in each series. The anticipation at first entertained about the equalising of these has not been realised in actual practice and thus an element of error has been introduced into the statistics. The 480 serum cases were found to include 139 moribunds and 28 convalescents, whereas the controls had 145 and 38 respectively. The former had an advantage over the latter of six less moribunds, whereas the latter were better off in convalescents by 10. Hence for a strictly accurate comparison, the only course open is to eliminate all the moribunds and all the convalescents from either series, and then deduce results from those remaining. If that is done, the results stand as below.

| | No. | Died. | Recovered. | Percentage of mortality. | Percentage of recovery. |
|---|---|---|---|---|---|
| Serum cases | 313 | 189 | 124 | 60·38 | 39·62 |
| Control cases | 297 | 237 | 60 | 79·79 | 20·21 |

The percentage of recovery stands thus at 39·62 per cent. for the serum cases, and 20·21 for the controls, a difference of 19·08 per cent. in favour of serum. These results clearly indicate the value of serum treatment in those cases that are really acute and fit for treatment, and show that in these it is possible to very nearly double the recovery rate by the use of serum. These differences in the percentages do not, however, show the full value of the serum treatment, and that could only be arrived at by following the method adopted by Professor Haffkine in determining the life-saving value of his prophylactic inoculations against plague. That system is based on calculating the relative ratios of mortality amongst the inoculated and non-inoculated, and if the same system be adopted for the serum treatment the ratio of recovery in the serum cases as to control cases would be as 1 of control to 1·55 of serum in *all* cases, and 1 to 1·96 when the moribunds and convalescents are excluded from both the series. Or to put it in another way, if 100 cases out of a given number recover under ordinary treatment the same number if treated with the serum would give 155 recoveries. And therefore the percentage of recovery is enhanced in one case by 55 per cent. and by 96 per cent. in the other.

These, Sirs, are the plain and unvarnished facts with regard to the use of Professor Lustig's serum in the treatment of plague and they place before the reader the truth, the whole truth, and nothing but the truth. We have no reason to be dissatisfied with the progress made within two years of its application. Neither the mode of its preparation nor its application at the bedside have yet been finally determined and it is only by further research, experiment, and prolonged clinical observation that we shall be enabled to place it on a proper basis. So far as we have gone we have been able to prove that the serum treatment is the only treatment that can in any way appreciably reduce the high mortality of plague and we abide by our experience. When the diphtheria antitoxin required more than a decade for its perfection is it not reasonable that sufficient time should be allowed for the application of a serum against a much more rapidly fatal and more deadly disease like plague? And is it demanding too much of special correspondents to ask them to withhold awhile their *obiter dicta* and let those best conversant with the subject to work out, quietly and undisturbed, their destiny until they reach their goal, which has but one and only aim in view—viz., the lessening of human suffering and the saving of human life?

I am, Sirs, yours faithfully,

N. H. CHOKSY, M.D.
Chief Medical Officer, Arthur-road Hospital.

Bombay, July 7th, 1900.

[1] All those that were taken as convalescents in both the series ultimately recovered, and there was not a single death amongst them.

## "RODENT CANCER OF THE CORNEA."

*To the Editors of* THE LANCET.

SIRS,—The interesting case published under the above title by Mr. Sydney Stephenson in THE LANCET of July 21st

would have been much more valuable had the diagnosis of cancer been verified. Judging from Mr. Stephenson's description and diagram the characters of the disease in his case agreed so closely with those of the well-known though somewhat rare chronic creeping ulcer of the cornea, in which there is, I believe, no suspicion of malignancy, that one is compelled to ask in what particulars Mr. Stephenson's case differed from the type? It has always seemed to me unfortunate that the term "rodent," already in use for a form of cancer of the skin, should also have come into use to designate this form of corneal ulcer. If Mr. Stephenson's case were cancerous one can only say that rodent cancer of the cornea, though not hitherto recognised, cannot be very uncommon, for the form of corneal ulcer apparently illustrated by Mr. Stephenson's case is described in most of the standard works on diseases of the eye. The galvanic cautery vigorously applied to the extending border seems to succeed better than any other treatment, but some cases baffle all attempts at cure.

I am, Sirs, yours faithfully,

July 25th, 1900. E. NETTLESHIP.

## "ARSENIC IN SODIUM PHOSPHATE."

*To the Editors of* THE LANCET.

SIRS,—In your criticism of the above case contained in your issue of July 21st, p. 208, after stating the fact that we can supply phosphate of soda free from arsenic, you say: "It is a pity, we think, that if, as these druggists state, they knew of the important impurity they did not give greater and earlier publicity to the fact." As manufacturing chemists we certainly do not feel it our duty to warn the public, the medical profession, the wholesale chemists, or other manufacturing chemists of impurities not provided for by the British Pharmacopœia and contained in the products they are interested in. Our duty appears to us to be in making our articles free from these impurities and of the highest standard of purity.

We are, Sirs, yours faithfully,

MAY AND BAKER, LIMITED
(per W. E. B. Blenkinsop, Managing Director).

Battersea, S.W., July 24th, 1900.

## "THE COMPARATIVE GERMICIDAL ACTION OF SOME DISINFECTANTS."

*To the Editors of* THE LANCET.

SIRS,—My attention has recently been drawn to a paper under the above heading in THE LANCET of June 23rd (p. 1797), by Mr. Arthur H. Burgess of Manchester, and I write to point out that the comparative results obtained by him are greatly at variance with those of other observers and that in my opinion this discrepancy is due to the method which has been employed in arriving at these conclusions. The thread method was formerly much used, but as far as I am aware is seldom employed now as it was found to give discordant results. In my own practice I have given it up almost entirely, except in testing spore-bearing organisms under certain conditions and also in experiments on gaseous disinfection, owing to the uncertainty of its results and the difficulties of manipulation.

One of the difficulties attending the thread method is that due to grease, and Mr. Burgess in his paper does not mention whether he took precautions to ensure the freedom of the threads from grease, as he only refers to sterilising them before use. The most important error, in my opinion, arises from the fact that when the threads are partially dried without any attempt being made to remove the organic matter of the broth emulsion, a film of dry albuminous matter is formed which protects the organisms, and that therefore I cannot agree with Mr. Burgess when he says that "the bacilli are freely exposed to the action of the disinfectant in solution, no albuminous matter being present." Another point which is worth bearing in mind is the fact that it is almost impossible to conduct a series of inoculations in such a short interval as one minute, and if Mr. Burgess used different cultures for his one-minute experiments then the results are not strictly comparable. I notice that his sub-cultures were incubated for 10 days. This time seems unduly prolonged, as with most cultures of bacillus coli communis a growth or turbidity occurs in a much shorter time than that when kept at blood heat. The method described by Mr. J. T. A. Walker in his letter[1] is one which I have employed for some years in a slightly modified form, and I believe it to be at present that which gives the most regular and constant results, and it would be interesting if Mr. Walker would publish in your journal the experiments referred to in his letter as they could then be compared with the results obtained by Mr. Burgess.

I am, Sirs, yours faithfully,

SAMUEL RIDEAL.

Victoria-mansions, Westminster, S.W., July 25th, 1900.

## PLAGUE IN TURKEY.

(FROM A CORRESPONDENT.)

FOR some months past plague has been present in more than one portion of the Turkish Empire, but up to the present it has nowhere given rise to anything of the nature of a severe epidemic. The outbreak which has naturally caused the greatest apprehension has been that in Smyrna, on account of the size and importance of the town, of the amount of shipping constantly visiting the port, and of its proximity to Constantinople. Fortunately, the outbreak has so far been of a very mild character, only 17 cases in all having been reported in the course of over two months. But the slowness with which plague takes hold of a place is a well-known character of the disease, and bearing the example of Calcutta and other places in mind it is impossible not to feel some degree of apprehensiveness for the future behaviour of plague in Smyrna.

The first recognised case of the disease there was seen on May 7th, when the patient had already been ill some few days. The patient was an elderly Jew, 60 years of age, living apparently in very poor circumstances. The second case occurred on May 26th, or nineteen days after the recognition of the first case. This patient was also a Jew, a youth, aged 23 years, who occupied a *khan* some quarter of a mile away from that occupied by the first patient; he was taken ill apparently on May 25th. Another short interval without a case followed, but on the night of June 4th–5th a third person fell ill with the disease. This was a boy, an Ottoman, aged 14 years, acting as domestic servant in the Ski-Tchesmelik quarter, a long way from the part of the town where the other patients had lived. The fourth case was also that of a Turk, a man aged 45 years, who lived outside the town of Smyrna, on a hill called Mount Bech-Tepé, where a few people dwell in a small group of isolated huts. He was first seen on June 15th, but the date of his attack is uncertain. All these four persons suffered from the disease in a remarkably mild form and all recovered. In each the diagnosis was made certain by the isolation of the plague bacillus from the bubo. In none could any direct connexion with a previous case of the disease be traced. The fifth case, on the other hand, ended in death, and it proved to be the first of a group of cases which occurred in and around a particular *khan* or group of houses. This is known as the Echeref-Pasha *khan* and is situated in the Bach-Durak quarter of the town. The fifth, sixth, seventh, ninth, and eleventh cases of plague were all in persons inhabiting this *khan* or its neighbourhood. The remaining cases, into the details of which it is scarcely necessary to enter, occurred in various other quarters of the town, and little or no trace of connexion could be found between the successive cases. The last was reported on July 8th; the patient had been ill since the 5th. A week has now elapsed without a fresh case being reported; this is reassuring as far as it goes, but in view of the wide extension of the infection throughout the town of Smyrna only the most sanguine can venture to hope that the outbreak is over and the infection completely eradicated. A less reassuring feature of the outbreak is the tendency shown to a successive increase in the fatality of the disease. At the outset it was of a mild character, and the first four cases all recovered, as already stated. Then followed, between June 17th and 27th, ten cases, of which three proved fatal; but on July 1st, 4th, and 8th three fresh cases were reported, every one of which proved fatal. It is interesting, in connexion with the Smyrna outbreak, that no sickness or mortality among rats has, it

[1] THE LANCET, July 21st, 1900 (p. 222).

is said, been observed. The serum treatment was employed in some of the cases with more or less satisfactory results.

At Trebizond a single case of the disease has been reported. The patient was a child, aged five years, who fell ill on June 11th. Her father was employed in the Custom House in looking after contraband goods, and it has been suggested that the infection may have been imported by means of some goods of this nature. The child had a very mild attack of the disease and for a time it was hoped that in spite of the clinical appearances it was not plague at all. The bacillus could not be found in smear specimens from the contents of the glands, but after some days it was found by means of culture and by inoculations into guinea-pigs, and all doubt as to the specific nature of the disease was thus removed. Fortunately, no subsequent cases have occurred, and it seems possible to hope that, as active measures of isolation and disinfection were at once enforced in regard to this single case, Trebizond may escape without any further spread of the disease.

In the Hedjaz plague has almost disappeared. In the week ending July 9th three deaths from the disease were reported from Jeddah and none from Yambo. In Jeddah from the beginning of the outbreak on April 26th up to July 9th the deaths from plague were in all 81; and at Yambo from April 11th to the same date the deaths numbered 67. It is noteworthy that the outbreak in Jeddah this year, as in past years, coincided with the great annual pilgrimage to Mecca and Medirah.

The remainder of the Turkish Empire appears to be for the present quite free from plague. A few cases of the disease recently occurred in the well-known endemic centre of plague in Assyr, in Arabia. Mesopotamia, on the other hand, where the disease has from time to time prevailed in past years, has this year apparently remained free from it, although in Persia, at no great distance from the Turco-Persian frontier, an outbreak of some severity has occurred within the past few months.

July 15th.

## PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending June 9th are as follows. Remaining at the beginning of the week, 88; admitted, 4; discharged, 5; died, 3; remaining at the end of the week, 84. The totals up to the end of the week are as follows. Cases 258; deaths, 95; discharges, 89; contacts, 1512; remaining, 81; cases among contacts, seven. The Chinese are included among the above figures, of whom there were attacked 10, with eight deaths. All other patients were whites.

The number of attacks during more recent weeks having been 38, 23, 23, seven, 17, and four. It is hoped that the epidemic may now be nearing its end.

From time to time sick cats have been mentioned by owners, but on inquiry it was usually found that they had already been got rid of. Two or three have been submitted to examination, however, but the bodies of these felines have furnished no evidence of plague until this week in the case of an animal which was secured and forwarded by a medical man and which was dying at the time of its being received. Having been killed with chloroform, it was found that the cervical glands were swollen and full of plague bacilli. No other organs were affected. The only other evidence that cats could and did suffer from plague came from Mauritius in the course of last year.

June 11th.

By the week ending June 16th there were remaining at Sydney suffering from plague 84 persons; 10 more patients were admitted and 15 were discharged; three died, leaving 76. The totals at this date read: Cases, 278; deaths, 98; discharged, 104; "contacts," 1559; "contacts" remaining, 100; and cases among "contacts," seven. Included among the above are cases among the Chinese, of whom 10 have been attacked, with eight deaths. All the other patients were whites.

No reason at all has appeared for supposing either that the cases recorded during previous weeks have not included practically all cases which have occurred, or consequently that the recorded cases were accompanied by a proportion of the ambulant cases usually observed or assumed during epidemics elsewhere. Recently, however, two or three such cases have been encountered. Thus a case which turned out to be plague having been reported by a medical man it was ascertained during inquiry that the patient's father had fallen ill just a week earlier. He had stayed from work for one or two days but had not thought it worth while to consult a doctor, yet he had an inguinal bubo of small dimensions and had had other symptoms which rendered it quite easy to give a confident diagnosis of plague. In another case, which came to light incidentally, the patient had never given up work; he also had been ill about a week and had a slight bubo. Both of these cases, which were promptly isolated at the plague hospital, would have been overlooked but for circumstances quite unconnected with the illnesses.

The second series of public inoculations yielded in all not more than 2500 inoculated in the course of more than a month, and has consequently been closed. Prophylactic serum is now being distributed to medical men; the demand is small and as such diffusion of it has practically no bearing on its use to prevent or abate an epidemic this need not be regretted. At all events, such preventive use of it has been made as the public would allow.

June 19th.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*Birmingham and Midland Eye Hospital.*

THE annual meeting of the governors of this hospital was held on July 20th, when the seventieth annual report was read. In this it was stated that the extensive and necessary sanitary arrangements of the hospital had been completed, much to the comfort and well-being of the institution. The annual subscriptions amounted to £3716, and the donations to £792 11*s*. The total payments for the year amounted to £7204, but of this no less than £1429 had been expended upon repairs, including the sanitary alterations alluded to. The total number of patients were: in-patients admitted with ticket 589, without ticket 125; out-patients admitted with ticket 17,920, without ticket 9913. The medical report showed that 788 operations had been performed upon in-patients, 315 of which were for the removal of cataract or capsule, of which only three were unsuccessful. Iridectomy was done in 176 cases, and 93 eyes had to be removed. The number of operations on out-patients was 504, including 77 for the cure of squint and 293 for the removal of tumours from the eyelids. The committee expressed their satisfaction at the increased facilities for the accommodation of the nurses and servants. The question of affording aid to the children of the elementary schools who are known to want some sort of mechanical assistance to their eyesight was a subject which had engaged the attention of the committee, the chairman stating that no practical plan had at present been settled, the matter being beyond the power of the staff to deal adequately with such demands as would be made upon them from this source.

*University of Birmingham.*

The munificent donation of £50,000 from Sir James Chance comes as a welcome addition to the amount required to complete the endowment fund, which is stated to be £250,000. Equally generous is the gift of land from Lord Calthorpe and his son which is valued at £20,000. The new university has been fortunate in the friendship of those who have made large donations. Mr. Andrew Carnegie gave £50,000, and an anonymous donor a similar sum. The total amount promised in land and money reaches about £400,000, of which amount one half has been furnished by six donors. This is an encouraging example, yet there are still numbers who might swell the total by combined efforts in the cause of this valuable scheme in this great industrial centre.

*Misleading Statistics.*

It is a saying attributed to Sydney Smith that there is nothing so fallacious as figures except facts. The truth of the first part of the proposition is illustrated by the weekly return of the medical officer of health one week being 19·2 per 1000, while in the previous week it was only 15·6. It seems that the statistics from the workhouse had not been included in the latter return. It was stated in explanation at a meeting of the guardians that their returns were made

to the registrar's office and that the blame was not to be attributed to them. The entanglement of red tape appears to have come in as an element of error, and it is to be hoped that some arrangement between the respective authorities will cause some adjustment which will make these returns reliable as authoritative statements from the proper quarter.
July 24.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*The Manchester Sewage Case.*

MR. YATES, Q.C., the stipendiary magistrate, delivered judgment on July 11th in the case of the Mersey and Irwell Joint Committee against the unhappy Manchester Corporation, which for a long time past has been in the condition, so far as the sewage question goes, of living between the hammer and the anvil, or, as some would have it, between the devil and the deep sea. It would be invidious to distinguish in the latter simile, but the Local Government Board, stolid and immoveable, may represent the anvil, while the Joint Committee hammers vigorously and repeatedly, the corporation having a bad time of it as it lies between the two. The corporation has a scheme believed to be efficient which the Local Government Board does not sanction. Meanwhile, pollution goes on to a disgraceful extent so that the Joint Committee prosecutes the corporation. As the magistrate said: "The difficulty really is that a proportion of the corporation do not realise the absolute necessity of doing at once what alone the Local Government Board will sanction, and do not realise the great injury they are doing day by day to those below their outfall." The Board insists on the purchase of land for filtration; the corporation does not want to buy land for that purpose nor does it go on with its own bacterial scheme, and so this filthy sewage flows into the Ship Canal and poisons the air for miles along its course, but it is said that plans and specifications are being prepared and that the whole question will be considered in September, and for that reason the magistrate did not "impose penalties for all the days referred to in the summons, but considering that this is the second occasion on which we have had to impose penalties we think that they must be increased, and we therefore impose a penalty of £50 in respect of each of five of the days (amounting to £250 and costs). We ought to add that if nothing is decided in September we shall have no option but to impose penalties, if asked to do so, *de die in diem*." If the hot weather continues, as it may, for the next two months the condition of the Ship Canal will be better imagined than endured.

*The Extinction of Rabies.*

It appears that the Board of Agriculture has now no muzzling orders in force. In 1895 as many as 672 cases of rabies were reported, but they have gradually decreased till last year when there were nine. The county of Lancaster suffered specially, having nearly a fifth of the total number of outbreaks. There were only five cases in 1898 and none since, so that we may hope to have done with the disease unless there is re-importation. The restrictions as to the movements of dogs into and out of the country seem in some cases unnecessary and pedantic, but it is as well to err on the side of caution and safety even at the cost of occasional private inconvenience and annoyance.

*Glass in the Streets.*

It is not very often that one finds public attention roused to one of the dangers of our streets and roads, that of broken glass; yet it has been recognised as a danger certainly since 1844, when an Act of Parliament gave magistrates power to impose a fine of 40*s*. for throwing broken glass into the streets. It is well, therefore, that the attention of the Manchester Watch Committee was drawn on July 12th to this "idle and senseless practice" by an influential deputation. The representative of the Royal Society for the Prevention of Cruelty to Animals spoke of the injuries to horses and other animals through broken glass. The Manchester and District Cycle Traders' Association, the Tram-owners' Association, the Mineral Waters Manufacturers, the Cyclists' Touring Club, the National Cyclists' Union, the Motor Car Club, the cycle employés of the Post Office, and other organisations were represented and concurred in the appeal to the committee. The numbers interested in this matter are very great. There are said to be 25,000 cyclists in the city whose tyres are endangered, as well as the numerous owners of rubber-tyred vehicles of all descriptions. The deputy-chairman of the committee told the deputation that there had been two prosecutions in the previous week, pointed out the great difficulty the police had in detecting offenders, and invited the coöperation of the general public. The throwing about and breaking of bottles is one of the bad habits of the British tripping public when holiday-making and is a great and dangerous nuisance in the country and the seaside. The education of the day has not done much as yet to soften manners and render them less brutish. This, however, does not come within the scope of the new code.
July 24th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Public Health of Dublin.*

THERE has as yet been no practical outcome of the recommendations of the Viceregal Public Health Committee, but it is satisfactory to note that there has been nevertheless a steady and considerable reduction in the death-rate of the city extending now over many weeks. This is all the more important inasmuch as the city is already crowded with tourists, while an entirely unprecedented number of visitors are expected over next year to follow in the footsteps of Her Majesty the Queen.

*The Dublin Boundaries Bill.*

The judgment of the joint committee of both Houses as regards the Dublin Boundaries Bill was made public on July 19th. In connexion with the health of Dublin it is satisfactory to note the unanimous decision of the committee that it would be better to have the treatment of the sewage and drainage of the city and townships under the same administrative control. The recommendation is to appoint a joint drainage board for the city, Rathmines, and Pembroke representing the corporation and the two urban councils and to distribute over the entire area the past and future burdens of both systems of drainage. From the reply obtained from Mr. Balfour quite recently, in answer to a question put by Mr. T. Healy, M.P., this proposal of the committee will probably soon take legislative shape. In this connexion the corporation have scored a distinct success, for they have secured the condemnation of the outfall advised by the townships, while both Pembroke and Rathmines will eventually be forced to pay their share of the main drainage scheme.

*Unqualified Midwives.*

An inquest on a case of very great importance, especially at a time like the present when there is such a discussion in reference to midwives, was held on July 17th. It would appear that a married woman of the poorer classes, aged 34 years, died at her residence in a working-class district of Belfast on July 10th from post-partum hæmorrhage, having been previously confined of twins, one of whom was still-born. She had been attended by an unqualified "handy-woman" who, in her evidence, said that she had been practising midwifery for 20 years and had attended the deceased at six different confinements. A certified nurse who was called in found the woman (the children having been previously born) in a dying state. The confinement was in the evening and the "handy woman" said that on the next morning and afternoon she advised that a medical man should be sent for. The certified midwife swore that had she attended the woman in the morning and had seen her condition, as deposed by the "handy woman," she would have considered it her duty to have sent for a medical man. Dr. R. Munn said that death was due to post-partum hæmorrhage. He believed that a proper midwife would not have hesitated on insisting that a medical man should be sent for. The coroner, in summing up, said it was a terrible thing that the lives of people should be sacrificed by persons presuming to act as skilled nurses. If proper medical help had been procured both the mother's and the child's life might have been saved. The jury found that in the case of the mother death was due to hæmorrhage, and they considered that the woman who attended her did not bring about the death by want of skill or attention to her duties. The coroner said that all the jury had violated their oaths by arriving at a verdict contrary to the evidence and in the very teeth of the evidence. The foreman

protested against this allegation. In the case of the child the jury found that it was stillborn. The case is a most unsatisfactory one. On the one hand, those who really knew medically the circumstances of the case said that a medical man should have been called in. On the other hand, a lay jury said the "handy woman" was not at fault in neglecting to summon such advice. The whole case, by lifting the curtain, gives us an idea how the poor are still liable to be attended by the most ignorant women who have had no training; and it is a strong object-lesson in favour of preventing any of the so-called "handy women" being allowed charge of such cases. The better trained a nurse is the more quickly will she recognise that the gravity of the case demands that she should summon a medical man to her assistance.

*The Typhoid Fever Epidemic at Belfast.*

During the week preceding July 14th it appears that 34 cases of typhoid fever have been notified as compared with 41 in the corresponding one of the previous year. The death-rate from the principal zymotic diseases was 1·6, the death-rate from all causes being 15·7.

*The Royal Victoria Hospital, Belfast.*

It is said to be probable that the foundation-stone of the New Royal Victoria Hospital will be laid in September by the Prince and Princess of Wales when they visit Ireland.

*Disastrous Shipping Accident in Belfast Lough.*

On Saturday afternoon, July 21st, in a fog in Belfast Lough, two Scotch steamers, the one full of excursionists returning home from the North of Ireland to Glasgow, the other returning comparatively empty from Scotland, came in collision. The one vessel struck the other with a sliding blow, her anchor scraping along the side of the other and occasioning terrible injuries to the excursionists lining the rail. The excursion steamer returned to Belfast when the injured were removed by the admirable ambulance system (three vehicles were constantly employed) of the city to the Royal Victoria Hospital, where the resident and visiting staff (hurriedly summoned by telephone and messengers) had a very busy evening and night. It is said that five people, owing to the collision, have been killed; 21 are retained in hospital, and an immense number have been treated as extern patients. Not since the terrible railway accident at Portadown have the Royal Hospital staff had to cope so suddenly with such a serious surgical state of affairs. The company owning the steamers, the injured, and their friends have expressed their profound thanks to the hospital authorities and to the fire brigade for the splendid ambulance arrangements. From a surgical point of view there was a large number of injuries to the lower extremities (many of them compound fractures), some head cases, and a special feature was the unusual amount of shock present.

*Dispensary Medical Officers and their Holidays.*

So far the Local Government Board has made no order for the guidance of the dispensary committees on this much-discussed question and as a result the medical officers are being treated very badly. Here is the latest example. At the Downpatrick Board of Guardians Mr. D. S. Browne, dispensary medical officer of Portaferry, applied for three weeks' leave of absence, nominating Mr. V. P. Tighe of Dublin as his substitute. The guardians, however, agreed to allow him only a fortnight, congratulating themselves on their power to determine the duration of the medical officer's holiday pursuant to the late judgment in the Court of Queen's Bench. It is a great pity, after the statement of the Chief Secretary of Ireland in the House of Commons, that the Local Government Board delays so long in settling the matter. It is certainly not a sign of strength on their part.

*The Annual Reports of the Resident Medical Superintendents of the Cork and Kerry District Lunatic Asylums.*

From the above reports it appears that the number of inmates in the Cork Asylum has increased by 36 and in the Killarney Institution by 22. In the Cork Asylum there are 1496 inmates, which is 239 over the standard limit; while in the Killarney Asylum there is still a small margin of accommodation available as the number of patients was 526 and the number for which there is accommodation is 683. In his report Dr. Woods, the resident medical superintendent of the Cork Asylum, makes the following instructive observations on the causes of insanity: "A further explanation for the steady increase in numbers must, I think, be set down to heredity. In many of my annual reports for the past 25 years I have laid stress on this fact, but some things cannot be said too often, and as the composition of asylum boards has within the last year so materially changed I think no harm can be done by again referring to the matter. Emigration tends to remove the fittest, those best able to withstand the battle of life, from our midst, leaving at home the delicate, the neurotic, and many liable to transmit to posterity the seeds of disease; the result is that at least 35 per cent. of cases of insanity in this country are directly traceable to heredity."

July 24th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Sanitary Instructions for Troops going to China.*

LAST week I mentioned the circular issued by the Minister of Marine giving instructions as regards principles of hygiene to the troops under orders for China. The circular points out that the chief points noticeable from a hygienic point of view in that portion of Northern China which lies between Tien-Tsin and Peking are the great extremes of heat and cold and the abominable quality of the water. Drinking-water in China, says the circular, is of very bad quality and the Chinese hardly ever drink it pure but substitute tea. In ships of the French navy serving in Chinese waters distilled water has been for many years exclusively used and thanks to this custom the health of the companies of French ships has been maintained in good condition under the most adverse circumstances. For an expeditionary corps operating in these parts the question of how to obtain a pure supply of drinking-water is very serious. Troops on the march cannot be supplied either with distilled water or with that sterilised in a special apparatus, for this latter is only available in hospitals and other permanent establishments. The most that can be done is to boil the water and even this measure in the circumstances under which an expeditionary force works is difficult to carry out. However, the ordinary drink of the Chinese is tea and therefore it is necessary to keep ones eyes open for this drink which is the common drink of the country and which has the additional advantage of being cheap and sustaining. On the march use should be made of the pocket filters made upon the Lapeyière system with potassium permanganate. These filters have the advantage of destroying large numbers of noxious germs from water, and several of these appliances have been given out to the troops. Wells, which in China are always contaminated, can be cheaply and easily disinfected by the permanganates either of potassium or of calcium. From five to 10 grammes of permanganate of potassium are enough for a litre of water. Coincidently with the permanganate the use of a mixture of one part of powdered charcoal to three parts of fine sand is recommended. Soldiers should by all means avoid the use of alcohol which is so widespread in China. In the north of China they distil a spirit from *sorghum* (cane) which is of deeper colour in proportion to its inferiority. It is sold at from 60 to 100 sapeks per litre, that is to say, at from 30 to 50 centimes. Spirits are also distilled from sundry kinds of grain which are most impure and dangerous to health. Butcher's meat can be obtained in plenty, as well as poultry, game, fresh vegetables, and fruit of excellent quality. As a general rule the use of pork should be eschewed, the pig being frequently affected with cysticercus and trichinosis. Fresh-water fish is always bad and tastes of mud; as do the fresh-water shrimps and crayfish owing to the dirty condition of the watercourses, and all these had better be avoided. During the hot season malaria is very prevalent in the Pei-Ho basin and the precautions laid down for troops operating in malarious countries must be strictly observed. For any special means to be adopted the commanding officer must confer with the principal medical officer. Heat-stroke and sun-stroke are common in July and August and congestions of the liver are frequent during the summer. After malaria, however, the dominating pathological factor of the summer in China is diarrhœa. Every case of diarrhœa, however slight, should be treated at once, for epidemics of cholera are frequent in China, and any diarrhœa may be a starting point for an attack of cholera if cholera vibrios happen to be present in the intestine. During the winter respiratory affections are common, in

addition to rheumatism, diphtheria, and typhus fever of a petechial type. Small-pox is practically endemic, vaccination being almost unknown outside centres having a resident European population. Revaccination should therefore be carried out throughout the expeditionary corps. For the hot season troops should be supplied with cholera belts, mackintosh sheets, and mosquito curtains. For the bitter winter of Northern China troops should be supplied with additional warm clothing and the commanding officer should be instructed to allow both officers and men to wear furs, which can be obtained in the country at a cheap rate.

*Medicine and the Theatre.*

Among the numerous congresses which are at present being held in Paris and of which many deal with questions never before discussed, as is only fitting at the dawn of a new century, is one which, although at first sight it would appear to be far removed from having any medical interest has yet put down on its programme a series of questions of the deepest interest to medical men. I allude to the Congress on Theatrical Art which will sit from July 27th to 31st. Here will be discussed the following questions which are most interesting from a hygienic point of view: the mode of nominations and status of the medical men attached to subsidised theatres; the best method of organising the medical department and its relations with the Prefect of Police; the statistics of accidents occurring in the course of representations or rehearsals; the inspection and upkeep of emergency chests (*boites de secours*); medical aid to the staff at their homes; reports and opinions; the unhealthiness of rooms, the stage, and the dressing-rooms; warming and ventilation; the representation and the powers of medical men on the governing body of theatres; consideration of the arrangements which could be carried out in the building of the next popular theatre. A report will be laid before the Congress and a committee appointed which will sit until some practical conclusion has been arrived at. M. Lefeuve is in charge of the report and those interested in the matter are requested to communicate with him. Another congress dealing more especially with music will consider the hygiene of singers and instrumentalists. This congress will begin in November and will be assisted by the advice of the most experienced artists and professors.

July 24th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*An Alleged Hospital Scandal.*

A CONSIDERABLE sensation was caused not long ago by an article published in the *Medicinische Reform* drawing attention to a paper in the *Archiv für Klinische Medicin* wherein Dr. Strubell, an assistant in the Jena Medical Clinic, had described certain methods used by him in the treatment of a case of diabetes insipidus. Dr. Strubell endeavoured to combat the disease by limiting the daily quantity of drinking water to a very small amount, the effect being that the patient suffered very much from thirst and procured water and other beverages secretly. Dr. Strubell accordingly locked the man in a room with barred windows and kept the key himself. The sufferings of the patient were described in an unfeeling manner by Dr. Strubell who mentioned that the man was found to have drunk from a waste pipe near the window; he was so tormented by thirst that he drank dirty water out of the washing-tub and even his own urine. Symptoms of cardiac failure appeared during the treatment, and eventually the patient had to be discharged. In the above-mentioned article printed in the *Medicinische Reform* Dr. Strubell's proceedings were very severely blamed, especially because the tenor of his communication might induce readers to believe that the patient was subjected to this treatment not for curative but for experimental purposes. The editor of the *Medicinische Reform* stated that the medical press and the medical profession disapproved of such methods, and he hoped that the medical profession might be able to come to an authoritative decision on the matter without the intervention of non-medical journals. Unfortunately, the expectations of the *Medicinische Reform* were not realised, Dr. Strubell's article being at a later date severely blamed by several non-medical journals of different political views. For several weeks the columns of the newspapers were filled with articles and letters on this question, Professor Neisser's alleged misdemeanours being compared with the above case, and of course unqualified practitioners, homœopaths, and others joined in the general chorus of blame which was raised against the whole medical profession. The chief physician of the Jena Medical Clinic, Professor Stintzing, then declared himself responsible for everything that had happened in this clinic. He said that notwithstanding the malicious suggestions of certain periodicals the facts were that the treatment had been tried for curative purposes, that the patient had been informed of some inconveniences he might experience, that he nevertheless consented to be treated in this way, that he was at liberty to leave the hospital whenever he chose but that he remained there for two months and afterwards returned of his own accord, that the events described by Dr. Strubell happened three years ago, and that the patient (who died in 1899) had up to the time of his death always been grateful to the physicians of the clinic. Professor Stintzing admitted that Dr. Strubell's descriptions might lead his readers to form erroneous opinions, but the charges of inhumanity towards the patients made against the physicians of that clinic were quite unfounded. The respectable periodicals acknowledge the importance of Professor Stintzing's letters, but it is to be feared that Dr. Strubell's case will continue to be the object of severe criticism in some newspapers and at public meetings of that section of the public who are only too glad to have an opportunity of extolling the so-called "popular medicine," homœopathy, and other unorthodox systems.

*The Expeditionary Force for China.*

Great efforts are being made in order that the troops ordered to China may be provided with a sufficient staff of surgeons and nurses and with an adequate supply of medical stores. Apart from the official organisations afforded by the medical departments of the Army and Navy the German Red Cross Association hastened to join the military authorities in working for the benefit of the wounded soldiers. Trained male attendants and nurses will be sent to the scene of war in China with everything necessary to establish Red Cross hospitals. The direction of the hospitals will be confided to Dr. Küttner of the Tübingen Surgical Clinic, who certainly has become one of the most experienced military surgeons in Europe. Dr. Küttner, who has just returned from Africa, will start at once for China and this will be the third war in which he has served, the previous ones being: (1) that between Turkey and Greece in which he was attached to the great military hospital at Constantinople; and (2) the Transvaal war where he was at the head of the German ambulance with the Boers at Jacobsdaal. A great many surgeons and nurses have applied to the Committee of the Red Cross Association seeking to be enrolled on its staff.

*The German Practitioners' Association.*

The annual meeting of the German Practitioners' Association (Deutscher Aerztetag) took place on June 22nd and 23rd at Freiburg in Baden, the late president, Dr. Aub of Munich, being replaced in the chair by the vice-president, Professor Löbker of Bochum. The association at present has 291 branches and 16,583 members, and of these 183 branches, including 14,790 members, were represented. The first subject of discussion consisted of questions relative to death certification, and the association adopted a motion of Dr. Becher of Berlin that every case of death ought to be certified by a qualified medical practitioner. The second subject of discussion was the relation of the first-aid and ambulance association to the medical profession. The Practitioners' Association recommended that the first-aid service should be in connexion with the hospitals and that the control should be vested exclusively in medical men. This part of the business was followed by an animated discussion on the conditions under which German medical men carry on practice abroad. Dr. Joachim of Berlin recommended that the association should establish an office for the purpose of giving information to German practitioners intending to go abroad. The assistance of the consular department in this matter had already been asked for by the Berlin branches of the association. One of the Hamburg delegates was of opinion that the office ought to be in that city and that it ought to have control over the appointment of medical officers to merchant vessels both steamers and sailing ships. The association agreed with this proposal. Other subjects of discussion related to fees in club practice, to insurance

companies, to unqualified practitioners, &c. Dr. Löbker of Bochum was elected president.

*Hints to Contributors to the Medical Press.*

Professor Virchow, the editor of the *Archiv für Pathologische Anatomie*, has addressed some words of counsel to the contributors to that periodical and to medical authors generally, explaining several points which it is desirable that writers for the medical press should always keep in mind. It would be difficult to find a higher authority on this subject than Professor Virchow, the patriarch of the savants and editors of Germany. His remarks are not intended for authors of books, who are at liberty to write as they like; they have been published exclusively for he benefit of contributors to medical weekly, monthly, or quarterly journals. He says that it is one of the elementary principles of journalism that the successive numbers of a journal must be issued at a certain time and in a certain size. Contributors must therefore endeavour to write concisely, taking up as little space as possible and avoiding all superfluous matter. Descriptions of cases, experiments, and necropsies when sent to editors for publication are often so voluminous that it is impossible to use them without serious inconvenience. The publications of series of cases, &c., in the form of tables is a great annoyance both for the editor, the printer, and the readers. Controversies as to priority are often offensive in style and lacking in the courtesy due to professional brethren. Finally, contributors ought to abandon the custom of quoting long passages from other authors with the object only of showing their knowledge of medical literature.

July 23rd.

## SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

*Sanatorium for Consumptives.*

THE first yearly report for 1899 of the Canton of Zürich's Sanatorium for Consumptives offers several points of interest. This sanatorium is situated at Wald at an altitude of 907 metres. The heliograph marked in the four winter months 465 hours of sunshine (Davos 445, Zürich 332). There are 88 beds, of which an average of 72 were continually occupied. 319 patients were admitted and remained an average of 104 days, 36·4 per cent. belonging to the first stage (Dr. Turban's scale), 26·3 to the second stage, and 37·3 to the third stage. Out of 76 patients in the first stage 48 were cured and 22 were eminently better. Of those in the second stage (55) none were cured and 35 were eminently better. Of those in the third stage (78) only 13 were eminently improved. These statistics go far to prove that only cases in the first and also the beginning of the second stage promise good results.

*Dr. Tez's Typhoid Extract.*

This has been tried at the University Hospital, Zürich, in eight cases, which were all chosen among the worst cases in the first or second week of the disease. After injections they rapidly improved and were free from fever within four days. In one other very severe case which had lasted three weeks and where the temperatures ran up to from 103° to 105° F. continuously the injections of this serum were also crowned with success in seven days, an ensuing relapse being also treated successfully. Professor Eichhorst can thus recommend a trial in all cases severe from the onset or even later. No deleterious effects were observed.

*Tuberculin Injections for Diagnostic Purposes.*

Though not an advocate of tuberculin injections for therapeutic purposes Professor Eichhorst of Zürich strongly recommends them to secure diagnosis in doubtful cases with pulmonary and other symptoms. The injection of one milligramme of Koch's old tuberculin must be followed by a feverish reaction to secure a positive diagnosis of tuberculosis. Should no reaction follow, three and eventually five milligrammes can be injected at intervals of from two to three days. A case of morbus Addisonii and a case of pseudo-leukæmia were thus diagnosed as based on tuberculosis.

Zürich, July 21st.

## RUSSIA.

(FROM A CORRESPONDENT.)

*The Outbreaks of Plague in the Kirghiz Steppe.*

IN February last I communicated to your columns[1] a short account of an epidemic of plague which had occurred in two Kirghiz settlements in southern Russia. No further details in regard to this isolated outbreak have, I believe, as yet been published. A full account of the epidemic from the pen of an eye-witness is therefore particularly welcome. Such an account is furnished by Dr. Arustamof in the pages of the *Vratch* (1900, No. 15). The article is too long to quote in full, but the following is a short summary of the principal facts which it contains. The scene of the outbreak was the Caspian Sea portion of the Kirghiz steppe in the eastern part of the government of Astrakhan. This steppe extends from about 45° to 50° N. latitude, and from about 47° to 51° east longitude (from Greenwich). It is about 300 versts long and 400 versts broad, and contains approximately 300,000 inhabitants. The greater parts of the steppe is composed of sand, forming irregular mounds and almost devoid of vegetation. To the south the sand gives place to yellow sunken deposits of salt, entirely devoid of vegetation. The Kirghiz inhabitants live a nomad life, in summer in tents, in winter in *zemlianki* or earth huts. On the shore of the Caspian Sea and on the islands near it the population is somewhat denser. It was on one of these islands that plague first made its appearance in October last. On the 25th or 26th of that month the daughter of a *moullah* living on the island of Irsalou-Aral, belonging to the Kirghiz horde, fell ill with symptoms resembling those of plague How she contracted the disease is unknown. The Kirghiz are fanatical Mussulmans and often visit Mecca (where plague, it will be remembered, was present last year), but it seems that they are very loth to give any information to a non-believer as to whether they have or have not been to the Holy Places. Irsalou-Aral (*aral* means a mound) is a small island on the Caspian and it contained at the time of the outbreak a population of 52 persons. On October 25th or 26th, as just stated, the *moullah's* daughter fell ill and she died five days later; on the 26th his son, aged 15 years, fell ill in the steppes, 12 versts away, and died on Nov. 3rd. Other cases followed, and on Nov. 26th the *moullah* himself fell ill but recovered. In all, 25 persons out of the total population of 52 were attacked by the disease and as many as 22 died. In the meantime the infection spread from this island to those of Kishkine-Aral and Kine-Aral, the two islands which were alone mentioned in the accounts of the outbreak first published. They are separated from each other by a strip of water under 100 yards in width, and they lie some 35 versts (or 24 miles) away from Irsalou-Aral. The first case in Kine-Aral, which occurred on Nov. 13th, was that of a woman, the sister of two patients who had died in Irsalou-Aral. It is not definitely stated that the woman had visited her relatives there, but it is to be supposed that some communication between them had taken place. On the same day the woman's son, a boy, aged five years, was attacked, and both died two days later. The disease appeared about the same time in Kishkine-Aral, and in the two islands as many as 39 deaths occurred out of a total population of only 65. Whole families were swept away and the unfortunate survivors became panic-stricken. They were unable, however, either to fly or to get help from the mainland. Just as the outbreak was at its worst a severe storm broke over the northern end of the Caspian Sea; the ice which was beginning to form was broken up, and it was impossible to cross to the mainland either by boat or on foot across the ice. It appears probable that, while this condemned the affected islanders to suffer and die without help, it also prevented the disease from spreading to other islands or to the mainland. It was not until Nov. 28th that news of the outbreak reached the ears of the sole *feldscher* in the neighbourhood—the *feldscher* attached to certain fishing industries—who reported it to the authorities. A medical man reached the scene of the epidemic on Dec. 4th and measures were at once put into action to deal with the outbreak. Later others visited the island and on Dec. 11th the author of the article from which this account of the epidemic is taken himself attempted to cross to the island of Irsalou-Aral.

[1] THE LANCET, Feb. 3rd, 1900, p. 350.

He failed, however, on his first attempt; the ice was as yet too weak to drive over, and on trying to do so the horse and cart fell through into the water, immersing him, with his baggage and supply of drugs which he was taking with him. A second attempt at another part of the ice was equally unsuccessful. On the following day a third attempt was made, but only with the same results—a fresh wetting for himself and all his supplies. On the third day, however, he succeeded in getting across in a boat. At that time 21 out of the small population of the island were already dead and one was still ill. The first 13 bodies had been buried, but eight others remained unburied, the survivors dreading to touch them.

In each of the islands the surviving healthy persons were given a bath in a disinfectant, were clothed in entirely new clothes, and were removed to houses or tents where no case of the disease had yet occurred. The infected huts or tents with their contents and with the unburied bodies of those who had died were burned down. A cordon of mounted Kirghiz was drawn round the infected settlements. These measures seem to have succeeded, or at least to have aided in checking the course of the epidemic. The outbreaks, in fact, practically ceased in all the islands from the time that these measures were put into force. The other conditions were practically favourable at the time for the extinction of an epidemic. The extreme isolation of the communities affected, the smallness of their numbers, and the onset of extremely cold weather were all, no doubt, conducive to the cessation of the further spread of a disease such as plague. But there can be little doubt that the measures above briefly enumerated were mainly instrumental in stopping the ravages of the disease. On Dec. 16th the outbreaks were completely over. The survivors were housed in uninfected huts. All inside the contaminated zone, including medical men, feldschers, police officials, and others, were provided with new clothes, and their old ones were burnt or disinfected. A number of surrounding villages, over a large area, and containing a population of over 10,000 persons, were examined for traces of any suspicious disease, and later the islands were visited by Professor Levin, Professor Raptchevski, and Professor Vinogradof on behalf of the Russian Plague Commission, from whom a report should be forthcoming shortly. Although no bacteriological evidence of the nature of the disease in these outbreaks has as yet been published there seems no reason to doubt that it was the plague. The symptoms were principally those of fever, headache, vomiting, extreme prostration, spitting of blood, and death in two or three days. None of the patients seem to have presented buboes, and it is reasonable to suppose that the outbreak was one of plague in its pneumonic form. In this respect, as well as in regard to its local intensity and fatality, the outbreaks are closely analogous to that which occurred at Kolobovka on the Lower Volga in the summer of 1899. In that, as in the outbreaks now under consideration, no trace of the source of the infection could be discovered.

July 23rd.

## CANADA.

(FROM OUR OWN CORRESPONDENT.)

### *A Bureau of Public Health for the Dominion.*

DR. RODDICK, M.P., is taking an active interest in the direction of having established a central board of health for the entire Dominion. Speaking on the subject recently in the Canadian House of Commons he pointed out the importance of concentrating all subjects relating to sanitary affairs, marine quarantine, the sanitation of Indian reserves, leper asylums, vital statistics, the sanitary portion of the census, the protection of waterways, sanitary measures in unorganised territories, the protection of public health against the invasion of tuberculosis, and the importation of unhealthy articles of food and freight, such as rags. The question of sanitary police he thought a particularly important one at the present time. The Dominion authorities should have such men now on the shores of British Columbia to guard against the introduction of that loathsome disease, the bubonic plague. Besides, they had need of a bacteriological laboratory, for at present they had to depend upon the United States, England, and even sometimes upon Japan. He thought they should have in their own country a laboratory under the charge of a capable man, in which should be carried on the manufacture of prophylactic serums of various kinds. Recently he had attended a medical convention in the United States where a professional gentleman had read a paper on leprosy who stated that it was his purpose to proceed to Ottawa to make a study of the subject in the laboratory there. Dr. Roddick had to inform him that such an institution did not exist. Canada was a long way behind in this respect and he thought the Government might well look carefully into the matter during recess, which the Minister of Agriculture promised to do, so that very likely there will be a report to deal with at the next assembling of the House. The Government also should have medical men in the great ports of Europe and the Orient who should carefully examine intending emigrants and see that the ships are properly equipped for the sanitary care of those on board. The formation of a Dominion Medical Council, Dr. Roddick believes, will go much toward securing the creation of a department of public health in the Government of the country.

### *The Extent of Leprosy in Canada.*

The Hon. the Minister of Agriculture in the Dominion Parliament, in answer to questions regarding the extent of leprosy in the Dominion, stated recently in the House of Commons that there were 19 lepers in the lazaretto at Tracadie, New Brunswick, 14 being from that province, one from Prince Edward Island, three from Manitoba (the disease having been contracted by these in Iceland), and one from the province of Nova Scotia. One of the Manitoba cases had died in January, 1897, and another in July of the same year. The Minister also stated that he had been informed early in the autumn of 1897 that there were six lepers in the lazaretto on Darcy Island, British Columbia, all of whom were Chinese. Since that year these have not been under the control of the Dominion Government but are in the immediate hands of the Government of the province of British Columbia.

### *Tinea Favosa Quarantine.*

In view of the fact that the quarantine officers of New York and other ocean ports along the Atlantic seaboard are excluding from landing immigrants the subjects of this disease it becomes of some importance to the people of Canada, more particularly those down by the sea in the maritime provinces of Nova Scotia and New Brunswick. Last spring it was stated that several of the rejected ones had found shelter in these provinces and on Cape Breton Island, but although a diligent and persistent search was prosecuted they could not be located. This disease is not as yet considered by the immigration authorities of Canada as a sufficient cause for exclusion or even quarantine; but the recent action of the United States Government, combined with the fact of the continual growth of St. John, N.B., as a port of entry for transatlantic passengers, makes favus one of interest to the profession as well as to the general public in that locality, which is bound to result in similar efforts being put forth to exclude the introduction of these diseased hordes into Canada. The disease seems to be very prevalent in New York and it is from this source when rejected and excluded that New Brunswick and Nova Scotia fear its introduction. Here and there a few isolated cases have been reported in Canada, one particularly interesting case having occurred in the Montreal General Hospital in which nearly the whole cutaneous system was involved.

### *The Ontario Medical Association.*

The twentieth annual meeting of this association was held in Toronto on June 6th and 7th, under the presidency of Dr. Adam H. Wright of this city, Dr. Harold C. Parsons acting as secretary.—The first discussion was an interesting one upon the Use of Morphia in Puerperal Eclampsia, some adhering to and endorsing this method whilst others had found the bromide-chloral treatment superior and more effective.—Dr. Luke Teskey, Professor of Clinical Surgery in Trinity Medical College, read a valuable paper on Appendicitis. He classified this disease into three forms: catarrhal appendicitis, acute circumscribed appendicitis, and gangrenous appendicitis. He laid particular stress upon the chronic symptoms of indigestion and the progressive loss of body-weight in the first class of cases; he counselled operation in all these cases and thought that the recoveries ought to be 100 per cent. In the second class an important diagnostic point was the feeling of resistance which one always finds in local inflammatory processes; when that resistance was first felt that was the time for operation. In the third class an early operation

was the only hope for the patient.—Inter-provincial Medical Registration was a live topic for discussion. Dr. Roddick was present and addressed the meeting at some length on this subject. In his hands is intrusted the Bill to bring this question into practical effect. The meeting unanimously approved of the formation of a Dominion Medical Council.—Two Cases of the Total Removal of the Vas Deferens and Vesiculæ Seminales were reported, one by Dr. George A. Peters of the University of Toronto and the other by Dr. J. Alexander Hutchinson of the University of McGill.—Dr. Peters further gave a very interesting report of a case of Transplantation of the Ureters in the Rectum by Extra-peritoneal Method, for which he claims priority and originality. The little patient is now six years of age and can hold his urine in the rectum at night for eight hours and in the daytime for three hours. The boy had also been the subject of a procidentia recti which had been corrected.—The Adaptation of Patient to Climate in Cases of Phthisis was the subject of an interesting address by Dr. N. A. Powell of Toronto, who pointed out the advantages of the Muskoka region and the North West and Rocky Mountain regions for the subjects of this trouble.—Professor William Oldright of Toronto University showed an interesting case of Necrosis of the Skull in an old syphilitic, aged 56 years. It measured five inches either way in extent.—Numerous cases of Cancer of the Rectum were reported by Dr. E. E. King of Toronto, the illustrations by lantern slides adding greatly to the effect of the reports.—Observations upon Blood-pressure in Dogs were shown by means of lantern slides by Dr. R. D. Rudolf of Toronto.—Dr. H. B. Anderson, Professor of Pathology in Trinity Medical College, read a paper on Acute Rheumatism and reported finding Achlame's bacillus in one case, the patient having died one week after being attacked. He thought the work of this investigator had not met with sufficient approval in England and America.—The subject of the Army Medical Arrangements for the War in South Africa was ably handled by Dr. J. T. Fotheringham and proved a very interesting feature of the meeting.—Dr. Angus Mackinnon, Guelph, Ontario, was elected President, and Dr. Parsons was re-elected secretary.

Toronto, July 7th.

# Medical News.

**UNIVERSITY OF LONDON.**—At the intermediate examination in Medicine held in July the following candidates passed in the subjects indicated:—

EXAMINATION FOR HONOURS.

*Anatomy.*—First-class: Joseph Ebenezer Adams, St. Thomas's Hospital; M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; Charles Wesley Forsyth, Owens College; Harold Ashton Lyth (exhibition and gold medal), University College; Robert Pugh Rowlands (gold medal), Guy's Hospital; and Arthur Rendle Short, B.Sc., University College, Bristol. Third-class: Arthur Hamilton, St. Bartholomew's Hospital; Constance Brodribb Slater, London School of Medicine and Royal Free Hospital; and John Harry Watson, University College, Liverpool, and King's College.

*Physiology and Histology.*—First-class: Percy Reginald Bolus (gold medal) and Edwin Henry Britton Milsom, Guy's Hospital; and Arthur Rendle Short, B.Sc. (exhibition and gold medal), University College, Bristol. Second-class: Helen Chambers, London School of Medicine and Royal Free Hospital; Herbert Ernest Corbin, B.Sc., and M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; Ellis Gordon Goldie, Guy's Hospital; Harold Ashton Lyth, University College; and Constance Brodribb Slater, London School of Medicine and Royal Free Hospital. Third-class: D. Henriques De Souza, B.Sc., University College; Henry Ratcliff Kidner, St. Bartholomew's Hospital; Charles Ernest W. Lyth, University College, Sheffield; and Neville Ivens Spriggs, Guy's Hospital.

*Organic Chemistry.*—First-class: Herbert Ernest Corbin, B.Sc., (exhibition and gold medal), St. Mary's Hospital; and *Millais Culpin, London Hospital.† Third-class: Percy Reginald Bolus and Edwin Henry Britton Milsom, Guy's Hospital.

*Materia Medica and Pharmaceutical Chemistry.*—First-class: Robert Pugh Rowland, Guy's Hospital; Arthur Rendle Short, B.Sc. (exhibition and gold medal), University College, Bristol; and †Constance Brodribb Slater, London School of Medicine and Royal Free Hospital. Second-class: Thomas Paul Baldwin, St. Bartholomew's Hospital; Henry Swarbrick Brown, Guy's Hospital; M. A. M. Fitzmaurice-Kelly, St. Mary's Hospital; and Christian Cathcart Robinson, St. Bartholomew's Hospital. Third-class: Stanley Bean Atkinson, B.Sc., St. Bartholomew's Hospital; Herbert Ernest Corbin, St. Mary's Hospital; and David Henriques De Souza, University College.

* Obtained number of marks qualifying for the exhibition.
† Obtained number of marks qualifying for the medal.

PASS LIST.

*Entire Examination.*

*First Division.*—John Braithwaite, Guy's Hospital; William Alfred Brend, B.Sc., King's College; George Herbert Brown, Owens College; Harold Benjamin Day and John Alexander Drake, King's College; Harold Cruickshank Lees, St. Mary's Hospital; Agnes Agatha Parson, London School of Medicine for Women; Rees Phillips, Middlesex Hospital; and David Lindley Sewell, Owens College.

*Second Division.*—Joseph Baird Albury, St. Mary's Hospital; Frederick Hugh Alexander, University College; Oliver Francis Haynes Atkey, King's College; George Ernest Aubrey, St. Bartholomew's Hospital; Anne Thompson Barnard, London School of Medicine and Birkbeck Institution; Mary Cecilia Bell and Ruth Levy Bensusan, London School of Medicine for Women; George Archibald Bosson, University College; William Frederick Box, Guy's Hospital; Sidney Arthur Boyd, Charing-cross Hospital; Walter Briggs, Owens College; Agnes Maud Brown, Queen Margaret College, Glasgow, and London School of Medicine; Gerald Lantsbery Bunting, Westminster Hospital and Birkbeck Institution; Joseph Burfield, St. Bartholomew's Hospital; John Hay Burgess, St. Mary's Hospital; Harold John De Brent, St. Thomas's Hospital; Henry De Vine, University College, Bristol; John Thomas D'Ewart, Owens College; Albert Davies Edwards, University College, Cardiff; Francis William Fawssett, Guy's Hospital; Arthur Frost Forster, St. Bartholomew's Hospital; John Gay French, St. Mary's Hospital; William Gillitt, Middlesex Hospital; Llewellyn Stanley H. Glanville and Philip William Hamond, Guy's Hospital; Thomas Henry Harker, St. Bartholomew's Hospital; Elizabeth Hill, London School of Medicine for Women; Ethel Florence Iredell, B.A., London School of Medicine and Royal Free Hospital; Smeeton Johnson, St. Mary's Hospital; Ivor Davenport Jones, Middlesex Hospital; William Ronald Kirkness, King's College; Reginald Larkin, Guy's Hospital; Alfred Lewthwaite and George Bartley McKean, University College; Lionel Henry Moiser, Guy's Hospital; Gilbert Phillips Mosscrop, London Hospital and Alwyne Institution; Arthur Cyril Motta, St. Mary's Hospital; Frederick Cecil Robinson, Guy's Hospital; Dansey Smith, Middlesex Hospital; Mary Townsend, London School of Medicine for Women; Laura Sobey Veale and Edith Waine Turner Watts, London School of Medicine and Royal Free Hospital; Bernard Harry Wedd, Guy's Hospital; Eugene Christopher Whitehead, Westminster Hospital; and Hilda Kate Whittingham and Ivy Evelyn Woodward, London School of Medicine for Women.

*Excluding Physiology.*

*First Division.*—George Cuthbert Adeney, St. Thomas's Hospital; and Charles Derwent Pye-Smith and Ernest William Strange, Guy's Hospital.

*Second Division.*—Ernest William Charles Bradfield, St. Mary's Hospital; Desborough Brodie, St. George's Hospital; George Brooke Forbes Churchill, Guy's Hospital; Ruby Ellen Glanville, London School of Medicine for Women; Herbert Myer Goldstein, Guy's Hospital; Ida Margaret Guillaume, London School of Medicine for Women; Vernon Hetherington, St. George's Hospital; Beatrice Mary Kidd, London School of Medicine and Alwyne Institution; Alexander Manuel, St. George's Hospital; Wilfrid Ombler Meek, Owens College; Henry Richmond Minkley, St. Mary's Hospital; John Noel Sergeant, St. Thomas's Hospital; Herbert Bartlett Simpson and Malcolm William Stewart Smith, University College; James Batson Stephens, St. Mary's Hospital; R. Archibald Slater Sunderland, St. Bartholomew's Hospital; Louisa Graham Thacker and Henrietta Leila D. Williams, London School of Medicine for Women; Agnes Williamson, London School of Medicine and Royal Free Hospital; Frederick Robert Elliston Wright, St. Thomas's Hospital; and Walter Perceval Yetts, St. Bartholomew's Hospital and University of Edinburgh.

*Physiology only.*

*Second Division.*—Henry Edgar Barnes, St. Mary's Hospital; Frederick Alexander Beattie, Guy's Hospital; Alwyn Hewett Bradley, Mason University College; John Dell Bridger, Guy's Hospital and Alwyne Institution; Alexander Cameron, Middlesex Hospital; Daniel Cyril Evans, St. Bartholomew's Hospital; John Evans, Guy's Hospital; John William Fox, London Hospital; David Sydney Graves, Guy's Hospital; Helen Moore, London School of Medicine and King's College; Marie Louise Pethick, London School of Medicine and Royal Free Hospital; George Struan Robertson, Guy's Hospital; and Arthur Reginald Schofield and William Bartholomew Vaile, London Hospital.

N.B.—The foregoing lists, published for the convenience of candidates, are provisional only, and are not final until the reports of the examiners shall have been confirmed by the Senate.

**SOCIETY OF APOTHECARIES OF LONDON.**—In July the following candidates passed in the subjects indicated:—

*Surgery.*—H. C. Cooper, St. George's Hospital; H. S. Davies (Section II.), Michigan; C. J. E. Edmunds (Section I.), St. Thomas's Hospital; E. Evans (Sections I. and II.), Royal Free Hospital; J. S. Goodall (Sections I. and II.), Middlesex Hospital; T. B. Haig (Section II.), St. Bartholomew's Hospital; S. K. K. Haslam (Section I.), Royal Free Hospital; H. N. Horton (Section I.), Middlesex Hospital; J. Klein (Sections I. and II.), St. Mary's Hospital; R. Lamort, Bordeaux; R. A. Lyster, Birmingham; C. J. Marsh, University College Hospital; W. T. Meagher, Cork; R. E. Roberts (Sections I. and II.), St. Thomas's Hospital; F. Robinson (Sections I. and II.), Royal Free Hospital; E. F. Rose (Sections I. and II.), St. Bartholomew's Hospital; W. C. Stanham, London Hospital; M. H. Style (Sections I. and II.), Royal Free Hospital; C. H. St. M. W. Toke, St. George's Hospital; and E. Tyson, St. Bartholomew's Hospital.

*Medicine.*—P. J. R. Bucknill (Section I.), Manchester; F. P. Bush and C. W. Gibson, Guy's Hospital; J. S. Goodall (Section II.), Middlesex Hospital; T. B. Haig (Sections I. and II.), St. Bartholomew's Hospital; S. K. K. Haslam (Section I.) and D. E. Lockwood (Section I.), Royal Free Hospital; R. E. Roberts (Sections I. and II.), St. Thomas's Hospital; F. Robinson (Sections I. and II.), Royal Free Hospital; J. Waters (Sections I. and II.), Middlesex Hospital; A. J. Watson (Section I.), St. Mary's Hospital; and H. F. Willington, Manchester.

*Forensic Medicine.*—F. P. Bush and C. W. Gibson, Guy's Hospital; T. B. Haig, St. Bartholomew's Hospital; R. E. Roberts, St. Thomas's Hospital; F. Robinson, Royal Free Hospital; J. Waters, Middlesex Hospital; and A. J. Watson, St. Mary's Hospital.

*Midwifery.*—C. H. G. Atkyns, Birmingham; R. V. Cowley, Edinburgh and St. Mary's Hospital; A. McC. Dallas, Guy's Hospital; and H. F. Willington, Manchester.

The diploma of the Society was granted to the following candidates entitling them to practise Medicine, Surgery, and Midwifery:—F. P. Bush, H. C. Cooper, A. McC. Dallas, H. S. A. Davies, E. Evans, J. S. Goodall, T. B. Haig, J. Klein, R. A. Lyster, W. T. Meagher, W. C. Stanham, M. H. Style, C. H. St. M. W. Toke, and E. Tyson.

UNIVERSITY OF ABERDEEN.—The following degrees and diploma have been conferred:—

*Degree of Doctor of Medicine (M.D.).*—Charles George Cowie, M.A., M.B., C.M., Ellon; William Stewart Geddie, M.B., C.M., Gympie, Queensland, Australia; Alexander Barclay Lyon, M.B., C.M., Hammersmith, London, W.; and Alex. Hendry Mackie,* M.A., M.B., C.M., Aberdeen.

*Degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.) (Old Ordinances).*—Alfred Alwyne Hingston, B.A., Clifton, Yorks.

*Degrees of Bachelor of Medicine (M.B.) and Bachelor of Surgery (Ch.B.) (New Ordinances).*—Alexander Bisset, Aberdeen; William Fraser Bisset, Aberdeen; Allan James Craigen, Georgetown, Demerara; William Flett Croll, M.A., Aberdeen; Arthur Davidson, Dunnydeer, Insch, Aberdeenshire; James Andrew Sandilands Grant, M.A., Methlick, Aberdeenshire; Herbert Johnstone, Upholland, near Wigan; James Macfarlane, Aberdeen; Miss Myra Mackenzie, Aberdeen; Colin Forbes Marr, Ellon, Aberdeenshire; Herbert Playford Sheppard, Bedford; Henry William Martyn Strover, Tonbridge, Kent; Francis Henry Wessels, B.A., Claremont, near Cape Town, South Africa; James Wilson, Gardenstown, Banffshire; and Charles Melville Young, Highgate, London.

The John Murray Medal and Scholarship (awarded to the most distinguished graduate (M.B.) of 1900) and the Alexander Anderson Scholarship were awarded to Henry Fraser, M.B., Ch.B., Aberdeen.

*Degree of Bachelor of Science (B.Sc.).*—Charles Allan, Burnside, Fordyce; Robert Neal Rudmose Brown, Aberdeen; George Gall Esslemont, Ord of Cardno, Fraserburgh; Joseph Knox, Aberdeen (with special distinction in geology and chemistry); Alexander Christie Reid, M.A., Ellon; and John Wishart, Aberdeen.

*Diploma in Public Health.*—David Hunter Ainslie, M.B. Aberd., Mintlaw; Alexander Vass Anderson, M.B. Aberd., Stonehaven; Thomas Fraser,† M.A., M.B. Aberd., Aberdeen; Norman James Sinclair, M.B. Aberd., Aberdeen; and David Sivewright, M.A., M.B. Aberd., Strichen.

* Thesis considered worthy of commendation.
† With "credit."

KING'S COLLEGE, LONDON.—In the Faculty of Medicine the following scholarships and prizes have been awarded:—Sambrooke Exhibitions, Eardley Lancelot Holland, Thomas Henry Jones, and John James; Medical Entrance Scholarship, A. J. Wigmore; Warneford Scholarships, John Alexander Drake and Matthew Robert Cecil MacWatters; Senior Scholarship, Arthur Edmunds; Second Year Scholarship, Harold Benjamin Day; Junior Scholarships, Thomas Henry Jones and Eardley Lancelot Holland; Rabbeth Scholarship, Frederick Champ McCombie; Leathes Prize, Harold Balme and Colin James Galbraith; Warneford First Prize, Harold Balme; Warneford Second Prize, Edward Augustine Bell; Barry (Divinity), Arthur Donald Griffith; Tanner Prize, Edgar Winn Fox Dolman; Todd Prize, Arthur Edmunds; Hygiene Prize, James Duncan Clay; Pathological Anatomy Prize, Alfred Hocart Brehaut; Obstetric Medicine Prize, Archibald Douglas Reid; Forensic Medicine Prize, Archibald Douglas Reid; Medicine Prize, Archibald Douglas Reid; Surgery Prize, Frederick Charles Carle; Professor Rose's Surgery Prize, Hubert Liston Willcox; Anatomy Prize, Albert Angelo Myers; Physiology Prize, Albert Angelo Myers; Chemistry Prize, Albert Angelo Myers; and Materia Medica Prize, Albert Angelo Myers.

ST. GEORGE'S HOSPITAL.—Mr. H. H. Macpherson presided at a quarterly general court of the governors of St. George's Hospital in the board-room on July 13th, when Mr. T. Holmes, the treasurer, moved that the weekly board should be empowered to sell stock to the amount of £4000. He said that unless some large donations or legacies were received this step would be necessary in order to finish the work which was now under contract. If the motion were carried the weekly board would only exercise the power in case of necessity. There was a deficiency on the last year's expenditure, normal and extraordinary, of £15,000, the subscription list and the legacies both having been small.—Sir Henry Burdett, in seconding the motion, said that as a visitor he knew the need for the expenditure of £100,000 which had been incurred on reconstruction works. The present was an age of criticism and a political crisis had almost arisen out of hospital affairs in South Africa. He was not in this country when the criticism appeared or he would have felt himself called upon to point out that without special knowledge of the exact circumstances in South Africa that criticism was too narrow to warrant the amount of public attention which it had received. It was the first essential of criticism of hospital affairs that those who undertook it should have an accurate practical knowledge of the circumstances and matters of which they treated. It had been made a matter of complaint against St. George's Hospital that the expenditure was too great, and it had been suggested that if the present policy were continued and extended to other hospitals the time would soon arrive when the voluntary hospitals must be taken over by the State. That was exactly the opposite of the truth. What St. George's Hospital still suffered from was a margin of deficiency between income and expenditure which existed 10 years ago and which had never been wiped out. A great hospital like St. George's must advance with the age. Its sanitary conditions were now perfect, its means of isolating infectious cases were second to those of no other hospital in London, and the accommodation for the staff was a credit to the metropolis. He pleaded for a special effort on behalf of the institution. The hospital had never had a festival dinner, and he thought that if they were to ask for the assistance of a member of the Royal family who would place himself at their head in bringing to the knowledge of London generally, and especially of the inhabitants of that district, the need which existed for an extra £10,000 a year, they would not only get it, but they would get the £100,000, which they had so wisely expended upon buildings, restored to their reserve fund.

HOSPITAL ENDOWED BED.—The late Mr. Augustus Matthew Goddard bequeathed to St. Thomas's Hospital a legacy of £1000 to endow a bed, to be named the "Matthew and Patience Goddard Bed."

VACCINATION GRANT.—Mr. C. J. Perrott, public vaccinator for the Kingswood division of the Keynsham Union, has been awarded a grant for successful vaccination.

THE CRISIS IN CHINA.—Mr. George F. Stooke, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., stationed at I-chang, in the service of the Foreign Mission of the Church of Scotland, was reported safe on July 19th.

DR. AND MRS. J. PRIOR PURVIS, who were married at St. Pancras Church, Euston-road, on June 24th, 1840, celebrated the sixtieth anniversary of their wedding on June 24th last. A reception was held at Lansdowne-place, Blackheath-hill, when some 150 of the leading residents of the district were present to offer their congratulations. The family circle numbered 35, consisting of children, grandchildren, and a great-grandchild.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, MARYLEBONE-ROAD, N.W.—A meeting of governors and friends of Queen Charlotte's Hospital was held on July 20th at 22, Portman-square, when Viscount Portman (the President) presided. The Duke of Cambridge attended and the following amongst others were also present: Colonel FitzGeorge, Lord Hugh Cecil, the Earl of Hardwicke, Canon Duckworth, Lady Farquhar, Sir Edward Hertslet, Mr. and Mrs. F. W. Hunt, Mrs. Charles Inge, Mrs. Beauchamp, Colonel Gordon Watson, Mr. G. N. Taylor, General Lowry, Mrs. Hodgkinson, Mrs. Warde, Mr. and Mrs. H. A. Harben, Mr. H. J. Royds, Major McMahon, Miss Denison, Mrs. Ernest Waggett, Mr. and Mrs. Robert English, Mr. and Mrs. F. Herbert Davies, Mr. J. Dix Lewis, Mr. F. G. Cavendish Bentinck, Mrs. Fenwick B. Barron, Mrs. Anstey, Canon Barker, Rev. G. F. Forbes, Mrs. W. M. Beaufort, Mrs. Benjamin Taylor, Miss Alice Cox, Mrs. Newby, and the Rev. V. G. Borradaile. A report was presented showing that the enlargement of the hospital, which was commenced in 1897, had been completed, but that there were still some improvements required to the building, which it was estimated would cost about £2000. The Earl of Hardwicke (chairman of the Committee of Management) stated that in addition to the £2000 which were needed to accomplish the renovation of the hospital the increased expenditure for maintenance caused by the enlargement of the hospital and enhanced prices would amount to about £1000 per annum.—The Duke of Cambridge brought forward the following motion—

That this meeting desires to express its warm approval of the success which has attended the efforts made by the committee to provide increased and improved accommodation for the growing number of patients seeking the aid of the charity and cordially endorses the appeal for additional support to enable the committee to carry out the further work necessary for the complete renovation of the hospital—

and referred to the long connexion of his family with the institution. He expressed his pleasure at hearing that the hospital had opened its doors to the wives of soldiers and

sailors and reservists now at the front, 68 of whom had been granted admission as in-patients and 24 had been treated as out-patients.—Lord Hugh Cecil, M.P., seconded the motion. He dwelt on the great work which was done in the training school of the hospital in training medical students, midwives, and monthly nurses, which benefited all classes of the community.

# Parliamentary Intelligence.

## NOTES ON CURRENT TOPICS.

*General Laurie and the Medical Act of 1858.*

IN accordance with his notice General LAURIE introduced into the House of Commons on Friday, July 20th, his Bill for the extension of the provisions of the Medical Act of 1858 so as to entitle to registration the holders of certain colonial diplomas. The measure is backed by General Laurie himself, Mr. Rothschild, Sir Mancherjee Bhownaggree, Colonel Wyndham Murray, Mr. Middlemore, and Sir James Fergusson. Without going into the merits of the question it is safe to say that in the present state of Parliamentary business there is not the slightest chance of the Bill being passed.

*Proposed Labour Licences for School Children.*

The question of children of school age engaging in labour calculated to interfere with their education was discussed last week before the Grand Committee of the House of Commons on Law in connexion with the Elementary Education Bill. Mr. GEOFFREY DRAGE proposed to insert in the Bill a new clause for the establishment of a system of licensing under which the local authority would, on being satisfied on certain points, issue a licence to a child to labour and it would become an offence for an employer to engage an unlicensed child and for a parent or guardian to allow the child to be engaged. Sir JOHN GORST, the Minister in charge of the Bill, did not accept the proposed clause, but he announced that the Education Department are prepared to join with the Home Office in the appointment of a departmental committee to inquire into the whole question and frame legislation for introduction during the next session of Parliament.

## HOUSE OF COMMONS.

THURSDAY, JULY 19TH.

*Invalided from South Africa.*

Mr. MACNEILL asked the Under-Secretary for War how many officers, non-commissioned officers, and men had been invalided from South Africa since the outbreak of the war; of these, how many had died on the passage home or in military hospitals or in their own homes, and how many had been incapacitated from further service by wounds or disease.—Mr. WYNDHAM replied: 20,658 have been invalided home; of these 63 died on the passage and 60 in military hospitals; there is no record of any having died in their own homes; 430 have been incapacitated from further service by wounds and disease.

*Cholera in India.*

Mr. SCOTT asked the Secretary of State for India whether, in view of the outbreak of cholera in the famine districts of India, any, and if so what, addition had been made to the famine medical service, and whether he could state the number of deaths from cholera in the famine districts.—Lord GEORGE HAMILTON replied: I am not able to state the number of additional medical officers and medical subordinates sent to the famine districts in consequence of the outbreak of cholera. I was informed that as regards the worst cholera tract in the middle of June the local authorities there had received as much extra medical help as they thought necessary. The returns which have reached me show that during the month of June the telegrams state that 22,198 cholera deaths were reported from British famine districts and there were 19,122 from native States similarly afflicted. During the three weeks ended on July 7th the reported cholera deaths averaged 6562 a week for British famine districts and 6185 a week for native States affected by famine.

FRIDAY, JULY 20TH.

*The Medical Service in India.*

Mr. SCOTT asked the Secretary of State for India whether the services of more than one medical man had been available at most of the large famine camps, containing from 20,000 to 30,000 people, at any time during the famine or since the outbreak of cholera.—Lord GEORGE HAMILTON replied: I have not received details as to the individual distribution of medical officers and medical subordinates at the different relief camps and relief houses. The famine codes contain full instructions for strengthening the medical staff in famine districts, for provision of hospital accommodation on relief works, for posting a medical officer or a subordinate qualified for independent charge to each hospital, and for the duties of such medical officers. The instructions as to engaging additional medical officers and subordinates from outside the regular service when need arises are full and clear.

*Civil Surgeons in South Africa.*

Dr. FARQUHARSON asked the Under-Secretary for War whether it was a fact, as stated by Mr. Burdett-Coutts in a letter to the newspapers, that civil surgeons employed in military hospitals in South Africa had been required by the Army Medical Department to sign a contract not to divulge in any way what their impressions might be on hospital matters?—Mr. WYNDHAM replied: Civil surgeons have to sign a contract, not being entitled to emoluments under the pay warrant or amenable to discipline under the Army Act. They have to sign a contract accepting the terms offered to them and the obligations of discipline, subject to the forfeiture of these terms. I have in my hand a copy of the contract. The only paragraphs that bear upon discipline are as follows: "During the said period I will devote my whole time and professional skill to my service hereunder, and will obey all orders given to me by commissioned military or naval officers or by the permanent medical officers of either of those services." And the next paragraph runs: "In case I shall complete my service hereunder to your satisfaction in all respects, I shall receive at the end of the said period a gratuity of two months' full pay at the rate hereinbefore specified, but in case I shall in any manner misconduct myself, or shall be (otherwise than through illness or unavoidable accident) unfit in any respect for service hereunder, of which misconduct or unfitness you shall be sole judge, you shall be at liberty from and immediately after such misconduct or unfitness to discharge me from further service hereunder, and thereupon all pay and allowances hereunder shall cease, and I shall not be entitled to any free passage home or gratuity." That is the only contract civil surgeons have to sign, and for my part I cannot see that it offers any support for the statement in question.—Mr. BURDETT-COUTTS said he desired to ask a question which, he thought, would contain a correction of detail and which added very largely to the force and significance of the statement referred to. He should like to ask whether it was not the case that when some letters had been published from doctors in South African hospitals they had to sign a statement to the effect that they were not to communicate their impressions of hospital matters to the public or that they were to take the consequences.—Mr. WYNDHAM: I have no knowledge of any such fact. That is the only contract we have made with civil surgeons and I am not aware of any other.—Sir HENRY CAMPBELL-BANNERMAN: Would it not be desirable to have some inquiry as to whether this declaration was ever enforced in South Africa? Telegraphic communication could soon be made.—Mr. WYNDHAM: There is no objection whatever.

MONDAY, JULY 23RD.

*Anti-Typhoid Inoculation in South Africa.*

Colonel WYNDHAM MURRAY asked the First Lord of the Treasury whether the instructions to the Commission of Inquiry into the Medical Arrangements in South Africa would include the making of a thorough inquiry on the spot by the medical members of the commission into the results of inoculation for typhoid fever in preventing the disease or lessening its effects.—Mr. BALFOUR replied: The inquiry to which my hon. and gallant friend refers, though doubtless one of very great importance, appears to me to be outside the scope of the reference to the commission, and probably it would require a commission of somewhat different constitution to investigate a purely scientific medical subject of the kind suggested.

*Hospital Accommodation for China.*

Mr. HEDDERWICK asked the Government what had been done to provide for the proper care of the British wounded at Tientsin and Taku; and whether there was any hospital accommodation at Wei-Hai-Wei.—Lord G. HAMILTON replied: Her Majesty's Government have no special information as to the arrangements made at the front for the wounded in the recent engagements, but there were available the medical staffs of the various British men-of-war under Admiral Seymour, and General Dorward took with him other medical officers and appliances. As regards hospital accommodation at Wei-Hai-Wei there is a good hospital on the island and good stone barracks convertible to hospital use if wanted. General Gaselee has telegraphed that as soon as he reaches Wei-Hai-Wei he will report on its suitability for the location of base hospitals. The water-supply on the island is good and ample. To this I have to add that the Government of India have already provided a hospital ship and are prepared to supplement this accommodation by converting three transports into hospital ships. The American hospital ship *Maine* has also been placed at the disposal of her Majesty's Government, and I am glad to take this opportunity of expressing our gratitude for this great act of generosity to the Atlantic Transport Company which has furnished the ship and to the American ladies who have provided the funds for equipping and maintaining it. I have also to inform the House that I have received from the Maharajah Sindhia of Gwalior the offer of a fully-equipped hospital ship for China, upon which he is willing to spend 20 lakhs. This princely offer is made on behalf of himself, his mother, and his wife, to testify their loyalty to her Majesty the Queen-Empress. Her Majesty's Government have expressed their acceptance of this most munificent offer and their deep appreciation of the motives which actuated his Highness to make it.

TUESDAY, JULY 24TH.

*Results of Anti-Typhoid Inoculation.*

Mr. CHANNING asked the Under Secretary of State for War whether he was aware that the Director-General of the Army Medical Department, at the Indian Medical Service dinner on June 14th, stated that the results of inoculation for typhoid fever, while it afforded some protection against contracting the disease, rather increased the risk of death when contracted, but that this only applied to the men, as both the incidence and case mortality among officers appeared to be increased by inoculation; and whether the recent statistics of Professor Wright of Netley, which show that both attacks and deaths from typhoid fever were seven times less in the inoculated than in the uninoculated, applied equally to officers and men separately.—Mr. WYNDHAM replied: I have no knowledge of the statement attributed to the Director-General of the Army Medical Department, and, as I have already explained to the House on more than one occasion, the statistics at present available are not sufficient to enable me to give a satisfactory reply to the question.

*Medical and Nursing Staff in the Orange River Colony.*

Dr. TANNER asked the Under Secretary of State for War if he had any official information showing that, in consequence of the arrangements, out of 24 nurses employed in the Orange River Colony 14 had succumbed; and, whether 100 more doctors and 200 nurses were now required and stores stacked at base were to be sent up to the front.—Mr. WYNDHAM replied: Eight nurses have died in South Africa. Lord

Roberts has quite recently asked for 20 more surgeons and 50 nurses. These are being sent. It is usual for stores to be stacked at the base and sent up as required.

*A Cow with a Tuberculous Udder.*

Mr. FIELD asked the President of the Local Government Board (1) whether he was aware that at a recent meeting of the Northwich Rural Council a communication was received from the county medical officer of health, Dr. Vacher, stating that he was informed by the medical officer of health for Manchester that a cow with a tuberculous udder had been found on a farm in West Cheshire; that Dr. Niven wrote to Dr. Vacher advising to isolate the infected cow, to dry her at once, and have her fed for slaughter; (2) whether the Local Government Board had sanctioned such a system; and (3) whether he was aware that Dr. Vacher, in conjunction with the late Inspector Wagstaffe, inaugurated and carried out a series of tuberculous prosecutions in Birkenhead.—Mr. CHAPLIN: The facts appear to be substantially as stated in the first paragraph. The cow, however, was not sold but was destroyed by the farmer. The answer to the second paragraph is in the negative. Dr. Vacher, before becoming county medical officer was medical officer of health for Birkenhead, and I am informed that during this period the Birkenhead Town Council, as advised by him, arranged for a much more thorough inspection of meat intended for the food of man than had previously been attempted and appointed Mr. Wagstaffe to give his whole time to the work. Dr. Vacher, however, appears to have had nothing to do with the present case except to inform the Northwich Rural District Council of the communication which he had received from Dr. Niven.

*Medical Practice and Company Law.*

At this sitting the House took the report stage of the Companies Bill, and at the commencement of the proceedings it was decided to strike out of the Bill Clause 2 applying the Pharmacy Act to companies carrying on business as chemists and druggists and Clause 3 declaring that it shall not be lawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife.—Colonel WELBY moved to strike out the former clause.—Mr. RITCHIE, President of the Board of Trade, the Minister in charge of the Bill, said he felt himself unable to resist the motion. In the Standing Committee he himself had recommended that this clause and Clause 3 should be omitted, but his recommendation was not adopted by the Committee. He did not propose to enter into the merits of either clause, though he admitted that there were evils which required to be dealt with. He did not desire to commit himself as to the particular mode by which the evils should be remedied. His main object in assenting to the motion was that in his opinion the clauses were not germane to the Bill. He knew of no instance in which in all the various Companies Acts there had been any attempt whatever made to say who should and who should not carry on companies. They had all been Acts dealing with machinery and the creation and formation and administration of companies.—Mr. BRYCE said that he took the same view of this matter as the President of the Board of Trade. He admitted that the two clauses dealt with important subjects. He thought these subjects ought to be dealt with, and he thought that they ought probably to be dealt with even more strongly than they were dealt with in the clauses now before the House. But they raised questions quite apart from the machinery with which this Bill was concerned, and he thought it better to leave the clauses out of the Bill.—Mr. GIBSON BOWLES thought the House ought to know how it came about that these clauses appeared in the Bill.—Mr. RITCHIE explained that they were inserted in the House of Lords, and he considered it only proper and courteous to the House of Lords that the Bill should be introduced in this House in the form in which it came from the House of Lords.—Sir WALTER FOSTER said that he hoped the House would not omit the clauses. They had received a great deal of consideration. They had been in the Bill in two successive sessions. They were introduced originally in a separate Bill and the Lord Chancellor himself deliberately put them into the Bill as the best method of regulating certain dangers and difficulties to which the public were exposed in the existing state of the law. The thing was done after consultation with the persons affected. Not in the interest of any class, but in the interest of the public generally, he appealed to the Government to retain the clauses and not to yield to the clamour of a particular class. He felt that if they were omitted an opportunity would be lost of protecting the public against many forms of illegal practice in pharmacy, medicine, and dentistry. He did not think that there should be a panic because of the opposition of certain trading interests affected by the clauses.—Sir JAMES HASLETT spoke in support of the omission of the clauses.—Mr. LAWSON WALTON said that there was no question of clamour or of opposition from a particular class. It was the duty of this House to pass legislation which could be easily referred to and which would be free from confusion, and he submitted that if these clauses were retained they would cause confusion and make the statute difficult to refer to. These clauses were, in his opinion, entirely out of place in this Bill, and he hoped that the House would strike them out.—Colonel LONG argued that the President of the Board of Trade had given no sufficient reason for saying that the clauses were not germane to the Bill. Surely the object of the measure was to put down abuses in connexion with companies. Certain abuses were known to exist in connexion with medical, dental, and pharmacy practice and the Lord Chancellor had thought fit, after considering the evidence, to insert these clauses.—Sir J. BATTY TUKE said that he regretted that Clause 3 was to be dropped, as its action would be to put a stop to practices which served to paralyse the action of the Medical Acts in certain important particulars. Under the law now existing persons in no way connected with the medical profession were able to form companies the object of which was to act as physicians, surgeons, and dentists. Over such companies the General Medical Council could exercise no jurisdiction, and one of the main objects of the Medical Acts was inoperative. The public were the sufferers, as it was rendered impossible to distinguish between qualified and unqualified practitioners. He recognised that the clause was not germane to the general tenor of the Bill, but he felt so strongly on the subject that he would take an early opportunity next session of introducing a Bill dealing with the subject.—The motion for the omission of Clause 2 was then put to the House and agreed to without a division.—Mr. MADDISON moved to omit Clause 3.—This motion was also agreed to without a division.

## BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.

Hernia; its Etiology, Symptoms, and Treatment. By W. McAdam Eccles, M.S. Lond., F.R.C.S. Eng. 1900. Price 7*s.* 6*d.* net.

Electricity in Gynæcology. By R. J. Cowen, L.R.C.S., L.R.C.P. Irel. 1900. Price 3*s.* 6*d.* net.

BAILLIERE, J. B. ET FILS, Paris.

Traité de Chirurgie Clinique et Opératoire. Par A. Le Dentu et P. Delbet. Tome neuvième. 1900.

BAUERMEISTER, F., Glasgow.

Ueber Entartung. Von P. J. Möbius. 1900. Price 1*s.* 3*d.*

Functionelle und Organische Nerven-Krankheiten. Von Professor Dr. H. Obersteiner. 1900. Price 1*s.* 3*d.*

Die Aetiologie der geburtshülflichen Dammverletzung und der Dammschutz. Von Dr. M. Krantz. 1900. Price 3*s.*

Die anorganischen Salze im Menschlichen Organismus. Von Dr. R. Brasch. Erste abteilung. 1900. Price 2*s.* 6*d.*

Schädel und Auge. Von Dr. F. Danziger. 1900. Price 3*s.*

Verhandlungen der sechzehnten Versammlung der Gesellschaft für Kinderheilkunde in München, 1899. Von Dr. E. Pfeiffer. 1900. Price 8*s.*

Die operative Beseitigung der durchsichtigen Linse. Von Professor Dr. E. Pflüger. 1900. Price 7*s.* 9*d.*

Der Pemphigus und die Essentielle Schrumpfung der Bindehaut des Auges. Von Dr. E. Franke. 1900. Price 3*s.* 9*d.*

Die Therapeutischen Leistungen des Jahres 1899. Von Dr. A. Pollatschek. XI. Jahrgang. 1900. Price 8*s.*

CASSELL AND COMPANY, London.

Tropical Diseases: a Manual of the Diseases of Warm Climates. By Patrick Manson, C.M.G., M.D., LL.D. Aberd. Illustrated. Revised edition. 1900. Price 10*s.* 6*d.*

CHURCHILL, J. & A., Great Marlborough-street, London.

Rheumatism, Rheumatoid Arthritis, and Subcutaneous Nodules. By C. O. Hawthorne, M.D., M.R.C.P. 1900. Price 2*s.* 6*d.*

CLARENDON PRESS, Oxford.

The Structure and Functions of Bacteria. By A. Fischer. Translated into English by A. Coppen Jones. 1900.

CLIVE, W. B. (University Tutorial Press), London.

The Organised Science Series. First Stage Botany, as Illustrated by Flowering Plants. By A. J. Ewart, D.Sc., Ph.D., F.L.S. Price 2*s.*

FLOOD AND SON, The Borough Works, Lowestoft.

Reduction of Meteorological Observations, made at Lowestoft from 1879 to 1898. By S. Henry Miller, F.R.M. Society. 1900. Price 3*s.* 6*d.*

GRIFFIN, C., AND CO., Exeter-street, Strand, London.

Year-book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from Official Sources. Seventeenth annual issue. 1900. Price 7*s.* 6*d.*

Flesh Foods: a Practical Handbook. By C. Ainsworth Mitchell, B.A. Oxon., F.I.C., F.C.S. Illustrated. 1900. Price 10*s.* 6*d.*

LEWIS, H. K., Gower-street, London.

Medical Electricity: a Practical Handbook. By H. L. Jones, M.A., M.D. Being the Third Edition of "Medical Electricity," by W. E. Steavenson, M.D., and H. L. Jones, M.D. Illustrated. 1900. Price 10*s.* 6*d.*

LUCAS GRÄFE AND SILLEM, Hamburg.

Mikrophotographischer Atlas zum Studium der Pathologischen Mykologie des Menschen. Von Dr. Eugen Fraenkel. Lieferung 3. Bacillus der Beulenpest. 1900.

MACCRELLISH AND QUIGLEY, Trenton, New Jersey.

Twenty-third Annual Report of the Board of Health of the State of New Jersey, and Report of the Bureau of Vital Statistics, 1899. 1900.

MALOINE, A., Paris.

Guide Médical Parisien Public par "L'Indépendance Médicale." 1900.

MASSON ET CIE, Paris.

Leçons sur les Maladies du Sang. Par G. Hayem. 1900.

Le Vade Mecum du Médecin Expert. Par A. Lacassagne. Deuxième édition. 1900.

PENTLAND, Y. J., Edinburgh and London.

The Edinburgh Medical Journal. Edited by G. A. Gibson, M.D., F.R.C.P. Edin. New series. Vol. VII. 1900.

PUBLISHED ON THE PHŒBE A. HEARST FOUNDATION, Philadelphia.

University of Pennsylvania: Contributions from the William Pepper Laboratory of Clinical Medicine. 1900.

REBMAN AND CO., Shaftesbury-avenue, London.

A Treatise on Appendicitis. By John B. Deaver, M.D. Second edition. Illustrated. 1900.

Surgical Anatomy: a Treatise on Human Anatomy in its Application to the Practice of Medicine and Surgery. By J. B. Deaver, M.D. In three vols. Illustrated. Vol. II. 1890. Price 5 guineas net for the complete work of three vols. (not sold separately). Vol. III. ready shortly.

SMITH, ELDER, AND CO., Waterloo-place, London.

Dictionary of National Biography. Edited by S. Lee. Vol. LXIII. Wordsworth—Zuglestein. With Indexes to Vols. I. to XIV. 1900. Price 15*s.* net.

STEINHEIL, G., Paris.

Chirurgie du Rein et de l'Uretére (Indications: Manuel Opératoire). Par V. Rochet. 1900.

SPOTTISWOODE AND CO., 54, Gracechurch-street, London.
Minutes of the General Medical Council—Jan. 1st, 1900, to May 31st, 1900. Vol. XXXVII. 1900.

TROW DIRECTORY PRINTING AND BOOKBINDING COMPANY, New York.
Medical and Surgical Report of the Presbyterian Hospital in the City of New York. Vol. IV. January, 1900 Edited by A. J. McCosh, M.D., and W. G. Thompson, M.D. 1900.

VOGEL, F. C. W., Leipzig.
Encyklopädie der Haut und Geschlechts-Krankheiten. Von Professor Dr. E. Lesser. 1900.

VOLTA BUREAU, Washington, U.S.A.
Helen Keller Souvenir, commemorating the Harvard Final Examination for Admission to Radcliffe College, June 29th-30th, 1899.

WRIGHT, J., AND Co, Bristol.
Operative and Practical Surgery. By T. Carwardine, M.S. Lond. F.R.C.S. Illustrated. 1900. Price 10s. 6d. net.

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**Montrose Royal Asylums for the Insane, 1781-1900 (House committee, Sunnyside Asylum, Montrose, 1900).—Magazines, &c., for August: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, and Cornhill Magazine.**

# Appointments.

***Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.***

ANDREW, B. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Long Crendon Sanitary District of the Thame Union, vice M. H. Humphreys, resigned.

BULLMORE, W. K., M.D. St. And., M.R.C.S., has been re-appointed Medical Officer of Health by the Falmouth Town Council.

BUSTEED, J. H., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Ellesmere and Welshampton Sanitary Districts and for the Workhouse of the Ellesmere Union, vice J. W. Roe, resigned.

CHADBORN, C. N., L.R.C.P. Lond, M.R.C.S., has been appointed House Surgeon to the Sussex County Hospital, Brighton.

COSTINE, W. C., M.R.C.S., has been appointed Public Vaccinator for the Kirkdale Division of the West Derby Union.

DAVIS, J. H, M.B., B.Ch. Irel., has been appointed Assistant Medical Officer at the Brownlow Hill Workhouse, Parish of Liverpool, vice E. Smith.

DAVIES, H. H., M.R.C.S., has been appointed Medical Officer of Health for the Uwchaled Sanitary District, vice R. T. Davies.

DENYSSEN, P. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Halesworth Urban District.

EMMETT, RICHARD, L.R.C.P. Lond., M.R.C.S, has been appointed Certifying Surgeon under the Factory Acts for the County Borough of Portsmouth and the Civil Parish of Cosham in Fareham Rural District.

ENSOR, HENRY COLLEN, M.R.C.S., has been appointed Ophthalmic Surgeon to the Cardiff Provident Dispensary and to the Cardiff Infirmary.

FEY, W. L., M.B., B.Ch. Oxon., has been appointed Medical Officer for the Catterick and Scorton Sanitary Districts of the Richmond Union, Yorks, vice H. M. Eyres, resigned.

FORSTER, LUCINDA, M.B., B.S. Lond., has been appointed House Surgeon to the Bristol Royal Hospital for Sick Children and Women, St. Michael's Hill.

GOTT, J., L.S.A., has been appointed Medical Officer for the Ringwood Union and Certifying Surgeon under the Factory Acts for the Ringwood Rural District in the county of Southampton.

HALL, G. C., M.R.C.S., has been appointed Medical Officer for the Ottmoor Sanitary District of the Headington Union, vice C. Black, resigned.

HANLY, T. F., L.R.C.P, L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Gillingham District of Dorset.

HERBERT, A. W. C., L.S.A., has been appointed Certifying Surgeon under the Factory Acts for the Southwold District, Suffolk.

HIRSCH, CHARLES J. W., M.R.C.S., L.R.C.P. Lond, L.S.A., has been appointed Public Vaccinator for Woolwich.

LESLIE, L. F., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Evesham Union, vice H. E. Haynes, resigned.

MARTIN, J. P., L.R.C.P. Irel., L.R.C.S., has been appointed Assistant Medical Officer at the Brownlow Hill Workhouse, Parish of Liverpool, vice W. B. Bennett.

MCCALL, EVA, M.B., C.M. Glasg., has been appointed Resident Medical Officer of the Union Infirmary, Salford.

NEECH, J. T., L.R.C.P. Edin., L.F.P.S. Glasg., D.P.H. Vict., has been appointed Medical Officer of Health for the Borough of Halifax.

NOLAN, H. F., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Third Sanitary District of the West Ashford Union, vice J. H. Mitcheson, deceased.

NOWELL, WALTER SALMON, M.A. Oxon., L.R.C.P., M.R.C.S., L.D.S. Eng., has been appointed Assistant Dental Surgeon to the Middlesex Hospital.

PENDLEBURY, H. S., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Assistant Surgeon to St. George's Hospital, Hyde Park Corner, S.W.

PRICE, D., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer for the Saddleworth Union.

RIMELL, A. T., L.R.C.P. Edin., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Long Sutton District of Lincolnshire.

ROUSE, E. R., L.R.C.P. Lond., M.R.C.S., has been appointed District Medical Officer for the Ticehurst Union, vice W. H. Hall, resigned.

SCATCHARD, J. P., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been appointed Medical Officer for the Tadcaster Sanitary District and the Workhouse of the Tadcaster Union, vice T. B. Ireland, resigned, and Certifying Surgeon under the Factory Acts for the Tadcaster District of the West Riding of Yorkshire.

SHEILD, A. M., M.B., B.C. Camb., F.R.C.S. Eng., has been appointed Surgeon to St. George's Hospital, Hyde Park Corner, S.W., vice T. Warrington Haward.

SMITH, E. J., L.R.C.P. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Walton-on-Naze District of Essex.

STOKES, C. E., M D. Dubl., B.Ch., has been appointed Medical Officer for the Brampford Speke Sanitary District of the St. Thomas Union, Exeter, vice T. Smith, resigned.

SWAINSTON, ELIOT, M.B., B.S. Durh., has been appointed House Surgeon to the North-Eastern Hospital for Children, Hackney-road, Shoreditch, N.E.

SYMONS, W. H., M.D. Brux., L.R.C.P. Lond., M.R.C.S., D.P.H. Oxon., has been re-appointed Medical Officer of Health by the Bath City Council.

WHITE, P. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Bugbrooke Sanitary Division of the Northampton Union.

# Vacancies.

***For further information regarding each vacancy reference should be made to the advertisement (see Index).***

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 yearly for cab-hire, with furnished rooms, fire, lights, and attendance.

BIRMINGHAM WORKHOUSE.—Medical Officer for three weeks from the middle of August. Board, apartments, laundry, and attendance provided. Apply, stating terms, to the Clerk to the Guardians, Birmingham.

BOSCOMBE HOSPITAL, Bournemouth.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. No beer or spirits.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Resident Medical Officer. Salary £100 per annum, with board, &c.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals. Salary £120 per annum, with board, lodging, and attendance. Apply to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

CORPORATION OF BIRMINGHAM.—CITY HOSPITAL, Lodge-road.—Second Assistant Medical Officer. Salary £120 per annum, with board, residence, &c.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing. Also Assistant House Surgeon for seven months from Oct. 1st. Salary at the rate of £40 per annum, with board, lodging, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon, unmarried. Salary £60, with board, lodging, and washing.

HAMPSTEAD HOSPITAL, Parliament-hill, N.W.—Resident Medical Officer for six months. Salary at the rate of £120 per annum, with rooms, coals, and gas.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, 74, King-street, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

LONDONDERRY COUNTY BOROUGH.—Medical Officer to act as Medical Superintendent Officer of Health and Medical Attendant at Foyle Hill Infectious Diseases Hospital. Salary £350 per annum. Apply to the Executive Sanitary Officer's Office, Guildhall, Londonderry.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the institution.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer to the Out-patient Department, Hardman-street, Manchester. Honorarium £40 per annum.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth, Newcastle-upon-Tyne.—Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c., rising £10 annually to £150.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH CAMBS. HOSPITAL, Wisbech.—Resident House Surgeon. Salary £130 per annum, with furnished house.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—Resident Medical Officer for 12 months. Salary £120 per annum, with board, residence, and washing. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing.

PARISH OF ROUSAY AND EGILSHAY, Orkney.—Resident Medical Officer. Salary £51 sterling per annum. Apply to Inspector of Poor, Rousay, Orkney.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence, board, and washing. Also Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL INFIRMARY, Sheffield.—Junior Assistant House Surgeon. Salary £70 per annum, with board, lodging, and washing.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried. Apply to Medical Superintendent.

ST. BARTHOLOMEW'S HOSPITAL, Rochester.—Assistant House Surgeon. Salary £100 per annum, with board, washing, firing, and lights.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum, with board, residence, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy of Certifying Surgeon under the Factory Acts at Syston, in the county of Leicester.

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. An honorarium at the rate of £20 per annum given, with board, residence, and laundry.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75, with board, residence, &c.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £130, rising £10 a year to £160, with board, residence, and washing.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL, Wolverhampton.—Assistant House Physician for six months. Honorarium at the rate of £75 per annum, with board, lodging, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

BRADLEY.—On July 18th, at Greville House, Raynes-park, Wimbledon, S.W., the wife of James Edmund Campbell Bradley, M.B., B.C. Cantab., of a daughter.

CUNNINGHAM.—On June 25th, at The Mount, Glossop-road, Sheffield, the wife of R. Wiseman Cunningham, M.B., C.M., of a son.

PATON.—On July 17th, at Lynedoch-place, Edinburgh, the wife of D. Noel Paton, M.D., of a son.

PRATT.—On July 19th, at Heaton-road, Newcastle-on-Tyne, the wife of E. F. Pratt, M.B., of a son.

## MARRIAGE.

PAYNE—DERRY.—On July 19th, at the Wesleyan Church, Streatham, Joseph Lewin Payne, L.R.C.P., M.R.C.S., L.D.S. Eng., of Devonshire-street, Portland-place, to May Castine Derry, youngest daughter of Charles J. D. Derry, of The Woodlands, Tooting-common.

## DEATHS.

BENNETT.—On July 19th, at Maidenhead, Berks, William Charles Storer Bennett, F.R.C.S., of George-street, Hanover-square, W., aged 48 years.

CAMERON.—On July 18th, at Chipping Campden, Gloucestershire, Archibald Henry Foley Cameron, M.R.C.S., L.R.C.P. aged 71 years.

CROKER.—On July 18th, at Claremont, Seaford, Sussex, Surgeon-Major Arthur Croker, late Army Medical Department, in his 69th year.

PRESCOTT.—At Great Queen-street, W.C., Thomas Prescott, M.R.C.S., L.R.C.P., aged 52 years.

SHEWEN.—On July 18th, at Lindenhurst, Sevenoaks, Kent, Alfred Shewen, M.D. Lond., of Sydney, N.S. Wales, Senior Consulting Hon. Physician to Prince Alfred's Hospital of that city, in his 57th year.

WRIGHT.—On July 20th, at Vanbrugh-park, Blackheath, Brigade-Surgeon Thomas Wright, late Army Medical Department, aged 68 years.

*N. B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE PAY OF DISTRICT SURGEONS IN CAPE COLONY.

WE extract the following from the *Cape Gazette*:—

*GOVERNMENT NOTICE—No. 319, 1900.*

*Colonial Secretary's Office,*
*Cape Town, 8th May, 1900.*

VACANT DISTRICT SURGEONCIES.

INTENDING Candidates are invited to make early application for the following District Surgeoncies, now vacant, viz.:—

1. Hay (Additional), resident at Postmasburg. Allowance £40 per annum, and private practice.

2. Fraserburg (Additional), resident at Williston, vacant by the resignation of Dr. ——. Allowance £50 per annum, and private practice.

3. Namaqualand (Additional), resident at Garies. Allowance £100 per annum, and private practice.

4. Tabankulu, vacant by transfer of Dr. ——. Allowance £200 per annum, inclusive of forage allowance, £50 per annum, and private practice.

5. Flagstaff, vacant by resignation of Dr. ——. Allowance £200 per annum, including forage allowance of £50, and private practice.

6. Mount Fletcher, vacant by resignation of Dr. ——. Allowance £200 per annum, inclusive of forage allowance of £50 per annum, and private practice.

NOEL JANISCH,
Under Colonial Secretary.

Medical men will be interested to see the value that is set upon them. The remuneration offered by the Government of Cape Colony is hardly likely, we think, to tempt many of our readers to a colonial life.

## THE INTERRUPTED ELECTRICAL CURRENT IN CHRONIC COMPLETE DEAFNESS.

*To the Editors of* THE LANCET.

SIRS,—I am treating a case of chronic and extreme deafness (the cause of which is unknown to me) by the application of the interrupted electrical current. After about a week's treatment the hearing has, I believe, slightly improved and the patient tells me that he has to day heard the brewery steam gong for the first time for years. Could you tell me if this treatment has been found beneficial in other cases of deafness? I am, Sirs, yours faithfully,

DIGBY F. B. COTES, M.R.C.S. Eng.

Burton-on-Trent, July 21st, 1900.

*** It is obvious that in many cases of chronic complete deafness no electrical current could restore or improve hearing. In others some good might follow the treatment. Our correspondent does not tell us how, when, or where the electricity is applied. The cause of the condition is the important point.—ED. L.

## A POINT UNDER THE CORONERS ACT.

*To the Editors of* THE LANCET.

SIRS,—I should be much obliged if you would refer me to any authority as to the law on the following case. A man was brought dead to my hospital the other day and there were no signs as to how he met his death. The coroner ordered me to make a post-mortem examination, which I did, and attended the inquest afterwards and gave evidence. I claimed the usual fee, £2 2s., for the work, when the coroner asked me to show him the authority on which I based my claim. House surgeons are not entitled to fees for such work when the patient has died *in* the hospital, but if brought dead to the hospital and an inquest is held, or if a post-mortem examination and an inquest are held and the house surgeon is summoned to attend, I believe the house surgeon receives the usual remuneration. Such has been my previous experience.—I am, Sirs, yours faithfully,

July 16th, 1900. R.M.O.

*** The authority governing this question is contained in the 22nd section of the Coroners Act of 1887 (50 & 51 Vict., c. 71) which runs as follows:—"§ 22. A legally qualified medical practitioner who has attended at a coroner's inquest in obedience to a summons of the coroner under this Act shall be entitled to receive such remuneration as follows—that is to say: (*a*) for attending to give evidence at any inquest whereat no post-mortem has been made by such practitioner, one guinea; and (*b*) for making a post-mortem examination of the body of the deceased, with or without an analysis of the contents of the stomach or intestines, and for attending to give evidence thereon, two guineas. Provided that (1) any fee or remuneration shall not be paid to a medical practitioner for a post-mortem examination instituted without the previous direction of the coroner; (2) where any inquest is held on the body of a person who has died in a county or other lunatic asylum, or in a public hospital, infirmary, or other medical institution or in a building or place belonging thereto or used for the reception

of the patients thereof, whether the same be supported by endowments or by voluntary subscriptions, the medical officer whose duty it may have been to attend the deceased person as medical officer of such institution as aforesaid, shall not be entitled to such fee or remuneration." It seems perfectly clear from the above that the coroner was wrong in refusing the fee asked for, unless he believed that the deceased died in the hospital. Perhaps if the section were laid before him he would consider it now. Otherwise the precise remedy of the medical man is not very clear, but it seems to be by suing the coroner in the county-court. This is not a satisfactory proceeding where the amount is small owing to the small amount of costs recoverable, but the plaintiff by clearly stating the facts and citing the section given and the twenty-sixth section, which orders the coroner to pay costs, might be able to make good his case without legal assistance.—ED. L.

## "UPWARD *versus* DOWNWARD VENTILATION."

THIS is the title of a little pamphlet which has reached us from Messrs. Robert Boyle and Son of 64, Holborn Viaduct. It contains extracts from the report of Professor Woodbridge on the ventilation of the Capitol, Washington, U.S.A. What Messrs. Robert Boyle and Son maintain is that when natural ventilation is properly and scientifically applied it invariably proves more successful than mechanical or other forms of artificial ventilation and it has the advantages that it cannot get out of order or break down, and costs but little to apply and maintain. In addition, the book contains excerpts from well-known authorities who condemn the downward ventilation of the Plenum system.

## "THE DUTIES OF A PUBLIC VACCINATOR."

*To the Editors of* THE LANCET.

SIRS,—I am much obliged to you for your answer to my letter in THE LANCET of July 14th (p. 148), *re* vaccination prosecutions. Thinking the result of prosecution in this district may be of interest, I send a few lines to let you know. Three cases came before the magistrates, and in each case a fine of 1*s.* and costs was inflicted, the costs to include a fee of 10*s.* 6*d.* per case to the medical men subpœnaed to give evidence. I am not certain, but I think in cases prosecuted in the future that the vaccination officer's evidence will be sufficient to convict, without the public vaccinator appearing in court.

I am, Sirs, yours faithfully,

July 17th, 1900. X.

## A PATENT AUTOMATIC BEVERAGE MACHINE.

WE learn that it is proposed to introduce shortly for out-door public use an automatic machine for the supply of non-alcoholic beverages—soda-water, lemonade, ginger-beer, &c. The principle of the penny-in-the-slot will be employed. The act of dropping the coin releases to each customer a collapsible cup which when placed in position under a delivery tube receives on turning a handle a cupful of beverage either effervescent or still. We are glad to notice that every precaution is promised in regard to the cleanliness and purity of the drinks supplied and of the drinking vessels. We fear, however, that certain difficulties will be encountered in thus attempting to place an automatic supply of beverages before the public. Imagine, for example, the machine being bombarded by the sun's rays in weather of the kind that we are now experiencing. The drinks would be somewhere between hot and cold unless the machines were jacketed with an ice chamber. Then special care will have to be taken to avoid metallic impurity. The idea is good in some respects. Some guarantee could be afforded of the purity of the beverages and the recourse to a stuffy or otherwise unpleasant bar or counter could be avoided. The particulars of the invention may be had from the Patent Automatic Beverage Machine Company, of 60, Chancery-lane, W.C.

## "DEATHS UNDER CHLOROFORM."

*To the Editors of* THE LANCET.

SIRS,—Mr. Harris's letter under the above heading in THE LANCET of July 14th, page 147, makes extremely pretty reading, but as an answer to a question, asking for some figures whereby one can base opinion as to the efficiency claimed by its supporters of the Krohne inhaler, it is an ingenious way of "begging the question." It is all very well to quote "If they hear not Moses and the Prophets," but is everybody as satisfied as Mr. Harris that the Krohne inhaler is the present-day representative of the ancient Hebrew law-giver and that its supporters are "the Prophets"? The Krohne Inhaler 1900 can only, in the natural order of events, be on its trial, as six months use of a new instrument by a comparatively small number of observers cannot be considered conclusive. I cannot anywhere in any of the journals or medical papers find any statistics whatever relating to the Krohne inhaler, so that one is absolutely in the dark as to how often it has been used; but I do find recorded in THE LANCET of Nov. 4th, 1899, page 1227, a death with the Krohne and Sesemann inhaler, so it would appear both from that and also from Mr. Harris's carefully guarded statement "that (the Krohne inhaler of 1900) in the hands of any ordinary practitioner with common sense could *hardly ever result* in death," that it is possible to have a fatality even when one has given attentive hearing to "Moses and the Prophets." In THE LANCET of August 19th, 1899, page 515, is an account of a death from chloroform anæsthesia with the statement that at the Children's Hospital, Birmingham, since the opening up to that date, 14,500 cases of anæsthesia had occurred and that only one death had taken place in that number; again, at the Royal Southern Hospital, Liverpool, where chloroform by the "rule-of-thumb" method is almost exclusively used, there has never been a death recorded since the opening—I cannot at the moment tell how many years that is, but I know it is considerably over 20, and the average number of operations being about 30 per week, that will give another big list of figures to the credit side of the "rule-of-thumb" method. Even the greatest advocate of the Krohne inhaler, Dr. Edmunds, does not pretend to claim its absolute infallibility, as anyone may read in his letter in THE LANCET of Oct 28th, 1899, p. 1205. He there plainly states that it is not only the inhaler but the man using it which has everything to do with the result attained. Another fact I wish to insist upon is, what does it matter about registering the exact amount of chloroform used to a drop? Everyone must realise that no two patients require the same amount of the drug to ensure an equal degree of anæsthesia and that the rule of averages is an absolutely fatal one to go by; what would kill outright one patient will not get another one under at all. Another objection to the Krohne inhaler is the time taken to get a patient under, and time is of importance where from 10 to 14 operations are to be performed in an afternoon; but, still, one would set aside that if it were conclusively proved that the new method was an absolutely safe one, which I maintain has not been done yet. Give us some facts and figures to go on; do not quote single cases where a man has taken chloroform in a Krohne inhaler and went off without "any coughing, struggling, or any unpleasant effects whatever"—that is no use at all. One has seen dozens of patients put under by the "rule-of-thumb" method with exactly the same state of affairs. Passing over the rather childish parallel of the weighing or guessing out of strychnine, I shall welcome any reply from Mr. Harris which contains a list of a sufficiently large number of cases of anæsthesia with the Krohne inhaler, also at the same time a record of the casualties.

I am, Sirs, yours faithfully,

Liverpool, July 16th, 1900. FRANK E. MARSHALL, M.B. Vict.

## A SURGEON'S FEES.

THE hearing of the case of Collier *v.* Epstein was concluded on July 18th in the Queen's Bench Division before Mr. Justice Kennedy and a special jury. The action was brought by Mr. M. P. M. Collier, of Harley-street, against the widow of Mr. Ludwig Epstein, of Twickenham, to recover £152 5s., balance of fees amounting to 180 guineas alleged to be due in respect of certain surgical operations and subsequent attendance upon the defendant's husband. The jury came to the conclusion that 120 guineas, less the 35 guineas already paid, would be a fair and reasonable remuneration for the operation and attendance, and gave a verdict accordingly. Judgment was therefore entered for the plaintiff for £89 5s.

## "WORD-BLINDNESS."

*To the Editors of* THE LANCET.

SIRS,—I am much obliged for Dr. J. Edmunds's instructive letter and references (THE LANCET, June 16th, p. 1767) chiefly as to paralytic aphasia, but I should like to repeat my question as to those typically pure and uncomplicated cases mentioned (pages 1506–8), where not one of "the various channels of receptivity was affected" save the recognition of the small naked outlines of print. Where there was no difficulty in naming objects from the small pictures of them in a spelling-book, if the letters were first introduced as distinctively coloured objects which could be grasped, involving the cheiro-kinæsthetic and muscular memories (from the weight) and the tactile memory (from variety of textures and materials), would not the ordinary printed letters be recognised as pictures of these?

I am, Sirs, yours faithfully,

Upper Bedford-place, W.C., July 11th, 1900. C. G. S. MENTEATH.

PS.—If the letters were not recognised as the same as the coloured models then it would be helpful to the patient to draw and colour the letters (J. Wyllie, 1894, p. 350). If there is anything in coloured audition or pseudo-chromæsthesia (*s. v.* Tuke, Dictionary of Psychological Medicine), and normal persons have practically used it (Popular Science Monthly, July, 1891, p. 372), also the blind who have once seen (Memorabilien, Heilbronn, 1882, ii., 524–36), and the deficiency of one memory is frequently compensated by the increased memory of of another sense, especially of hearing, the colours and shades of colours should give great assistance. The letters might be named after their colours: blue = *b*; pale blue = *p*; and crimson, cerise = *c*. Only 26 characters need be considered, as most of the capitals are the same as or resemble, the corresponding small letters (it would be almost possible to read without the knowledge by heart of the remainder). Moreover, as the vowels in one case were remembered while the others were forgotten they might be left plain; semi-vowels and the aspirate might be white. But it is in syllable- or word-blindness that the colours would be most useful, as, since juxtaposed colours sometimes modify, run into each other, "kill," or, on the other hand, set each other off, the patterns or colour complexes of the syllables might obtain some manner of registration in the brain. Thus harmonies or colours would be easily recognised, and combined consonants would be remembered as one colour where they mingled together. The vowels not being coloured the distinctive outlines of the syllables would come out, although it is said that when words are coloured they usually acquire their colour from the vowels which seem to be

the most frequently coloured (Memorabilien). If, however, it were still difficult to remember what colours to chalk the printed letters, then the three primary colours and their shade-varieties respectively would have to be assigned to three principal shapes of letters—the small ones as *n*, *m*, *r*, *c*, *s*, *z*; those above the line *b*, *d*, *t*, *f*, *k*, *l*; and those below *p*, *q*, *g*, *j*—and still be named after their colours.

A CORRESPONDENT writes:—"Can any reader of THE LANCET recommend a good place to which to send a young woman for instruction in gymnastics of the chest? She wants to learn to expand her chest and has weak erectores spinæ. Somewhere in central or western London would be convenient."

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, July 26th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation Vacuo. | Maximum Temp. Shade. | Min Temp | Wet Bulb | Dry Bulb | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| July 20 | 29·96 | E. | ... | 126 | 95 | 68 | 68 | 73 | Cloudy |
| ,, 21 | 30·12 | S.W. | ... | 114 | 79 | 66 | 66 | 70 | Cloudy |
| ,, 22 | 30·12 | W. | ... | 123 | 84 | 65 | 65 | 69 | Cloudy |
| ,, 23 | 30·10 | N. | ... | 123 | 86 | 68 | 68 | 72 | Cloudy |
| ,, 24 | 30·05 | S.W. | ... | 131 | 91 | 67 | 69 | 73 | Hazy |
| ,, 25 | 29·90 | S.W. | ... | 135 | 95 | 68 | 70 | 75 | Hazy |
| ,, 26 | 30·00 | N.W. | ... | 122 | 80 | 68 | 66 | 70 | Fine |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY** (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY** (31st).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY** (1st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

**THURSDAY** (2nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY** (3rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), Lonpon Throat (2 P.M. and 6 P.M.).

**SATURDAY** (4th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## EDITORIAL NOTICES.

**It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.**

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE, OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## BRITISH MEDICAL ASSOCIATION MEETING AT IPSWICH.

DURING the forthcoming meeting of the British Medical Association at Ipswich the representatives of THE LANCET can be consulted at the Great White Horse Hotel, Ipswich, with regard to our reports of papers and proceedings.

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

### TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

The rates of subscriptions, post free, either from THE LANCET Offices or from Agents, are:—

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Office, 423, Strand, London, W.C.

**During the week marked copies of the following newspapers have been received:** *Liverpool Daily Post, Morning Herald, Lisburn Standard, Sussex Daily News, Gazette (Middlesbrough), Bristol Mercury, Hereford Times, Norwood Review, Derbyshire Courier, Ilkley Free Press, Midland Free Press, Montrose Standard, Cleckheaton Guardian, Bexhill Chronicle, Gloucester Journal, Oxford Chronicle, Times of India, Pioneer Mail, Surrey Mercury, Lancashire Post, Grimsby News, Dundee Advertiser, New York Sun, Manchester Guardian, Western Mail, Sheffield Daily Telegraph, Scotsman, Citizen, Builder, Architect, Yorkshire Post, City Press, Leeds Mercury, Shanghai Mercury, Cape Register, Vegetarian, Newark Advertiser, Westminster Budget, Sydney Mail, Reading Mercury, Hertfordshire Mercury, Local Government Chronicle, Loughborough Examiner, St. Helens Newspaper, Buckingham Express, Bicester Herald, Bolton Evening News, Hastings News, Science Siftings, South-Eastern Gazette, Oswestry Advertiser, Church Bells, Surrey Advertiser, Bolton Journal, Daily Record, Glasgow Weekly Free Press and Aberdeen Herald, &c., &c.*

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# Address in Medicine:

## MEDICINE AS A SCIENCE AND MEDICINE AS AN ART.

*Delivered at the Annual Meeting of the British Medical Association held at Ipswich on August 1st, 1900,*

BY PHILIP HENRY PYE-SMITH, M.D., F.R.C.P. LOND., F.R.S.,
CONSULTING PHYSICIAN TO GUY'S HOSPITAL.

MR. PRESIDENT AND GENTLEMEN,—It has sometimes been disputed whether medicine should be regarded as a science or as an art, but there is no doubt that the original meaning of "medicine," and of the corresponding term in other languages, is the art of healing. Medicine is so defined by Aristotle, and the art of curing, to which we may add the art of preventing, disease has all the characters of an art. It depends upon experience and skill, it deals with individual cases, and the perfection it aims at is practical, not speculative—the knowledge how to do and not the knowledge how things happen. Nevertheless, as practical navigation is founded on astronomy, meteorology, and physics, and as the art of agriculture rests on botany, geology, and vegetable physiology, so the art of medicine depends on the science of pathology, the practice of physic on the principles of physic. On the one hand, then, we must never forget that we practise an art. We must never allow theories, or even what appear to be logical deductions, or explanations however ingenious, or statistics however apparently conclusive, or authority however venerable, to take the place of the one touchstone of practical medicine, experience. We must never treat the disease without considering the patient, for the art of healing is the art of healing individually. Nor need we wonder if vast knowledge, profound learning, and the best scientific training sometimes fail to make a successful practitioner, since, besides adequate knowledge to save us from gross blunders and a strenuous endeavour to do our best for each patient, however uninteresting the case or however irksome and unrewarded our toil—besides these first requisites for our art there is ample room for those personal qualities which ensure success in every department of life: for power of observation and insight, for the personal influence by which a strong character will secure obedience and inspire hope, for the judgment which divines what kind of remedies are suited to each patient, what kind and of what strength, and for the sympathy which puts one in the patient's place and not only meets, but anticipates, his wants.

If, however, medical science without art is inefficient, medical art without science is not only unprogressive but almost inevitably becomes quackery. As soon as we treat our patients by rule of thumb, by tradition, by dogmas, or by metaphysical axioms we do injury to ourselves as well as to them. The bone-setter who is ignorant of anatomy and the wise woman who cures by charms are not more irrational or less successful than was the physician of the seventeenth century who, in obedience to the doctrine of signatures, advised an infusion of roses for hæmorrhage, and saffron for jaundice, and lungwort for consumption, or the astrologer who prescribed salts of silver, iron, lead, or mercury in accordance with the horoscope of the patient and the planet under which he was born. Not less mischievous, and, in the true sense of the word, unscientific, were the systems of medicine known as the "iatromechanical" and the "iatrochemical," which in their turn had their vogue. The Brunonian system, explaining all diseases as due to laxity of fibre, was no better; for indiscriminate use of "corroborants," or, as they would now be called, "tonics," is as irrational as that of hydropathy, of alcoholic stimulation, or of electricity. There is no such thing as a tonic or strengthening medicine. The only source of strength is oxidisable food, and bitter medicines can only give strength by improving appetite and digestion. The last of the systems of medicine founded on a dogma is homœopathy, of which the theoretical absurdity is somewhat concealed by the more obvious nonsense of infinitesimal doses. It, like other systems which preceded it, is not a rival to rational medicine, it is not a mistaken answer to a legitimate question but an attempted solution of a problem which does not exist and an attempted answer to a riddle which has no solution.

Apart from these exploded systems of treatment our profession has often suffered from lack of the scientific, inquiring, sceptical spirit and has often been led too easily by authority, by tradition, and by fashion. The reckless abuse of venesection in the last century and the former half of this century led to almost complete disuse of a valuable means of treatment and the misuse of mercury in the treatment of syphilis led to the denial of its unquestionable efficacy. Have we not seen the value of stimulants in a contest with fever lead to their indiscriminate use in almost every ailment? Has not the immense value of careful and thorough nursing led to its absurd exaltation to an independent place—as if good nursing was anything more than an intelligent carrying out of the physician's directions? Has not the remarkable power of electrical stimuli led to a blind, unscientific, and mischievous employment of this remedy as if it had some mystic power apart from its demonstrable physiological effects? May we not say the same of hydropathy, of massage, and of hypnotism? It is significant that the irrational exaltation of any of these particular modes of treatment into a panacea, while it begins in want of scientific intelligence, invariably ends in imposture and deceit. Our only safeguard against the spirit of quackery and the deserved loss of public confidence in the profession which it brings with it is continued recurrence to the scientific basis on which the practice of medicine rests. Our art is most satisfactory and efficient when most closely resting on science. The surgeon is continually guided by anatomy and mechanics in dealing with injuries and deformities. The physician is often able to apply his knowledge of chemistry and natural history to the direct and satisfactory treatment of disease. In general, medical science justifies itself in the same way as astronomy or chemistry by its predictions coming true. In particular the detection of plumbism, the diagnosis and cure of scabies and ringworm, the treatment of poisons by chemical antidotes, and of specific diseases by attenuated inoculations, are all instances of strictly scientific medicine. Nor can I refrain from citing the most recent and one of the most remarkable advances of our science in the discovery of the origin of malaria. This heavy tax upon national as well as individual vigour and happiness has been known and treated from the dawn of medicine; but although by a happy accident its efficient treatment was discovered it is only lately that by the combined labours of scientific physicians, Frenchmen, Italians, and our own countrymen, the origin of the disease has been discovered, the mode of its transmission traced, and the diagnosis of its several forms established. We know that treatment of symptoms without a diagnosis is always unsatisfactory and frequently worse, but we know also that diagnosis must rest upon accurate knowledge of morbid anatomy and of the natural history of the disease. Scientific medicine based on observation and experiment is always practical as well, but empirical medicine, whether based upon fanciful speculation or working by blind rule of thumb, is the most impractical thing that can be.

### PREVENTIVE MEDICINE AND ETIOLOGY.

That important and constantly growing branch of medicine which deals with the prevention rather than the cure of disease depends no less upon science, for tracking the dependence of one event upon another is the essence of inductive science. All efficient measures for the preservation of health, whether by individuals or communities, rest upon exact knowledge of the natural course of diseases. In fact, disease may be defined as the reaction of the human organism under conditions which make for its destruction. We must never forget that no irritant will cause inflammation in a lifeless skin; that no bacteria can produce fever without a nervous system to play upon; that no meal, however Gargantuan, and no potations, however deep, can produce their wonted effect without a stomach to react. The infection of small-pox, of diphtheria, or of tubercle exerts a very different influence upon vaccinated or unvaccinated subjects, upon one who has received and one who has not received the prophylactic serum, upon an organism which is predisposed to, or which is refractory against, the invasion of the enemy. How closely natural science is related to preventive medicine

is shown by the history of Jenner who was a naturalist, and of Pasteur who was a chemist. How dependent we are upon science is well illustrated by the history of myxœdema. The cretinoid condition in adults which was discovered by the clinical acumen of Sir William Gull, unintentionally produced by the surgical skill of Professor Kocher, and reproduced in animals by Mr. Victor Horsley, is now cured by the eminently scientific method due to Dr. G. R. Murray of Newcastle and to Dr. Hector Mackenzie of St. Thomas's Hospital. Such examples of accurate tracing of causation by observation and experiment admonish us to give up the perfunctory explanations which so often do duty for investigation. If we ascribe every inflammation to cold or if we acquiesce in the popular ascription of disease to overwork, mental strain, and the nervous tension of modern life, we shall make no progress in true etiology. I see many patients suffering from idleness, but few or none suffering from hard work. "Nerve prostration" from "worry" and "brain-tension" generally proves to be a decent veil to the effects of gambling and drink. Modern life is easier, safer, and smoother that it was 100 years ago. Our young men and maidens are healthier, stronger, better grown, less emotional, less hysterical, and sounder in mind and body than their great grandparents. I venture to think that the duty of a physician is not to flatter the selfishness of neurotic patients, but to inspire fortitude and to prescribe regular and steady work as the best cure for a thousand nervous ailments.

As another point in scientific etiology, suffer a warning against the assumption that because many diseases are now proved to depend upon the presence of bacteria this must be true of all. Science does not anticipate but waits for proof. We have complete scientific evidence, according to the criteria so well formulated by Koch, of the absolute and constant cause of anthrax, of relapsing fever, of tubercle, and of several other diseases in both men and animals; but we must not forget the preliminary difficulty of identifying the specific bacillus as in the case of enteric fever and diphtheria, or the difficulty of finding one of the lower animals which is susceptible to the disease as again in the case of typhoid fever and of cholera, or the difficulty of the same anatomical and clinical conditions being produced by different organisms as in the case of pneumonia and ulcerative endocarditis. Moreover, while in some diseases which are undoubtedly infective and specific no constant pathogenic microbe has yet been determined—as in typhus fever, measles, small-pox, and syphilis—we have, on the other hand, in the case or leprosy and of lupus examples of disease unquestionably specific and bacterial in origin, but very unlike other infective maladies in their clinical course and natural history. At present it is surely undesirable to speak of "the undiscovered microbes of rheumatism." Science has to do with proved facts alone, and our language should never outrun our knowledge.

### PROGNOSIS AND STATISTICS.

Another important branch of medicine—prognosis—depends as an art upon experience and insight. In making an individual prognosis shrewd observation is needed, and in this, of all branches of our art, it is true that—

> "Old experience doth attain
> To something like prophetic strain."

Yet here also rational prognosis rests on the science of statistics.

It is to Louis and the French School of the second quarter of this century that we owe the application of this important method for learning the natural history of disease—a method which not only supplies a foundation for prognosis but also a criterion of treatment. There are, however, many pitfalls in deducing conclusions from statistics. The morbidity or incidence of a particular disease upon the whole community is often confused with the mortality or the fatal cases of it compared with the population, and this last is confused again with the case mortality. The return of deaths from a certain disease in a town or kingdom has been applied to the population which existed eight or nine years before. The success of treatment of a disease occurring in barracks—that is to say, among picked subjects, all in early manhood, under strict discipline, and sent to hospital as soon as they are unwell—has been compared with that of other measures carried out in totally different circumstances. As examples of statistical misuse take these facts. The numerical returns of the lying-in charity of a London hospital led to the conclusion that more women were delivered of a second child than a first. A physician to inspire confidence in an anxious patient assured him that the mortality of the complaint from which he was suffering was only 1 per cent., and in answer to the further inquiry whether he had seen many cases, said, "Yes, I have looked at my note-books and find that I have seen 99, and they all recovered."

Apart from the corrections and limitations of statistical science we are sometimes in danger of forgetting that to be of any value statistics must be based upon cases which are both numerous and accurate. A small number of cases is useless. It led to the conclusion that myxœdema was peculiar to women and that insular sclerosis was rare in men. It was only after hundreds of cases had been observed that we learnt that infantile paralysis sometimes befalls adults and that osteo-arthritis may occur in children. This defect is remedied by time, but the defect of inaccuracy is without remedy. If diagnosis is perfunctory or careless or nomenclature is arbitrary and inconstant the more cases observed the less do they teach. It is disappointing, after the immense labour, time, and trouble devoted to the compilation of the official nomenclature of diseases of the Royal College of Physicians of London that although adopted in the navy and the army and by the Registrar-General it is constantly neglected, not only in conversation, but in systematic treatises. How can statistics be anything but misleading when made up of cases of one and the same disease under such different titles as "chronic rheumatism," "rheumatic gout," "rheumatoid arthritis," "arthritis deformans," and "osteo-arthritis"? Of what value are statistics when such different diseases as acute lobar pneumonia, broncho-pneumonia of children after measles, pulmonary tuberculosis, cirrhosis, and septic suppuration of the lung are all labeled "pneumonia"? One difficulty is put in the way of the practitioner in making an accurate return by the well-meant, but I think in practice unfortunate, provision for returning a primary and a secondary cause of death. Sometimes this corresponds to facts and gets over a difficulty; but if a patient dies from enteric fever there is nothing gained by adding congestion of the lungs as the secondary cause, still less do we learn from a return of "primary cause, a chill; secondary cause, debility." As a matter of fact, in looking through hundreds of death-certificates one arrives at the valuable conclusion that a frequent cause of death is "exhaustion" or "cardiac failure."

Another and opposite mistake is often made by attempts at too great precision in diagnosis. To say that a man died from apoplexy or from paraplegia is to state a fact within any competent practitioner's knowledge, but in the absence of a post-mortem inspection to say that he died from cerebral hæmorrhage or from myelitis is not a fact but a more or less doubtful inference. It is surely better to be satisfied with a statement that there were ascites and enlargement of the liver when the cause of enlargement is altogether uncertain than to be more exact and less true. I have again and again seen diseases the existence of which no experienced physician would assert without a necropsy returned as if they were common and easily recognised conditions—"pernicious anæmia," "syringomyelia," or "cancer of the lung." It would, I venture to submit, be a great improvement if the return of one cause of death only were demanded, if certainty and definite statements were aimed at rather than speculative minuteness or vague generalities, if a query were allowed to qualify deductions as distinct from observations, if the fact or the absence of a necropsy were always stated, and lastly, if the authorised nomenclature was always used.

### EXPERIMENTS IN SCIENTIFIC MEDICINE.

There is one aspect of scientific medicine so important that it must not be omitted—the necessity of experiments for the progress of pathology and through it for the prevention and cure of disease. It requires no argument to convince anyone who is the least acquainted with the principles of inductive science that experiment is no less necessary than observation. In physics and in chemistry this is obvious and is universally acted on. The same method is indispensable for the progress of animal and vegetable physiology, and to such practical applications of science as engineering, agriculture, and medicine. Nor can experiments be restricted to rare and solemn occasions. They must be carried on in large numbers by many different experimenters and under every variety of condition. Any attempt to abolish, to check, or to limit this experimental

work is, in the degree that it is successful, fatal to progress. Happily it can never be successful, for the impulse to increase knowledge of the works of creation is too deeply implanted in men. Investigation must and will go on by the only path which it can follow. The method which was preached by Francis Bacon and followed out by his great contemporary William Harvey, which was continued by Lower, Hooke, and Mayow in the early days of the Royal Society, and by Aselli, Malpighi, and Haller, by Hunter, Hewson, and Hales, by Edward Jenner, by Sir Charles Bell, by Johannes Müller, by Claude Bernard, by Ludwig, and by the many eminent physiologists and pathologists in Germany, in France, and throughout the civilised world—this method of investigation is absolutely necessary for the progress of our art. As its objects and methods are better understood it will secure the enlightened patronage of all who desire the diffusion of human knowledge and the further spread of human happiness. Fortunately this very progress of science has brought with it the removal of the one grave drawback which every right-thinking man must have felt to the benefit we reap from these experiments upon living animals. Inflicting pain upon the humblest of God's creatures is repugnant to our feelings, though no one (unless maintaining a thesis) would contend that it is wrong to exact the most painful efforts, or even the death from exhaustion, of a horse in order to carry help to a human being. The discovery of ether, chloroform, and other anæsthetics and the improved methods that we owe to the genius of Lord Lister have not only relieved the surgeon of the most repulsive part of his duties but have relieved the experimenter also. Except in the investigation of the action of new remedies or in the inoculation of infective diseases—both of which inflict discomfort of a limited degree and duration rather than anything that can be described as pain—the experiments of the laboratory, whether physiological, pathological, or therapeutical, are conducted without inflicting pain. The opposition to them has not succeeded and it is sure to diminish. However mistaken our opponents we are glad to find that there is even exaggerated jealousy to avoid anything approaching to cruelty. Our more candid critics may be assured that this legitimate object is already amply provided for.

### THERAPEUTICS AND SCIENCE.

Lastly, how far is the final end of our art—the cure of disease—directly dependent upon science? It rests, we know, upon that sure basis, but even in its practical carrying out we are bound to take with us a scientific spirit. The administration of digitalis for cardiac dropsy, of mercury for syphilis, and of thyroid extract for myxœdema is as truly scientific as prescribing a chemical antidote for poison or nitro-glycerine for angina pectoris, for it rests on a sure basis of observation and experience. But because in many cases we cannot as yet explain how remedies act we should not prescribe them without watching the effects of the experiment. The foolish cry against hospitals as "places where they experiment on patients" is meaningless just because it is true. Every prescription given, every operation performed on rich or on poor, is an experiment and ought to be watched with critical and scientific eyes. Here let me say that our practice is often ineffectual, not for want of an accurate diagnosis or of adequate means of treatment, but merely for want of the needful treatment being thoroughly carried out—a want which inevitably prevents success and therefore leads by a vicious circle to scepticism and want of thoroughness on the next occasion. A man who believes everything he is told of the action of remedies not only in the serious treatises of Garrod, or Wood, or Brunton, but in the partial assertions of advertising druggists, is sure to be unsuccessful, and, beginning with credulity, is apt to end in unbelief of such remedies as digitalis, and mercury, and opium. Such a man will prescribe and will never see that his prescription is carried out, and by the habit of giving multifarious mixtures of drugs in ineffectual doses he will allow what he has ordered to be taken three times a day for a fortnight to be really taken twice or only once a day for a week. He will prescribe exercise or lying down, abstinence or feeding, and never see that his directions are carried out. Who shall blame the patient if he ceases to believe in remedies to which the physician obviously attaches no importance? If we would sometimes prescribe no drug at all, but insist on abstinence from certain articles of food or drink or on more frequent or less frequent meals, on regular exercise or absolute rest, should we not secure more obedience from our patients when we prescribe really necessary drugs—just as a clergyman who desires to get a liberal collection would do wisely to begin by insisting on the sin of giving to charities which one believes to do more harm than good? How can we expect success in treating an obscure nervous affection if we apply galvanism to the spine without making sure of any physiological effect, nay, sometimes without making sure that a current is passing through the electrodes? or if we send a patient to drink the waters of such and such a fashionable watering place without remembering that there are two or perhaps three springs, one of them inert and the other perhaps injurious? What success can be anticipated if we order ointment for a weeping eczematous patch where it floats on the secretion and never reaches the inflamed tissue? or if we prescribe a lotion to be applied twice a day to skin well protected by its sebaceous secretion? We all know this half-hearted ineffectual mode of action in every-day life—we all know the man who wipes his shoes as a ceremony but never looks to see if he has got rid of the mud, the groom who feeds his horse but never sees whether the oats are eaten, and the nurse who washes the baby and still leaves wet places. Now much of this weak and therefore useless treatment comes of the indolence to which we are all prone and against which we must struggle as a temptation, but much of it, I am sure, is the offspring of incredulity which again springs from half-belief in quackery and imposture. Again, our ineffectual treatment often depends upon want of thorough diagnosis. Until we make up our minds whether a certain eruption is psoriasis or a scaly syphilide we shall never deal with it effectually. If we only suspect syphilis we shall give our remedies in too small doses and relinquish them if we do not see immediate benefit; whereas, if our diagnosis is real and thorough we shall use our remedies with confidence, increasing the doses, varying the form, but always persevering until we obtain the result we aim at.

Another source of failure in therapeutics is the legion of new remedies of which the biographies and eulogiums fill our waste-paper baskets and light our fires. It is astonishing to find apparently rational men forsaking the remedies which have been proved effectual by the experience of long past times and of every civilised nation to take up with drugs the very composition of which is often unknown, the use of which they have never learned, and of which the value rests upon the interested or credulous assertions of those who try to sell them. It takes a man long years of practice to learn how to prescribe opium. Why throw away this priceless knowledge to dabble in quack remedies the very praises of which inspire distrust? New remedies are, no doubt, discovered from time to time; in this generation we have had several, and all probable claimants should be tested in pharmacological laboratories and in hospital wards. But I am speaking of drugs which have never passed either of these tests. Surely in this age of advertisements which disfigure and defile the beauties of land and sea, of town and country, of literature and art, the most credulous must be convinced that costly and pertinacious advertisement is evidence of the lack rather than the possession of genuine worth. No, so far from our profession being carried away by this noxious habit let us hope that we may not only stamp it out from among ourselves but spread our own standard of conduct to other pursuits, until some day an honest tradesman shall be ashamed to push his sales by degrading self-laudation and the wealthy manufacturer shall shrink from offending the eyes and deafening the ears of his fellow-creatures by scribbling his name on blank walls and screaming it in every street.

In another popular branch of treatment it seems very desirable that the scientific spirit should be somewhat more freely admitted—I refer to treatment by baths and waters. That both are valuable modes of treatment no one will deny, but will anyone be so bold as to assert that it makes any difference whether our patients take a bath of water heated as it comes from the soil or heated to the same degree in a kettle? Who would pretend that so many grains of laxative or alkaline salts will act differently when occurring in natural solution and when dissolved in the same proportion in the druggist's shop? That benefit is obtained by change of air and scene, by early hours, regulated rest and exercise, and copious draughts of water is beyond dispute, but it is surely a pity when instead of rational explanation of our treatment our patients are deceived by unscientific and more or less untruthful statements.

Is it not a pity for so many of us to prescribe the made-up pills and mixtures offered us by wholesale manufacturers

instead of our own combinations? It leads our patients to ascribe their recovery, not to our skill, but to this or that "cure," and would it not be an excellent task for this great Association to set some of our skilled analytical chemists to strip the veil from mysterious remedies and tell us the exact composition of the many patent medicines some of which are inert and some injurious?

### SCIENTIFIC MEDICINE AND ITS WAGES.

Finally, we may ask whether scientific medicine obtains the recognition that is its due at the hands of the public. I believe that on the whole it does, or if in any degree it fails that the failure is due to ourselves. We cannot expect that any but the most educated and enlightened should look at our science or our art from a rational point of view. The popular notion of a medical man among out-patients is a man who has got some wonderful stuff in a bottle which will make them well. The more educated patients suppose that, knowing what is the matter with them, or as we say, having made their diagnosis for themselves, their first business is to choose the practitioner who has devoted his exclusive attention to the malady of which they suppose they are the subjects, or if they chance to suffer from what they call a "complication" of diseases they will consult a "heart specialist" to cure palpitation, a "throat doctor" to cure hoarseness, and a rising young surgeon at "a special hospital for diseases of the knees" to cure weakness in that joint; and if they should find no relief after these consultations—

"Flectere si nequeo superos, Acheronta movebo"

—they denounce legitimate medicine as useless, and go to the lowest impostor, and will afterwards tell their friends that after being "given up by the faculty" they found instant and miraculous relief from a single box of wind pills, a galvanic belt, or a pad of oriental herbs worn on the pit of the stomach. The fact is that we cannot expect that our patients should understand the scientific basis of medicine, the meaning of etiology, or the possible degree of efficiency of treatment. What they frequently ask of us is to allow them to continue the very course of life to which we have laboriously traced their symptoms and to give them some medicine which as if by a charm will break the inevitable sequence of cause and effect. They are slow to understand that this world gives nothing for nothing, and that we can only subdue Nature by obeying her laws.

There is, indeed, only one way in which we can obtain what we call our just recognition. Our services, however great, are services to the individual not to the community. It is therefore absurd for us to expect the honorific or the more solid rewards justly assigned to statesmen, to generals, or to judges; but from individuals we may expect—and I venture to say that as a rule we receive—the trust, the honour, and the gratitude which we have earned. Few of our patients will ever understand our principles or our methods, the reason for our successes or the explanation of our failures; what they do understand is personal character, honesty and sense, kindness and sympathy, and liberality and benevolence to rich and poor. These are the qualities which have always gained and still gain the respect of our fellow-men; and I venture to say that there is not a town in the three kingdoms where such respect is not widely and deservedly enjoyed by our profession. Go to any cathedral or almost to any parish church in England and you will see tablets bearing witness to that respect. If such men do not receive all the money they deserve they have money's worth. They spend their lives in constant exercise of the powers of the mind guided by the best feelings of the heart—a sure path to happiness. They find constant interest in their daily work, and when their work is over and the medical man becomes the patient—as we all shall one day—they can look back on a life spent in the service of God and man with gratitude to both.

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ACCOMMODATION FOR INFECTIOUS DISEASES AT BRISTOL.—The Health Committee of Bristol propose to submit to the Town Council a scheme for increasing the accommodation for infectious diseases. At present 147 beds are available, which is an average of one bed for 2300 of the population. The Health Committee suggest the extension of Ham Green Fever Hospital by the addition of the buildings originally intended and in the meantime temporarily to re-open Clift House, Bedminster, as a hospital in case the present hospital should not afford the necessary accommodation.

# Address in Surgery:

## THE SURGEON IN THE NINETEENTH CENTURY.

*Delivered at the Annual Meeting of the British Medical Association held at Ipswich on August 2nd, 1900.*

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MR. PRESIDENT, LADIES, AND GENTLEMEN,—The honour of being selected to address an Association which represents not only in numbers but also in dignity and repute the medical profession of this country is an honour of such a kind that I feel it can only be belittled by any expressions of gratitude I am able to command. I will do no more, therefore, than sincerely thank you for bestowing upon me a great distinction, and at the same time remind myself of the words of Goethe that "it is easier to bind a wreath than to find a head worthy to wear it." I am fortunate also in the circumstance that the occasion for the giving of this address should coincide with the concluding year of the nineteenth century. This century has been without a parallel in the history of human culture, and so far as the art of surgery is concerned has embodied an advance in principle and in practice which has been no other than revolutionary. I do not propose to attempt a review of the progress of surgery during the last 100 years. That work has been already done by abler hands. I would venture rather to deal with the progress of the surgeon himself during this period and with the advancement of the individual as an exponent of a grave profession.

There is little difficulty in fashioning a picture of England as it was 100 years ago. A sympathetic literature has left us with ample records of the men and women of the time and of the scenes they moved among. These records are rich with the littleness of personal affairs and are made living by the very gossip and petty commentaries of those who constituted society when the century was young. The life in England then was largely life spent in the country, in sleepy villages, and in sober self-esteeming county towns. The conditions were yet immature which led men to herd together in ever-extending cities and to swarm around oases of blackened chimneys and restless furnaces. Travelling was a luxury limited to the few. The many were content to live and die within sight of fields and spires which had been familiar from babyhood. They were apparently content to keep to their own stations in life, to take their notions of dignity from the squire and their conceptions of religion from the vicar, and to be satisfied with such excitement as was afforded by harvests and market days, by the movements of the locally great, and by the achievements and misdoings of their neighbours. In many a town it was no little event when the coach from London lumbered through the cobbled streets, or when a gang of pressed men marched by on their way to the sea, or when some soldier home from the wars made the little alehouse lurid with tales of arms and tragic lands. These simple folk were comparatively free from the fever of social ambition, from the almost savage conflict of modern commerce, and from the bewildering hurry of events which compass the peace of later times.

London was then not one-fourth of its present size; the great city ended towards the west at Sloane-street and beyond were quiet fields and meadows intersected by foot-paths, certain of which led to the hamlet of Kensington and the little riverside village of Chelsea. The lover of solitude would have found seclusion in the wide open country through which ran the Edgware-road. Paddington was still in the fields. Game could be shot about Westbourne Green and around the isolated farmhouse which marked the present settlement of St. John's Wood. Few would have cared to venture after dark across the bare fields of Battersea or to traverse the expanse of open land which stretched to the north of Tottenham Court. No railway terminus flaunted its hideous structure in the city's midst, and neither omnibus nor cab nor tram-car invaded the narrow streets. There was no telegraph and no telephone

The postal system was without form and void. The gayest streets were lit by oil lamps and the gloom by night was only equalled by the dirt by day. It was not until 1829 that the omnipotent policeman appeared upon the scene, and his early experience of the city's traffic was concerned with sedan chairs and cabriolets, with gaudy coaches and creeping wains, with linkboys and running footmen. It was not until 1821 that the English Channel was crossed by steamboats and that the hoys and coasting sloops, the dignified frigates and the stately East Indiamen began to vanish from the sea. Education among the mass of the people was a matter of little account and was to a great extent actually non-existing. The average man of the middle-class was quite content with a degree of learning which would do little more than satisfy the demands of a modern School Board.

As to the surgeon in those days, he was but a sorry element in social life. In the great towns and cities there were esteemed practitioners of surgery who were eminent by reason of their scientific work and their successful practice, but their numbers were few. At the commencement of the period under notice London was the centre of surgical activity, and the prominent exponents of the art at that time were John Abernethy, Henry Cline, Sir William Blizard, Sir Everard Home, Sir Astley Cooper, William Lawrence, and Charles Aston Key. The great John Hunter had died in 1793, having accomplished a work which marks an epoch in British surgery. In the provinces the most conspicuous surgeons were Edward Alanson of Liverpool and William Hey of Leeds, while in Edinburgh the position of the leading operator was held for many years by John Bell. A little later in the century we find among the names of prominent men in England those of Sir Charles Bell, Sir Benjamin Brodie, and the ingenious and learned Benjamin Travers. At the beginning of the century surgery on the continent was represented by such men as Sabatier, Deschamps, Boyer, and Larrey in France, Scarpa in Italy, Langenbeck, Chelius, and Dieffenbach in Germany, and Warren and Physick in America.

The surgeon or common practitioner in the village and town in these early days has been depicted by many writers. Possibly the most precise of these was Smollett who was himself in turn an apprentice, an assistant, a surgeon's mate, a practitioner, and a graduate in medicine. Smollett died in 1771. The account he has furnished of the leech of his time is tolerably discouraging. We find him an ignorant, illiterate, sordid creature, not above the allurements of money-grubbing and not without suspicion of dishonest practices and of a leaning towards the bottle. He was to a large extent a mere retailer of physic and in the public eye he ranked with the quacks and nostrum-sellers with whom he competed. There was probably some excuse for a writer who, in a discourse in the *New Monthly Magazine* for 1828, speaks of the general body of surgeons as a "cringing pulse-feeling race." Smollett's description could not have been true of all his brethren and there is no doubt he wrote with the bitterness of an unfortunate experience. Still, there can be little question that Launcelot Crab represented a type not yet extinct when the century began, and he must be taken as a forerunner of the cultured and esteemed general practitioner of the present day.

## I.—THE SURGEON AS AN ADVISER.

In noting the advances made by the surgeon during the century the first matter which may be dealt with concerns his position as an adviser to his patient. In reviewing this subject one cannot fail to be immediately impressed by the paramount influence which exact knowledge—or *a fortiori* the want of exact knowledge—has had upon the attitude of the medical profession.

It is obvious that the progress of any science is to be measured by the amount of absolute truths which may have been accumulated at a given time. The lack of knowlege, the mass of things unknown, represent merely a void to be filled. In the development of the science of medicine the element of the unknown has not remained so negative a factor, but has, on the contrary, proved to be a stimulus for a very luxuriant invention, the products of which have been tabulated as facts. There is no science outside our own in which there has been during the stages of development such an extreme disproportion between the amount of knowledge professed and the amount proved ultimately to be exact and sound. As an example of this may be cited the "humoral" system of pathology which, in spite of its ancient origin and its more or less obvious foolishness, held a position in medicine for centuries and struggled on, as a distorted and dying creed, even into modern times. This system, in its barest features, asserted that four cardinal humours occupied the human body and that practically all diseases, and certainly all tumours, were due to disorders of certain of these fluids. The pathology of this system was precise, dogmatic, elaborately classified, and full of detail. Upon it all treatment was founded and yet the whole of this precious system was a mere daring fiction, an ingenious fancy, the product of an impudent and unscrupulous imagery. The reason for all this lies more with the sick man than with the man of medicine. The sick man requires absolute exact knowledge from his doctor. He will accept neither possibilities nor doubts nor confession of ignorance. He will accept such from his lawyer and from his man of business, but not from the man who attends him in illness. It is no matter of wonder that in the past the physician has made good by fiction what he lacked in fact. The demands of the patient have been hopelessly beyond any powers of supply, and the deficiency has been furnished by the products of invention. It would seem that the less the man of medicine knew the more he invented and the more diligently he hid his little light under the bushel of a ceremonious and mystery-making treatment. The judicial wig, the academic ruffle, the gold-headed cane, the reflective snuff-box, and the Socratic air all made an effective covering for the few poor bones which formed the skeleton of his knowledge. It thus happens that a good deal of the pretence and humbug with which medical practice has been associated in the past has been forced upon the practitioner by the demands of unreasoning people. With such people the surgeon in the early part of the century had more largely to deal than he has to do at the present day, and yet his stock of knowledge could seldom meet the demands even of the reasonable. Hereby it came to pass that the puzzled man of medicine had to repudiate his ignorance, had to concoct such explanations and to construct such pathologies as could meet the sick man's inquisitiveness, and at the same time give a semblance of reason to an empirical and tawdry system of therapeutics. His utterances were tangled and confused by conceits of his own invention. A false attitude towards his patient was unconsciously forced upon him, and the folly of his pretence to an unattainable learning was apparent to all but the simplest. As an adviser, therefore, he spoke not as one having authority, and his position intellectually is well illustrated by the endless lampoons and caricatures to which he was publicly subjected.

The surgeon of the present day, as an adviser, is in a position which is so greatly improved that it could hardly have been imagined by his forbears of 100 years ago. He has, in the first place, to deal with a more enlightened public, with patients whose education to a large extent enables them to appreciate the nature of scientific problems, and with whom it is possible to discuss difficulties and to own to lapses of information. In the second place, the additions made to surgical lore have been so substantial that in many departments surgery has reached to the status of an exact science. There is, indeed, no longer need to call upon invention to supply such gaps as still indicate the unknown. An intelligent patient is satisfied with the assurance that practically nothing at present is known of the nature and causes of cancer. Such assurance is at least as valuable as the information provided at the beginning of the century, when the inquirer would have been told that cancer was "a diseased hardness"[1] or a "scirrhous degeneration."[2]

We have perhaps not quite shaken off the poor vestments of mummery with which ignorance was clad nor rid ourselves of forms of speech which still pass current for sense but which are little more than sounding brass and tinkling cymbal. We speak assuredly of the "constitution" and of "states of the system" and of the "supporting of the system." We sanction such terms as "poverty of blood," "diminished vitality," and "sympathetic inflammation." We profess to believe in "tonics," in medicines the swallowing of which will give strength, in "galactagogues," in "alteratives," in "astringents," and in "cooling physic." We profess, moreover, to "strengthen the lungs" and give "tone to the stomach." The modern surgeon can well afford to dispense with all this empty verbiage, since he can base his opinion upon demonstrated facts and can express it

[1] Samuel Cooper's "First Lines," London, 1807.
[2] South's "Chelius," 1826-46.

in plain words, free from any of the embellishments of a literary masquerade. For many reasons this is well.

## II.—THE SURGEON AS A MAN OF LEARNING.

The surgeon at the commencement of the century appears to have lacked most of what we now consider to be the essentials of the art, and we can only view with amazement the scantiness of his learning and the poverty of his equipment. He knew little more of inflammation than that it was represented by swelling, heat, redness, and pain. His knowledge of the causes of inflammation and of those dangers which follow upon open wounds was scarcely in advance of that professed in the days of Hippocrates. He had no glimmer of the possibilities of asepsis. He had no anæsthetics, no hypodermic syringe, no clinical thermometer, and no practical means of investigation in clinical chemistry. The very name "bacteriology" did not exist and the treatment of disease by prepared serums would have appeared to him as wild as the wildest therapeutic dream of ancient days. Although vaccination had been introduced in the last year of the eighteenth century the magnitude and nature of the principle it involved had not been appreciated. The microscope as an aid to diagnosis played no part in the equipment of the surgeon. He had neither laryngoscope nor ophthalmoscope and his acquaintance with otology, skin affections, and the diseases of women was at the best rudimentary and indistinct. He had only rude mediæval orthopædic appliances and he knew nothing of the lithotrite or of the array of instruments which are now in daily use in connexion with ophthalmic, laryngeal, cranial, and abdominal surgery. It would seem, indeed, that there was little for him to do but to open abscesses and sow the seeds of chronic septicæmia, to excise tumours of the structure of which he talked much and knew little, to amputate limbs for diseases he could not mend, and to draw blood whenever doubt existed as to what was best to be done. Conservative surgery was not understood and was certainly not practised, and plastic methods of operation had no place in treatment. Lord Thurlow, in speaking against the Surgeons Bill in the House of Lords in 1797, declared, with some basis of truth, that "surgeons in this country are not respectable men, their pretensions are unjust and illegal because they are not a scientific body."

In 1800 a man could practice as a doctor without passing an examination of any kind. Indeed, one itinerant practitioner is reported to have assumed the title of assistant surgeon on the ground that he had served an apprenticeship to the crutchmaker of a hospital. The examination for the diploma of the Royal College of Surgeons was by *vivâ voce* only. There was no examination of patients and no dissection of the subject. Candidates were required to produce evidences of apprenticeship, of attendance upon anatomical and chirurgical lectures, of having performed dissections, and of having attended the practice of a recognised hospital for a period of six months. In 1813 the period of compulsory attendance at a hospital was raised to one year. The standard of knowledge, however, does not appear to have risen in corresponding proportion, for in 1822 the then President, Sir William Blizard, felt called upon to address the Court of Examiners on certain "tokens of remissness in teachers and of inattention in students" which had been forced upon his notice. He regrets that candidates are commonly ignorant of the situation of nerves and blood-vessels, of the disposition of the muscular fibres of the heart, gullet, and stomach, and of the diameters of the intestine. He further adds that "the deficiency of candidates in physiological information is far more remarkable" and enters into such detail as the following: "Often do we find them," says the President, "ignorant of the reasons why the ribs in inspiration are, from their figure and muscular connexion, moved upwards and outwards, of the systole and diastole of the heart, of the process and intention of respiration, of the nature and distinction of the pulse, of the distinct offices of divers muscles, of the figure of the lens and uses of the humours of the eye in vision." He concludes by deploring that there is a "correspondent darkness of mind relating to the symptoms, seat, causes, and rational treatment of diseases and injuries," and furnishes a catalogue of items with which candidates do not appear to have been commonly conversant, although the list presents such matters as the signs of fractures and dislocations, the symptoms of compression and of inflammation of the brain, the consequences of fractured rib, and the *rationale* of the symptoms of hernia.

At the commencement of the century there was, indeed, no systematised medical education. The training of the surgeon was paltry, casual, and inefficient. His preliminary education was miserably meagre. It was necessary that he should be able to read and write and pretend to some smattering of Latin. He became an apprentice, and in that menial capacity gleaned what he might from his master and from attendance upon sundry lectures. So far as hospital practice was concerned, his attitude as a learner was well expressed by the phrase, "He walked the hospital." The institutions which he thus attended for a period of six months were in a state of rude squalor as regards administration, sanitary arrangements, and nursing, and well deserved the abuse which was lavished upon them.

## III.—THE SURGEON AS AN OPERATOR.

During the nineteenth century the surgeon as an operator passed through a rapid metamorphosis and has now reached at least the level of the unexpected. It may have been supposed that there is little to be learnt in the way of using a knife which had not been learnt during a period of over 1800 years, for there were surgeons before the Christian era. Yet time has shown that even in 1800 there was a technic in operating which was as little like the technic of to-day as are the slashes of a cutlass when compared with the studied movements of a foil. It may have been surmised that 20 centuries would have exhausted the methods by which a limb could be cut off. Yet in 1800 modes of amputation were in vogue which are now regarded as uncouth. It cannot even be said that the commencement of the century saw in use a ready and efficient means of checking bleeding, although that measure represents the most elementary of the surgeon's duties.

The operator of olden times certainly possessed many qualities which are now falling into abeyance and which cannot pass away quite unregretted. The success of his craft depended largely upon his daring, upon the alertness of his eye, the steadiness of his nerve, and the rapidity of his movements. He stepped into the arena of the operating theatre as a matador strides into the ring. Around him was a gaping audience and before him a conscious victim, quivering, terror-stricken, and palsied with expectation. His knife was thrust through living flesh and acutely-feeling tissues, and the sole kindness of his mission was to be quick. In spite of moans for mercy from gagged lips the knife had to move on its way steadily and, undeterred by struggles and bursts of hæmorrhage, the blade must needs pass without faltering or sign of hesitancy. There is less need for such qualities now. The dramatic element in surgery has gone with the men who unconsciously fostered it. The operating theatre of the present day has lost its horrors and has changed from a shambles to a chamber of sleep. The surgeon's hand can move with leisurely precision and theatrical passes of the knife are favoured only by those who have not yet learnt that mere brilliancy is no measure of success. It may be that the present-day surgeon is a loser in that he has less need for those dashing qualities which were essential to the operator before the days of anæsthetics; but, on the other hand, he has gained much in the direction of the sympathetic handling of his patient and in the culture of gentleness. It is little wonder if the older surgeon became rough and stern, if his sense of feeling became dulled, and if the sympathetic side of his nature suffered some suppression. Indeed, contemporary accounts are apt to represent the operator of pre-anæsthetic times as rough almost to brutality and as coarse both in his conduct and in his utterances. His language, it would appear, savoured of the cockpit, and the hasty flourishing of his knife led occasionally to unintended mutilations.

Within the compass of some thirty years the whole state of affairs has changed. Consideration for the patient and for the patient's sensibilities have become a matter of the first moment and the operator has learnt that his work is best done if done with gentleness and tact, and that haste and bluster, coarseness and coarse handling are out of place around the operating table. A striving after effect at any cost has ceased to be an element in the surgeon's work. Success is no longer to be measured by the number of minutes occupied in the amputation of a limb, but by the state of the patient many days after the measure has been completed. The triumph of the older surgeon was immediate and scarcely reached beyond the arena of the theatre. The triumph of the modern surgeon is deferred and is found in the operation ward and in the convalescent home. Still, the

fact remains that it is easier to be a surgeon of some degree at the end of the century than it was at the commencement, since in the earlier days the qualities needed for success in operating were rare and of a kind not readily to be acquired.

On passing more into detail one notices that beyond these general changes in the attitude of the operator there have been others which owe their existence to special advances in the surgeon's art. Prominent among these may be named: (1) an improved knowledge of anatomy; (2) a readier method of arresting hæmorrhage; (3) the employment of anæsthetics; and (4) the introduction of antiseptic measures.

1. *An improved knowledge of anatomy.*—Among the surgeons of the early part of the century there were many competent anatomists and not a few who could lay claim to be deeply versed in that science. Among the latter were such men as Astley Cooper and William Lawrence. Still, in the education of the average surgeon the study of anatomy did not play a prominent part. Anatomy was largely taught by means of public demonstrations. The teacher dissected and the student looked on, much as he did in the days when Rembrandt's great picture of Nicolaus Tulp and his pupils was painted. The knowledge required was scant and superficial and had little practical basis, and no methods of teaching existed which can in any way compare with those in vogue at the present day. The science of anatomy was well advanced at the commencement of the century, but it was not taught to the common student. Quain's "Anatomy," first published in 1828, contained a very sound account of the human body, although the whole work was then represented by a single small volume of 700 pages which was without illustrations. The facilities for acquiring a practical knowledge of anatomy were not only few but were hampered by many sordid difficulties. Anatomical schools were regarded with disfavour and were actively discouraged. They were viewed with unconcealed suspicion by the public and were surrounded by a ghoulish romance in which rifled graves and unseemly dealings with the hangman played a pungent part. Indeed, the teacher in an anatomical school found himself involved in a squalid and disreputable traffic, very uncongenial to any earnest man of science. Among the many qualifications needed for success in operating, a practical knowledge of anatomy as acquired by repeated dissection is conspicuous. Such knowledge as the surgeon needs is to be learnt not from books but from the patient use of the scalpel and forceps. The dissecting room is the surgeon's nursery. The tissues of the body are the material with which he works, and he must needs know them as the sculptor knows the marble he chisels and the potter the clay he moulds. It is no matter of surprise that the older surgeon often lacked confidence in operating, that he failed in initiative, and clung only to formulated methods, and that a departure from accepted lines was attended with fear and hesitancy. Ignorance encouraged in the rash heroic passages of the knife and in the timid an over-cautious and dangerous fumbling. And as to this it is probable that in pre-antiseptic days as much ill attended the nervous fingers which were creeping clumsily into the unknown as followed the reckless operator who essayed to draw his bow at a venture.

2. *A readier method of arresting hæmorrhage.*—At the commencement of the century the means employed for the control of bleeding were numerous and were represented by such familiar measures as the ligature, the sutures, styptics of many kinds, and the actual cautery. In applying the ligature the vessel was picked up by forceps and tied as at the present day. The instruments used were those of Dieffenbach, Assilini, and Liston. The older types of instruments were not readily applied, or at least required time in their adjustment. The bleeding from the vessel was not necessarily controlled by the forceps when in position. The general rule in amputation was to apply a tourniquet and to ligature the individual arteries after the limb had been removed. In the excision of tumours the practice was recommended of securing each vessel as it was divided. When it is remembered that operations were carried out without anæsthetics it will be understood that the older surgeon had an absolute terror of bleeding and was driven to undesirable shifts to avoid the need of facing it. He was indeed a coward where hæmorrhage was concerned, and there was reason for alarm when a conscious patient was struggling and showing signs of exhaustion and when the means for staying the stream of blood were slow of application. We find, then, that hæmorrhage was expected and that a liberal loss of blood was considered to be a necessary adjunct to every major operation. Tourniquets were employed freely and with considerable harshness. Raw surfaces were bathed with styptic solutions which were often destructive in their action or at least opposed to primary healing. The actual cautery with which to sear the bleeding area was in some request, and every well-equipped operating theatre kept its stove and its cautery irons in constant readiness. The least pleasant evidence of the surgeon's dread of hæmorrhage and of his inability to deal with it was afforded by the treatment of certain nævi in infants and children. These growths were strangled by ligatures which slowly cut their way through the skin and neoplasm assisted by a benevolent process of suppuration. A painful ingenuity was expended upon amplifications of this measure, the cruelty of which was but little mitigated by the introduction of chloroform. Allied to this procedure was the *écraseur* of later date. Its invention was due to Chassaignac, and it was freely used in England until quite recent times. It was employed for the removal of growths of various kinds, but its most baneful employment was as a means for excising the tongue. It is scarcely to be believed that within the period of the introduction of anæsthetics the tongue has been torn out of the mouth by means of a loop of hemp or wire which strangled it at its root. The *écraseur* will remain in the archives of surgery as the insignium of the incompetent and the timorous and will stand out as a blot in an otherwise bright period of progress and enlightenment. The shadow of this mediæval instrument has been slow to fade and as the ovarian clamp and the serre-nœud it clung about the confines of reasonable surgery and hindered the development of the operations of ovariotomy and excision of the uterus. At the present day the surgeon has little dread of hæmorrhage and the confidence he possesses is based upon good grounds. In the first place he makes larger use of the precautionary ligature of vessels. It has become a commoner practice to apply a temporary or permanent ligature to a main artery before a part supplied by that vessel is excised. This is carried out frequently in dealing with large and vascular tumours. In removal of the tongue, moreover, an excellent method is that in which a preliminary ligature of both linguals in the neck is carried out. In removing the uterus through an abdominal incision the question of hæmorrhage is disposed of by an early ligature of the ovarian and uterine vessels. A further example of this mode of anticipating bleeding is afforded by that method of hip amputation which is known as the anterior racket. Here the main vessels and even the main branches are secured before the flaps are cut, whereas by the older plan the vessels were severed with the flaps and were tied after the limb had been removed. In the second place the latter-day surgeon is operating upon an anæsthetised patient and can proceed with slowness and deliberation. The importance of this fact in connexion with the present subject cannot be over-stated. In the instances which have been just cited an excision of the tongue in a conscious patient would be greatly extended by the twofold operation in the neck, and whereas the amputation of the hip by transfixion occupied in able hands but a minute or so, the operation by the anterior racket is tedious and involves relatively much expenditure of time. Thirdly, the treatment of hæmorrhage has been to a remarkable extent simplified, if not indeed rendered complete, by the introduction of the pressure forceps of Sir Spencer Wells. These little instruments represent the most valuable addition which has ever been made to the surgeon's appliances. It is not uncommon in operations of a certain type to have 20 or more pairs of pressure forceps applied to the surface of the wound at one time. This represents a degree of possible bleeding which in the old days, when every vessel had to be separately tied, would have been replaced by actual bleeding of a fatal type. No instrument has brought with it so great an assurance of security or has done more to extend the area of safe operation.

3. *The employment of anæsthetics.*—The value of the anæsthetic and the radical and beneficent transformation it has effected in surgical practice call for no comment in this place. The changes that the discovery has wrought in the personality of the surgeon, in his bearing, in his methods, and in his capability are as wondrous as the discovery itself. The operator is undisturbed by the harass of alarms and the misery of giving pain. He can afford to be leisurely without fear of being regarded as timorous. To the older surgeon every tick of the clock upon the wall was a mandate for haste, every groan of the patient a call for hurried action, and he alone did best who had the quickest fingers and the

hardest heart. Time now counts for little and success is no longer to be measured by the beatings of a watch. The mask of the anæsthetist has blotted out the anguished face of the patient and the horror of a vivisection on a fellow-man has passed away. Thus it happens that the surgeon has gained dignity, calmness, confidence, and, not least of all, the gentle hand. Anæsthetics have, moreover, greatly extended the domain of surgery by rendering possible operations which before could have been only dreamt about, and by allowing elaborate measures to be carried out step by step. The introduction of anæsthetics has not only developed surgery but it has engendered surgeons. It has opened up the craft to the many, for in the pre-anæsthetic days the qualities required for success in operating were qualities to be expected only in the few. In the technique of established operations chloroform and its allies have led to advantageous changes. This is well seen in the case of amputations. In the olden days that method of removing a limb was best which was the most speedy. A prominent position was on this account given to the cutting of flaps by transfixion, a long narrow blade being used for the purpose. This rapier-like instrument required great skill in handling and in the grasp of the feeble it was a fearsome weapon. Muscles were sliced through in such a way that the widest possible section of their substance was often made. Vessels and nerves were, in like manner, cut almost in the direction of their long axes, and the resulting incision gave the maximum area of wounding. At the present day transfixion is abandoned and the murderous amputating knife has found its way into the museums of the curious. Muscles can now be severed at right angles to their length or in such a way as to secure the smallest possible surface of section. Vessels and nerves are cleanly divided in the same manner and the resulting area of the wound is reduced to a minimum. This difference in methods is vividly illustrated by amputation at the hip-joint.

4. *The introduction of antiseptic measures.*—Of the great work of Lister and of the introducing of the antiseptic treatment there is no call to speak at this time. When the century was young the touch of the operator was the touch of a tainted hand; the balm he poured into the wound was poisoned and he himself undid the good his science strained to effect. It is sad to think that behind the earnest man with the ready knife there stood a shadow which rendered hopeless his kindliest effort and which only too often proved to be the veritable shadow of death. The change has been great, and its greatness lies in its littleness, for it is bound up with no more than this: that the surgeon has learnt to be clean. The operator of days gone by would have turned with some petulance from the grand simplicity of the counsel to be clean. He ever sought some means of mighty bearing to rid him of the incubus of failure, and, like Naaman of old, he would have hesitated to dip in the Jordan of antisepticism to be free of his leprosy. The surgeon has not only learnt to be clean but he has become aware of the potency of little things. The demands of the antiseptic treatment have made him minutely careful, distrustful of any aid that he cannot control, and suspicious of any semblance of error. It is possible that the abandonment of the old easy order of things has been followed by a too slavish devotion to mere ceremonial. The remarkable and extravagant preparations with which some surgeons now approach an operation, the cleansings and the washings which precede the laying on of hands, smack a little of fetich worship and foster the cult of the surgical Pharisee. On the other hand, these performances, this "making clean of the outside of the cup and platter," seem to give assurance and to render the devotee thankful that he is not as other men.

## IV.—THE SURGEON IN THE FUTURE.

Circumstances in the tendencies of to-day foreshadow to some extent what may lie buried in the future. The changes which have swept over the world of surgery have extended the possibilities of the art and have, at the same time, added a host to the ranks of those who practise it. Some 30 years ago the roll of such as could claim to be accomplished operators was very small. The greater deeds of surgery were limited to cities and the larger towns. The general practitioner seldom took up the scalpel except in minor necessities. Even in London the list of consulting surgeons was meagre. In the hospitals of the metropolis the number of operations performed in the year would be less than is now the quotum for a month.

But here at the close of the century the disposition of affairs is wholly altered. Where there was one surgeon there are now ten, and throughout the breadth of the land and to its utmost limits the work of the operator has extended. The more ambitious performances of surgery are no longer restricted to great centres but are carried out in the little town, in the cottage hospital, and even in the cottage itself. The general practitioner is laying claim to operate upon his own patients and is carrying out his intention in no hesitating manner. The days of the great operator, of the one man to whom all came who could, are rapidly passing away. Indeed, the practice of pure surgery, which was at one time limited to the prominent few, is now becoming common to the many. The man who excels conspicuously as an operator will always attain such eminence as his ability deserves, but the exclusiveness of the practice of operative surgery is quietly vanishing with the century. This change is well. It is a change that is inevitable. The democratic movement is the active power of the day, and that an oligarchy in the community of surgeons should be replaced by an earnest democracy is precisely in accord with the spirit of the times. In every great change there must—at first at least—be some undesirable developments, and it is impossible to deny that the wider distribution of the practice of operative surgery may lead to the occasional performance of major operations by men who are not justified, either by experience or by training, in undertaking them. Furthermore, there is, among the signs of the times, some evidence that the reaction in the matter of operative surgery is to some degree extreme and that we are in danger of passing from the policy of doing too little to the policy of doing too much. Operations we know were too few in the past, but there is some foundation for the impression that they are occasionally too frequent in the present.

One other matter which looms out of the future will suffice to bring this subject to a close. So many have been the artificial aids to clinical investigation which recent science has introduced that it comes to be a question whether the natural acumen of the surgeon will not deteriorate in proportion as he fails to encourage that particular learning which clings to the finger tips of all great diagnosticians. That there will be such a decadence is beyond doubt. The loss is to be deplored, for if there be one point of excellence which stands before all in the qualifications of the perfect surgeon, it is bound up in that refined sensibility, that critical perception, that inestimable cunning, which lies in the surgeon's touch.

Examples of the directions in which this loss will be felt come readily to mind. A considerable amount of skill, for example, is demanded in the examination of complex fractures, of lesions of deep-seated bones, and of injuries about joints. What was to be learnt of these troubles had to be acquired by a tedious manipulation demanding considerable refinement. The surgeon who has now to deal with such conditions can afford to dispense with a prolix examination and can submit the inquiry to a demonstrator of the Roentgen rays. The skiagraph, although its value is much exaggerated, embodies a substantial gain, but it is to be discounted by the loss of the great element in education which it is slowly replacing. An obscure tumour—to take another instance—presents itself and no longer is the surgeon compelled to trust to the acuteness of his inquiry and his patient review of all the physical details of the mass. For what his ready fingers may have learnt can be substituted the findings of the exploratory incision, the trocar, and the aspirator. Here once more an advantage is minimised by a loss. Or, again, an abdominal swelling is brought under notice. Its features are obscure, but much of the uncertainty of outline can be dissipated by a cultured hand which, with infinite patience and repetition, has learnt to construct a reality out of a shadow. It may be said that it is needless to persist in bringing this much elaborated means of inquiry to further perfection since the problem is at once to be solved by an exploratory laparotomy. By such little operation a great advantage is gained but an opportunity to add to one of the most refined forms of learning is lost. The value of the exploratory incision is beyond question, but among the signs of the times it is impossible not to notice a tendency to resort too readily to this means of solution. The Gordian knot, according to the legend, was ultimately cut, and it is a question whether the sum of human ingenuity would not have been substantially increased if attempts to untie the noose had been more diligently persisted in. In another example let it be supposed that a suspicious ulcer presents itself for diagnosis. In such case is it well to devote time

to a precise and tedious inspection of its edges and to a careful tactile examination of its base and to check what is discovered by results laboriously gained from like inquiries? Is it not simpler to take a scraping of the affected surface and to submit it to a microscopist, and thus to be spared a method of examination which, although it may not give final results, yet represents an opportunity of furthering a priceless accomplishment?

Finally, there are cases which present symptoms hard to interpret at any superficial inquiry. Is it worth while in such to undertake an exhaustive critical research and to submit the whole to a trained judgment? The quest would no doubt develop habits of observation and powers of weighing evidence; but the process is slow, and an inquiry carried out in a bacteriological laboratory will clear up all doubts and at the same time dispense with the efforts of a cultured sense. Those, therefore, who are concerned with the education of the surgeon of the future would do well to cherish still this ancient power and to foster a memory of the fact that surgery is, in its very essence, a handicraft, and that in all that he does the surgeon's great endeavour should be to make his own hands self-sufficing.

It is sad to think that this hardly-acquired faculty dies with the possessor of it, and never was this more vividly presented than it has been by the loss which surgery has sustained in the death of Sir James Paget. One can picture the great surgeon composed in his last sleep, and can see the once busy fingers lying lifeless on the white sheet, and then comes the wonder of the wealth of learning, at the exquisite cunning, at the refined sense which lay dead in the dead hand. No written book can hold a tithe of the dainty knowledge which had been mastered by those subtle fingers, and no record, however laboured or however loving, can tell of the power which once rested in that magic touch. An individual loss does not, however, hinder the general tide of progress. Advance in such a work as ours depends upon the uneventful work of the whole body and is only accentuated by the achievements of the prominent few. The movement is the movement of a multitude in which individuality is, at a distance of time, little to be distinguished and in which personal eminence contributes a smaller factor than the present is ready to acknowledge. Those who stand forth as the leaders of the advance are merely the elect of the common body and the representatives of a wide intellectual franchise. Even he who startles the world as a discoverer has often done little more than give expression to what was already nascent in the multitude. So as one great surgeon after another drops out of the ranks his place is rapidly and imperceptibly filled, and the advancing line moves on with still the same solid and unbroken front. The continuity of progress is undisturbed by the uncertainties of human life, and, as one writer has well expressed it—

"No work begun shall ever pause for death."

# A CASE OF MENINGO-MYELITIS WITH BACTERIOLOGICAL EXAMINATION OF THE SPINAL CORD.

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THE acute onset and rapid course of many cases of meningo-myelitis are very strong indications of the infective nature of the disease. Several cases have been recorded in which a bacteriological examination of the spinal cord and meninges has revealed the presence of a micro-organism endowed with pathogenic properties. The total number of such cases is small and so we consider that the following case is worthy of being published in spite of the incompleteness of both the clinical record and the bacteriological examination.

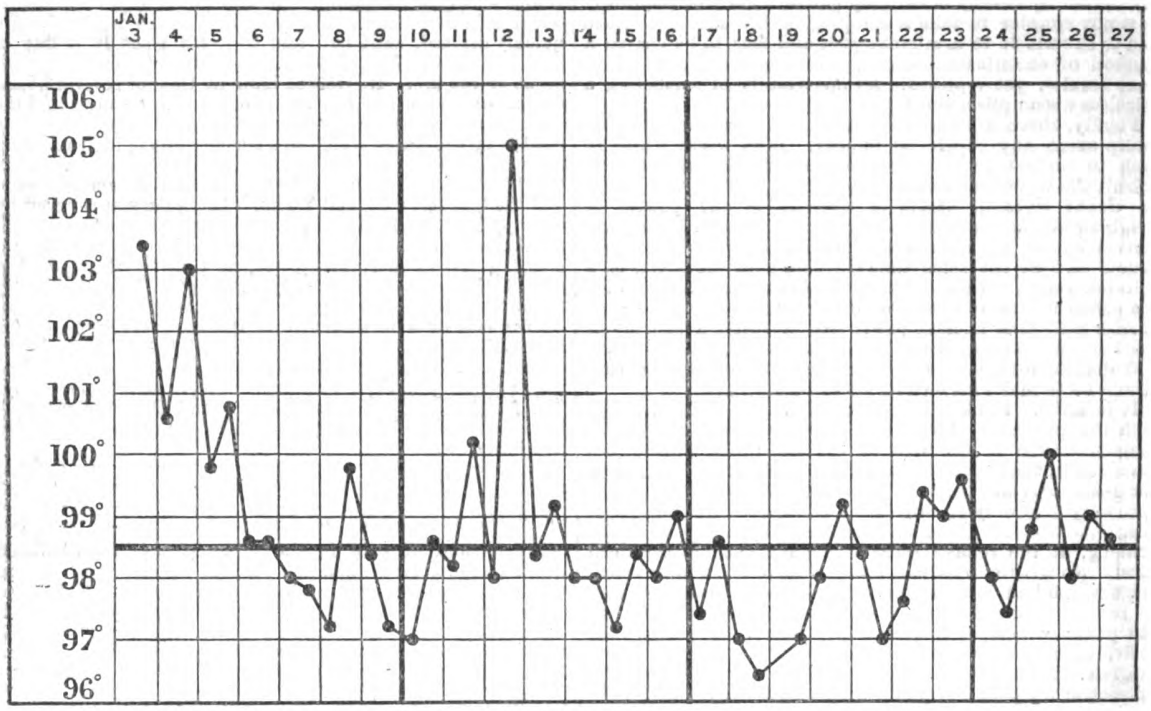
A single man, aged 29 years, was admitted into the Newcastle Royal Infirmary on Jan. 3rd, 1899, on account of complete loss of power and sensation in both lower limbs. A month previously when in his ordinary good health he was wakened in the middle of the night and called out to help at a fire in the village in which he lived. He quickly dressed, went out, and took his place in a line of men which was formed to pass buckets of water up to the scene of the fire. He worked hard at this for several hours, during which he got hot and exhausted in his arms and the upper part of his body, while his feet and legs were wet and chilled by the water which was accidentally spilled on them in rapidly passing on the buckets filled with water. After this he was seized with a severe pain in the lumbar region and the legs felt cold and numb. The pain was relieved by the application of blisters, but the sensation of cold and numbness persisted, being accompanied by a steadily increasing loss of muscular power, so that by the end of a week both legs were completely paralysed. This was shortly followed by some difficulty in micturition with constipation. At the end of a fortnight from the commencement of the illness there was retention of urine with loss of control over the rectum. Since then the regular use of a catheter had been necessary and the fæces had been passed unconsciously. The family history was unimportant and the only previous illnesses from which the patient had suffered were pleurisy and influenza.

On admission into the Infirmary a month after the beginning of his illness the patient lay on his back in bed complaining of a sensation as if a girdle were tied round him midway between the ensiform cartilage and the umbilicus and of pain in the lower part of the abdomen which was increased when the bladder became full. There was complete paralysis of both lower limbs and of the abdominal muscles as high as the umbilicus, combined with loss of all forms of sensation up to the same level. There was no control of the bladder, which if not emptied by means of a catheter filled and then overflowed. The control of the rectum was also lost, the fæces being passed unconsciously into the bed. The motor power of the muscles of the arms and neck and of the trunk above the level of the umbilicus was retained and the sensation of the skin covering these parts was not affected. The plantar and superficial abdominal reflexes up to the level of the umbilicus were absent, but the cremasteric reflex was still present. There was no ankle clonus; the knee-jerks were still present but the response was very slight and feeble. There was a large bed-sore over the sacrum. The urine was acid in reaction, but had a very foul smell and contained both blood and pus. The temperature on admission was 103·4° F.

During the first few days that the patient was in the Infirmary the condition remained much as above and the temperature fell to normal (*vide* Fig. 1). On the evening of the 11th there was a severe rigor, the temperature rapidly rising to 105° at 8.30 P.M. On the following morning the temperature was normal again, the pulse was 150, and the respirations were 28. The patient complained of difficulty in breathing and of pain in the lower part of the left side of the chest and at the epigastrium. The upper part of the chest expanded freely, but the expansion of the lower part was deficient. There was general tenderness on pressure all over the abdomen, which was most marked over the kidneys. The knee-jerks were still present and a slight plantar reflex could be obtained on the left side but not on the right. On Jan. 15th the patient began to hiccough and this continued for a week. On some days the hiccough only ceased for one hour out of every three or four and the hypodermic injection of the fifth of a grain of morphia only controlled it for a couple of hours at a time. On the 17th the upper limit of anæsthesia was found to run midway between the umbilicus and the centre of Poupart's ligament, at which level it subsequently remained. The pulse was 82. The abdomen was distended but resonant all over. The left plantar, the cremasteric, and the patellar reflexes could still be obtained, but the response was very feeble. The patient gradually got worse and on Jan. 24th the muscles of both legs were found to be much wasted, soft, and toneless. The plantar reflexes had disappeared and no knee-jerks could be obtained. After this the patient gradually sank and died at 11.30 A.M. on Jan. 27th, seven and a half weeks after the commencement of the illness.

*Necropsy.*—Unfortunately, no full post-mortem examination was allowed and leave could only be obtained to open the spinal canal and remove the spinal cord. This was done on Jan. 27th at 5.30 P.M., six hours after death. As soon as the spinal canal had been opened some of the lymph which was

FIG. 1.




Temperature chart of a case of meningo-myelitis.

lying on the surface of the dura mater in the upper dorsal region was raised from the dura mater by means of a pair of sterilised forceps, a platinum wire was pushed up between the two, and stroke cultures made on agar-agar and on serum-agar tubes. In this manner inoculations were made direct from the under surface of the layer of lymph, where it lay in contact with the dura mater. The dura mater was then opened with sterilised instruments and stroke cultures on agar were made in the same way from the surface of the pia mater in the mid-dorsal regions. Transverse cuts were then made across the cord with a sterilised knife in the dorsal region on a level with the roots of the fourth and fifth dorsal nerves, and also in the lumbar enlargement. A sterilised platinum loop was then pushed into the substance of the cord itself from the freshly-cut surface in each of these situations, and stroke cultures were made on agar-agar and on serum-agar tubes. After the spinal cord had been removed it was found that there was a communication between the spinal canal and the large bed-sore over the sacrum. This communication may, however, have been accidentally made at the time of the necropsy.

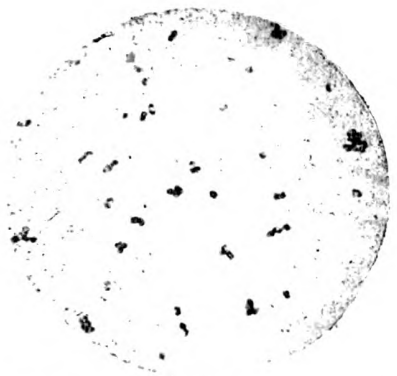
All the tubes were placed in the warm incubator at 37° C. on the same evening. After hardening, sections of the spinal cord from the dorsal region were cut and stained with picro-carmine and then by Weigert's modification of Gram's method. It was found that if the washing with aniline oil was carried on until all the violet colour had disappeared from the substance of the cord and pia mater the micro-organisms were also decolourised, but when the aniline oil was removed while the violet colour was still distinguishable to the naked eye in the pia mater the micro-organisms were well stained. In sections thus prepared large numbers of a small oval bacillus were seen in the pia mater. In some places the bacilli were stained at the extremities and clear in the centre, closely resembling diplococci. The bacilli were lying singly or in irregular chains. One or two longer rod-shaped forms were seen, but with this exception no other forms were found. The oval bacilli were also seen in small groups here and there in the white substance of the cord itself and separated from the pia mater, but the further from the surface of the cord the fewer the groups became.

*Cultures.*—The tubes were inoculated and placed in the incubator at 37° C., as already mentioned, on the evening of Jan. 27th. No visible growth had appeared on the 28th, but on the morning of the 29th, after the tubes had been about 40 hours in the incubator, colonies had appeared in all the tubes except in one tube of serum-agar inoculated from the substance of the lumbar enlargement. In this tube, however, a growth had also developed by Feb. 1st. Ten tubes in all had been inoculated from the meninges and from the cord itself. In eight of these the growth proved on microscopical examination to be a pure culture of a short oval bacillus. The other two showed similar growths, but in one of them it was mixed with a few larger and longer bacilli, and in the other with some chains of streptococci. As far as naked-eye appearances went the growth in each of the pure cultures had the same appearance. On microscopical examination slight differences in appearance were found in the different cultures. In all the bacillus was short, the length not being more than double the breadth, though there was some difference in the actual size in different specimens. Slight differences were also due to different degrees of staining; in some cases the oval bacilli were stained all through, in others the ends only were stained and the centre clear, so that they resembled diplococci. We consider, however, that they are rightly described as short oval bacilli with polar staining. The appearance is well shown in Figs. 2 and 3, micro-photographs which were kindly taken for us by Mr. H. R. Spitta. Fig. 2 was taken from a film prepared from a pure culture obtained directly from the substance of the spinal cord on a level with the roots of the fourth dorsal nerve. Fig. 3 was taken from a film preparation from a pure culture obtained from a guinea-pig's blood after subcutaneous inoculation with a broth sub-culture obtained from the growth shown in Fig. 2. In the hanging drop the bacillus was seen to be motile. It grew readily at 37° C. on nutrient agar. Isolated colonies on agar at the end of 40 hours in the incubator were small and translucent and resembled minute droplets of condensed moisture. They became rather milky in appearance when older. In a uniform stroke culture a translucent slightly opalescent layer was found at the end of 48 hours. At ordinary temperatures it grew in gelatin which it liquefied.

*Inoculations.*—The pathogenic properties of the bacillus were tested in a guinea-pig and in a rabbit. For this purpose a tube of nutrient broth was inoculated from the agar

culture obtained from the substance of the spinal cord in the upper dorsal region and incubated at 37°C. for 24 hours. At the end of this time an abundant growth of bacilli had taken place in the broth. One cubic centimetre of this broth culture was injected with the usual antiseptic precautions beneath the skin of the inner side of the thigh of a brown male rabbit, and a similar quantity of the same culture was also injected into a red-and-white male guinea-pig in the same situation. On the following day the guinea-pig looked ill, the temperature in the morning being 100·6°F., and in the evening 99·4°. On the next morning it was found dead in

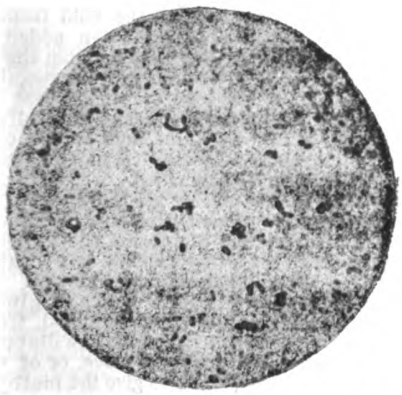
FIG. 2.



Film preparation of culture obtained from substance of spinal cord.

the cage. No naked-eye changes were found at the post mortem examination. Films were prepared from the blood from the heart and stained. Agar tubes were inoculated from the blood in the heart, and films were prepared from the cultures which developed. On microscopical examination of the blood a few widely-scattered micro-organisms which resembled diplococci without any capsule were found. In the hot incubator a pure culture of the original bacillus developed on agar, so that the micro-organisms in the blood were really bacilli with polar staining and not diplococci, the actual form being more easily seen in pure cultures than in the blood itself.

FIG. 3.



Film preparation of culture obtained from blood of guinea-pig after inoculation.

Fig. 3 shows the specimen prepared from the agar culture obtained from the blood of the guinea-pig. In the case of the rabbit, on the day after the inoculation the temperature in the morning was 102° and in the evening 104°. The animal was very quiet and the respiration was rapid and laboured. The following morning the temperature had fallen to 100·2° and a swelling had formed at the seat of the inoculation. After this the temperature only varied between 100° and 101°. On the fourth day after the inoculation the right side of the scrotum was swollen and the rabbit was killed. The right tunica vaginalis was distended with thin serous fluid and the right testicle was swollen. A slough had formed at the seat of inoculation. Tubes were inoculated from the heart blood and from the tunica vaginalis. No colonies developed from the blood but an abundant pure growth of the original bacillus developed in the tube inoculated from the tunica vaginalis. In the guinea-pig, therefore, the subcutaneous inoculation of a pure culture of the bacilli produced a rapidly fatal general infection without local reaction, whereas in the rabbit there was no general infection, but a local reaction, with sharp rise of temperature, limited to the neighbourhood of the inoculation. No nervous symptoms were observed in either of the animals.

The characters of the micro-organisms may be shortly summarised as follows. A short oval motile bacillus which stains readily by aniline dyes, the stain in many cases showing a much stronger affinity for the ends than for the centre of the bacillus. It can with care be stained by Gram's method and was found in large numbers in the pia mater and also in lesser numbers in the substance of the cord. Pure cultures of the bacillus were obtained both from the meninges and also from the substance of the cord itself. Subcutaneous inoculation caused rapid general infection in the guinea-pig and a local infection in the rabbit. The bacillus grows readily on the ordinary nutrient media in both the hot and cool incubators. It liquefies gelatin.

In this case we have a clear history of an acute onset of the meningo-myelitis following an exposure to cold and wet combined with fatigue. The similarity to the sequence of events often observed in the development of an attack of acute lobar pneumonia is striking, so that it seems very probable that the myelitis, like a pneumonia, was the result of an infection occurring as a result of a temporary lowering of resistance. This view is strongly supported by the presence of a micro-organism in the meninges and spinal cord, which we have shown was undoubtedly possessed of pathogenic properties.

Micro-organisms have been found and cultivated in several cases of acute meningo-myelitis, notably in the case so well recorded by Dr. T. Buzzard and Dr. Risien Russell.[1] They obtained a culture of a diplococcus in one tube which was inoculated from the meninges in the lumbar region, the other tubes showing no growth. The organisms seem to have been less numerous than in our case, as growth developed in all the tubes we inoculated. Similar diplococci were seen in stained sections in the exudation, in the meninges, and in the substance of the cord, just as in our case. The organism in our case differs from that found by Buzzard and Russell in that it more nearly resembled a bacillus with polar staining than a diplococcus—a difference that is perhaps more apparent than real—it liquefies gelatin, and can be stained in sections by Gram's method. It differs from Weichselbaum's diplococcus intracellularis in appearance and, unlike it, grows in the cool incubator and does not appear within the cells of the exudate.

In Dr. E. F. Trevelyan's case[2] a diplococcus was obtained from the pus outside the dura mater and also from a softened patch in the cord; the bacteriological examination was, however, not carried further as the micro-organisms died in a few days.

The value of the bacteriological examination in our case is, of course, much diminished by the fact that the bed-sore was in such close proximity to, if not in actual communication with, the spinal canal, but we consider that if the infection of the cord had been secondary to the foul bed-sore the cultures would have been mixed and not pure in all except two tubes, as was the case. The evidence we at present possess goes a long way to show that acute meningo-myelitis is probably an infective disease, and although it cannot as yet be attributed to any single organism the bacteria which have been found in the recorded cases appear to have certain characters in common.

Newcastle.

[1] Transactions of the Clinical Society of London, vol. xxxi., p. 185.
[2] Brain, Part lxxxviii., 1899, p. 607.

LOCAL SANITARY AUTHORITIES AND THE MILK-SUPPLY.—The bacteriological examinations conducted by the St. Pancras Vestry have proved that out of 50 samples only 16 were normal, five contained tubercle bacilli, and the remainder from various causes were not fit for human consumption.

# A BLOOD REACTION IN DIABETES MELLITUS; ITS CAUSE AND DIAGNOSTIC VALUE.

BY R. T. WILLIAMSON, M.D., F.R.C.P. LOND.,
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IN 1896 I recorded[1] a reaction which I believe to be peculiar to the blood of patients suffering from diabetes mellitus. A drop of blood taken from the finger of a diabetic patient decolourises a warm alkaline solution of methylene blue, when mixed in certain proportions, whilst blood from healthy persons or from individuals suffering from other diseases has no such action when mixed in the same proportion. The reaction is due to the greater reducing power of diabetic blood and is obtained as follows. At the bottom of a small, narrow test-tube is placed a drop of water—40 cubic millimetres. To this are added 20 cubic millimetres of blood taken from the finger of the diabetic patient. Then 1000 cubic millimetres (one cubic centimetre) of a watery solution of methylene blue (1 in 6000), and finally 40 cubic millimetres of liquor potassæ (B. P.) are added. Into a similar tube are placed 20 cubic millimetres of normal blood with the same proportions of methylene blue and liquor potassæ. The mixed fluids in each tube will have a fairly deep blue or bluish-green colour. Both small test-tubes are placed in a beaker or very large wide test-tube containing water and the water is heated and kept boiling for four minutes. At the end of this time the fluid in the small test-tube containing the diabetic blood will have lost its blue colour and become dirty yellow, whilst that in the tube containing non-diabetic blood will remain blue or bluish-green. (The exact quantities of the fluid used may be measured by the small tubes supplied with the hæmocytometer and hæmoglobinometer of Gowers.)

I have examined the blood in 43 cases of diabetes mellitus and have always obtained the reaction mentioned. I have examined the blood in 100 cases of other diseases of the most varied forms and also the blood of healthy persons on innumerable occasions, but, when the fluids have been mixed in the proportion above stated, have never obtained the reaction. My results have been confirmed in Germany by Loewy,[2] Goldscheider,[3] and R. Müller[4]; in France by Le Goff,[5] P. Marie, Lyonnet,[6] and Lépine; in Italy by Baduel and Castellani,[7] Ferrannini,[8] and Lucibelli[9]; and in America by Futscher[10] (in Professor Osler's clinic). Further observations which I have made indicate the cause and diagnostic value of the reaction.

## CAUSE OF THE REACTION.

1. This reaction, peculiar to diabetic blood, is evidently due to the presence of some substance in solution in the blood serum. Large quantities of blood obtained post mortem from the internal jugular vein of three cases of diabetes mellitus were allowed to stand until the serum separated on the surface and the red corpuscles sank to the bottom of the vessel. In each case the blood serum, free from red corpuscles, gave the reaction—i.e., decolourised methylene blue in the proportion given above—whilst the serum obtained in a similar manner from non-diabetic blood gave no reaction (in the proportions mentioned).

2. Blood serum from a diabetic subject loses the power of giving the reaction after it is submitted to the action of yeast. In three cases of diabetes mellitus large quantities of blood were taken post mortem from the internal jugular vein and allowed to stand for 24 hours until the serum had separated. In each case two test-tubes of the usual size were half filled with the diabetic blood serum. To one test-tube ordinary German yeast was added, to the other no yeast was added. Both were kept in a warm place, side by side, for 48 hours, the mouth of each tube being plugged by cotton-wool. At the end of 48 hours the serum in the test-tube containing the yeast gave no reaction with methylene blue (according to the method above described), whilst 20 cubic millimetres of the serum in the tube which contained no yeast gave the reaction readily. The same results were obtained by the blood serum in all of the three cases of diabetes. The diabetic serum which had been submitted to the action of yeast and which did not decolourise methylene blue gave no reaction for sugar with Fehling's solution; whilst the diabetic serum to which no yeast had been added and which continued to give the reaction with methylene blue above described, gave a slight but distinct reaction for sugar with Fehling's solution. The failure of the diabetic serum, after the action of yeast, to give the methylene-blue reaction was not due simply to the presence of the yeast-cells in the fluid, since diabetic serum when mixed with yeast and tested immediately gave the methylene-blue reaction distinctly. Hence we may conclude that the diabetic serum loses its power of giving the methylene-blue reaction, owing to the fermenting action of the yeast fungus, which in the course of 24 or 48 hours destroys some substance in the serum.

3. After the proteids of diabetic blood or serum have been separated, by boiling with crystalline sulphate of soda and filtering, the filtrate gives the methylene-blue reaction. A number of observations were made on the blood obtained post mortem from the internal jugular vein in a case of diabetes. In each examination an ounce or more of the blood or serum was mixed with an equal quantity of crystalline sulphate of soda and the mixture was boiled until the froth above the clot became white and all red specks disappeared. In every examination 20 cubic millimetres of the clear filtrate gave the methylene-blue reaction above described. When non-diabetic blood was treated with sodium sulphate in the same way the filtrate failed to give the methylene-blue reaction.

4. After the separation of the proteids of diabetic blood the power of giving the methylene-blue reaction is destroyed by the action of yeast. In another experiment, two test-tubes were half filled with the clear filtrate, obtained after separating the proteids of diabetic blood by boiling with sodium sulphate, as just described. To the fluid in one test-tube a little German yeast was added, while to that in the other tube no yeast was added. The mouth of each tube was plugged with cotton-wool and the tubes were kept in a warm place for 48 hours. Then the fluid in each tube was examined for the methylene-blue reaction above described. 20 cubic millimetres of the fluid from the test-tube of filtrate to which yeast had been added gave no reaction; 20 cubic millimetres of the fluid from the test-tube to which no yeast had been added gave the reaction markedly. The fluid in the test-tube to which yeast had been added gave no reaction for sugar either with Fehling's solution or phenyl-hydrazin, whilst the fluid in the other test-tube, to which no yeast had been added, gave a reaction for sugar both with Fehling's solution and phenyl-hydrazin.

5. It is well known that glucose has the power of reducing a warm alkaline solution of methylene blue. 20 cubic millimetres of a watery solution of glucose (5 in 1000) gave a distinct reaction with the methylene-blue test; but 20 cubic millimetres of a 2·5 in 1000 solution did not. When 20 cubic millimetres of the 2·5 in 1000 solution of glucose were added to 20 cubic millimetres of normal blood, the mixture decolourised the alkaline methylene blue like diabetic blood, but 20 cubic millimetres of the blood alone, or of the 2·5 in 1000 glucose solution alone, failed to give the methylene-blue reaction.

6. Though non-diabetic blood does not give the methylene-blue reaction in the proportions stated at the commencement of this article, it has nevertheless some reducing action in larger quantities. In performing the methylene-blue blood test it is always necessary to measure accurately the quantity of blood employed (20 cubic millimetres), since the diabetic reaction depends on the greater reducing power of the diabetic blood. As already stated, I have never obtained the reaction when 20 cubic millimetres of blood were employed, in any condition except diabetes mellitus. But with normal blood a reaction may be obtained when 60 cubic millimetres of blood are employed in performing the test; also

[1] Brit. Med. Jour., Sept. 19th, 1896.
[2] Berliner Klinische Wochenschrift, 1897, No. 46, and Fortschritte der Medicin, 1898.
[3] Deutsche Medicinische Zeitung, 1898.
[4] Münchener Medicinische Wochenschrift, 1899, No. 25.
[5] Bulletin et Mémoire de la Société Médicale des Hôpitaux de Paris, 1897, No. 16 and No. 17; Sur certaines Réactions Chromatiques du Sang dans le Diabète Sucré, Paris, 1897, pp. 44 to 81.
[6] Lyon Médical, 1896, tome lxxxiii., p. 187.
[7] Centralblatt für Innere Medicin, 1898, No. 28, and Settimana Medica, 1898 No. 10.
[8] Riforma Medica, 1897, No. 248 and No. 249; Centralblatt für Innere Medicin, 1898, No. 28.
[9] Gazzetta degli Ospedali, 1899; and Brit. Med. Jour., Epitome Jan. 27th, 1900.
[10] Philadelphia Medical Journal, 1898, No. 7

60 cubic millimetres of normal blood serum decolourise the methylene-blue solution. (20 cubic millimetres of serum have no action, just as in the case of 20 cubic millimetres of blood.) Hence there is also some substance in normal blood that has a reducing action when a sufficient quantity of blood is employed. This substance is in solution in the serum. But it is not simply the minute quantity of glucose, of normal or non-diabetic blood, since this reducing power is not destroyed by the action of yeast. Thus, two test-tubes of ordinary size were half filled with blood obtained post mortem from a case of aneurysm. To one test-tube yeast was added; to the other no yeast was added. Both were kept in a warm place for 48 hours. At the end of that time 60 cubic millimetres of blood from *each* tube reduced the methylene-blue solution readily. Hence there is a substance in non-diabetic blood, beside the minute quantity of sugar, which has some slight reducing action on methylene blue.

7. It is interesting to note that 20 cubic millimetres of diabetic urine gave the methylene-blue reaction markedly, whilst 20 cubic millimetres of the same diabetic urine in which the sugar had been decomposed by the action of yeast no longer gave the methylene-blue reaction; also 20 cubic millimetres of normal urine did not give the methylene-blue reaction.

Briefly summarised the results of the observations recorded may be stated as follows. The methylene-blue reaction, carried out with the proportions of fluid stated at the commencement of this article, may be obtained with a solution of glucose; it is obtained with diabetic urine, with diabetic blood, with diabetic blood serum, and with the filtrate from diabetic blood when the proteids have been separated by boiling with crystalline sodium sulphate. All of these fluids after the action of yeast fail to give the reaction. As already mentioned, when a dilute solution of glucose is added to normal blood the methylene-blue reaction is obtained. All these facts indicate that the methylene-blue reaction given by diabetic blood is due to the excess of glucose which it contains.

### CLINICAL AND PATHOLOGICAL VALUE OF THE REACTION.

The methylene-blue reaction of diabetic blood is exceedingly delicate and may be obtained even when the urine contains only a very small quantity of sugar. Usually there is no difficulty, however, in diagnosing diabetes mellitus clinically. The examination of the urine is generally sufficient. The methylene-blue reaction of the blood is present in diabetic coma, and in this condition if the urine could not be obtained for examination (i.e., if the bladder should be empty) the blood reaction would be diagnostic. R. Müller [11] has recorded a case of diabetic coma in which the diagnosis was definitely made by the blood reaction which I have described, the bladder being empty and no urine being obtainable.

In the post-mortem appearances of persons dying from diabetes there is nothing characteristic. In the case of an individual dying from diabetic coma, if no history of the diabetic symptoms before the onset of coma could be obtained and if no urine could be found in the bladder nor any obtained which had been passed before death, a pathologist would not be able to diagnose the disease from the post-mortem appearances. Such cases, no doubt, have sometimes remained unrecognised in the past, and probably some of the obscure cases in which post-mortem examination made for the coroner has failed to reveal a satisfactory cause of death have been due to diabetic coma. The methylene-blue blood reaction in such cases would be diagnostic.

In five cases of diabetes mellitus I have removed blood from the internal jugular vein post mortem, and in every case 20 cubic millimetres of the blood gave the methylene-blue reaction markedly. Further, it is an interesting practical point that the reaction is obtained many hours after death. Thus in a case of diabetic coma in which the post-mortem examination was made 16 hours after death three ounces of the blood were placed in a bottle. Three days later the methylene-blue reaction was obtained markedly. In another case, blood removed from the internal jugular vein 10 hours after death gave the methylene-blue reaction after it had been kept in a bottle for a week. The reaction, of course, is obtained early as well as later. I obtained it in one case in the blood taken from the internal jugular vein three hours after death. I have examined the blood taken post mortem from the internal jugular vein of 20 individuals dying from various other diseases but have never obtained the reaction.

Hence this reaction may be of practical diagnostic value, pathologically and medico-legally, in certain cases. I think it is advisable, when the blood is examined post mortem, to always take it from the internal jugular vein. Blood from this vein is not liable to be contaminated by other fluids during the necropsy. It is possible, also, that this delicate reaction may be made the basis of an easy method of estimating the amount of sugar in the blood. Two methods have already been worked out by Lyonnet and Le Goff, but it remains for future observations to show whether these methods are more delicate and reliable than those commonly employed.

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11 Münchener Medicinische Wochenschrift, 1897, No. 25.

## THE ETIOLOGY OF SCURVY.

BY W. E. HOME, B.SC., M.D. EDIN.,
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I SHOULD like to offer some remarks on the very interesting paper of Mr. F. G. Jackson and Dr. V. Harley on Scurvy which appeared in THE LANCET of April 28th and to submit a suggestion as to the etiology of this important disease which has become so rare that I cannot be quite certain that I have ever seen a case. The orthodox view is that it occurs in people who live on a diet deprived of green vegetables or potatoes, its onset being accelerated by preceding hardships, while it is prevented by a daily ration of lime-juice and cured by lime-juice or fresh vegetables. Torup and Nansen suggested that it might arise from ptomaine posioning, which was noted in THE LANCET of Feb. 13th, 1897, as a new departure, and this suggestion Mr. Jackson and Dr. Harley endeavour to support by their research reported in THE LANCET of April 28th. They fed six monkeys on sound meat and 13 on tainted meat and in these last found evidences of scurvy—namely, as they say, bloody mucus in the stools, spongy gums, and characteristic anæmia; also there were post-mortem appearances of irritation in the mouth (spongy gums—that is to say, I suppose, inflammation of the gums—going on to ulceration) and irritation of the large intestine. They consider their observations support the theory that "scurvy is essentially due to poisoning by the ptomaines of tainted animal food." In their experiments, however, they did not take care to administer ptomaines only, but as the "sour-smelling meat" on which the second lot of monkeys were fed had not been sterilised, only as they say "gently heated," the monkeys got not only ptomaines but also the living bacteria which produced the ptomaines. What is there, then, in these experiments to prevent us from believing that the bacteria of putrefaction were taken alive into the mouths of the monkeys, there infecting the sordes round the teeth and setting up gingivitis, going on to ulceration, infecting also the gastro-intestinal canal later, these parasitic infections setting up the anæmia on which all the other symptoms of scurvy depend? Anæmia is generally the effect of the struggle of the organism against some infection. How pale a person becomes after suffering for a couple of days from a large boil, and think of Hunter's most valuable researches into the etiology of pernicious anæmia and Sir Andrew Clark's explanation of chlorosis. Clearly the anæmia will develop all the faster if the victims are, as so often happens in epidemics of scurvy, on short rations, particularly if they are taking in fresh doses of the poison with each scanty meal, and they probably were taking in fresh doses with each mouthful, for Lind describes their beef as rotten, their pork as rancid, their flour as mouldy, and their water as unwholesome. And Gillespie describes the beef the men had to eat in the Persian Gulf as so rotten that it could not properly be boiled. They tied it up with strings but it fell out of them, wherefore their Arab pilot greatly pitied them and preferred rather to go ashore where there was a great epidemic of plague than to remain in their ship where he could get no other food.

It is curious that in the same number of THE LANCET (April 28th) there should be an account of a case of pernicious anæmia associated with, and in the opinion of Dr. W. Elder mainly due to, neglected state of the teeth, cured by buccal antisepsis, anti-streptococcic serum (the

most evidently beneficial treatment), and salicylate of bismuth. We have all heard stories of leading consulting physicians who have refused to advise patients suffering from dyspepsia till their teeth were put in order. Have we not now a scientific reason for this seemingly arbitrary action by the practical man?

I am greatly interested to have this suggestion that the initial lesion of scurvy is an affection of the gums; it harmonises much of the contradiction which exists in the historical pathology of this disease. I would submit as a nearer approximation than we have yet had to the true etiology that scurvy is caused by micro-organisms "as yet unknown" which infect the alimentary canal, setting up primarily a gingivitis and later an anæmia which leads to hæmorrhages and predisposes to ulcerations, more frequently threatened as these last were in ships where long cruises with their scarcity of provisions and of water made cleanliness much more difficult. These micro-organisms may be destroyed by antiseptics. (Osler recommends permanganate of potash and dilute carbolic acid for the stomatitis and solution of nitrate of silver for the ulceration of the gums.) Lime-juice cures scurvy either specifically (as quinine antagonises the malarial organism or as mercury resists syphilis) or it may act as an antiseptic which can be taken into the mouth and swallowed strong enough to do the mouth good and destroy the parasite without doing the rest of the body harm. That it is useful I suppose no one will deny, but as many people have forgotten why we think so I may narrate Dr. Galleraud's experiences. In the *Psyché*, in the White Sea, in 1854, he had a severe epidemic which only ceased when the vessel returned to France. Next year in the *Cléopâtre* he was threatened with a more serious epidemic, but Dr. Murray of the *Meander* told him about our lime-juice and got for him 11 gallons from the *Meander* and *Phœnix*, by the help of which he put a stop to the epidemic in the *Cléopâtre*, and the French Admiralty was so convinced by his experiences of the usefulness of lime-juice that they made it a general issue to their fleet.

But why should lime-juice be so beneficial? It is not only an acid but also contains aromatic principles, and each of these classes of substances has been used to cure scurvy. Cook (1772) preserved his crew with sauerkraut; Lind (1779) besides lime-juice recommended vinegar; Blane (1785) (like Lind, an M.D. of Edinburgh) mentions sowens as anti-scorbutic. (There was scurvy in Ladysmith; was there any or as much in Mafeking?) So much for the acids. As to aromatics, the anti-scorbutic plants mentioned are generally cruciferæ. Lind recommends the surgeon to grow mustard and cress on blankets and to give a daily ration of these plants. Cochleariæ are often mentioned; they include not only the various scurvy grasses, as they were called of old, but the nowadays better-known horseradish, and, as we have seen, Osler recommends antiseptics for the treatment of the gums. It may well be that both classes are required. I find that ulcers heal up more quickly when one is not too devoted to a single antiseptic, however potent; most ulcerations result from a mixed infection or symbiosis and are best cured by different antiseptics used alternately, and lime-juice may be the best anti-scorbutic because of its double nature and varied antiseptic effect. Employed as a mouthwash at bedtime it certainly is useful—I suppose as an antiseptic in the prevention of the buccal catarrh commonly ascribed to over-smoking, and very apt to follow late and prolonged dinner-parties. Easton's syrup diluted I have found more effectual, but it is more difficult to insure that your patient shall use it.

In relation to the antiseptic effect of the oils of the cruciferæ I may say that in a small prison in which I once worked we recognised, we thought, an epidemic gastro-intestinal catarrh in the treatment of which we were using up all our peppermint and bitter stomachics until the prisoners got mustard added as a condiment to their daily allowance of three-quarters of a pound of cooked beef, when the fermentative dyspepsia was, as we had expected, checked without drugs. The dyspepsia-causing germ, which thrives best in beef-chyme, grows strongly in the stomachs of people who eat no meat but beef; to depress it we have learnt by experience to take mustard or to vary our diet. I suppose that the germ that thrives best in mutton-chyme is less well antagonised by mustard and that therefore it is we do not eat mustard with mutton. So the old gibe: "Mustard with mutton! Naval officer, I presume," dates back to a day when naval officers, always at sea blockading and living on beef and pork, had not enough experience of mutton to know that mustard was not its appropriate antiseptic condiment. I suppose, too, that the principle of the varying of diet which I mentioned above explains why children, dyspeptic while living exclusively on milk, are often cured by raw meat juice. The infecting organism, which probably entered the stomach with milk and has been living in milk-chyme, finds the environment less favourable when raw meat juice replaces milk, is weakened and now more easily destroyed by the remedies formerly powerless against it.

Since I have read William Hunter's papers on pernicious anæmia I have realised more clearly than even before how important a factor in the causation of tropical anæmia and debility is the infection of our alimentary canals by the saprophytes which so plentifully surround us in those regions of luxuriant vegetation. From these infections the natives strive to save themselves by eating curries and chewing peppers and other "hot things"—that is, aromatic antiseptics. The diarrhœa of Hong-Kong is a proverb—a tradition I myself believe of the time before 1888, when the gravitation supply of upland surface-water was brought in. Still, there is a good deal of diarrhœa which is best treated antiseptically with carbolic acid on Colonel Quill's plan, or with boric acid for the stomach, salol for the small intestine, and enemata of copper sulphate or boric acid for the colon and rectum. It is also worthy of note that many of the Eastern races of greatest vitality, as the Chinese and the Indian, are, as I have seen them, most careful about the morning cleaning of their teeth; the Chinese in addition scrape their tongues with a "strigil," generally attached to the tooth-brush by a chain. The Indians at Zanzibar sit at their doors in the early morning and chew tooth-sticks, with which they poke and rub out all the sordes. In their slow, methodical, and thorough operations they greatly remind me of a former shipmate, the most minutely clean person I have ever known, who used always after breakfast to sit himself down in his cabin for five minutes with a strong toothpick, allowing nothing at this important period to distract his attention from an essential duty. He was certainly more healthy than were most of us.

The only well-known fact about scurvy which I am quite unable to explain by the theory of primary infection of the gums cured by antisepsis is the value of the potato as an anti-scorbutic. Raw or cooked it seems almost as efficient as lime-juice, yet it is not, so far as I know, an antiseptic.

In conclusion, I may recapitulate and say that I suggest that scurvy is essentially an infection of the mouth with micro-organisms out of decayed food, antagonised by lime-juice and fresh vegetables which act as antiseptics, this infection of the mouth being most apt to occur in times of hardship when cleanliness is least within our reach.

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# ON THE LIMITATION OF PHYSICAL METHODS IN THE INVESTIGATION OF THE PHYSIOLOGICAL AND PSYCHICAL PHENOMENA OF SIGHT.

BY F. W. EDRIDGE-GREEN, M.D. DURH., F.R.C.S. ENG.

IN a paper published in THE LANCET of May 26th (p. 1511) I showed how difficult it was to correctly ascertain the colour perception of any person if we ignored colour names. In this paper I wish to show that in investigating physiological, psychical, and pathological phenomena we must employ methods which are suited to the case in hand and not those which are so admirably adapted to the study of the physical phenomena themselves. We talk of light and heat as if they were two different things, but the difference exists in us, not in the physical stimuli giving rise to the sensation. The physical stimulus is that force which, acting upon the body, gives rise to a sensation. For instance, the force which, acting upon the eye, gives rise to the sensation of light when falling upon the back of the hand gives rise to the sensation of heat, and may when falling upon the back of the head covered by hair give rise to no sensation whatever. Again, different physical stimuli

may cause the same sensation as a blow on the eye causing the sensation of light. Many years ago a well-known physicist who was discussing my views on colour-vision remarked: "I explain the Young-Helmholtz theory in the following way to show how by the admixture of three constituents we can form all colours. If we take whisky, sugar, and water we can by mixing them in varying proportions obtain mixtures of an unlimited number, each differing from the other." But he was entirely overlooking the man who had to taste the whisky. The mixtures which could be made are innumerable, but the number of distinct mixtures which could be recognised by any person are very limited. In the case of a man who has been accustomed to take a glass of whisky every day for 20 years it is improbable that the constituents were twice alike, viewed from a physical standpoint, but to him they have appeared exactly alike. If my view be correct, that colour is a point of difference perceived by a perceptive centre in the brain, a method which aims at ascertaining the colour perception of an individual by measuring the apparent luminosity of the colours he perceives is as likely to achieve the desired result as it would be if applied to ascertain any other idea of the mind.

I will now give an example showing how inefficient these physical methods are to elucidate the phenomena of colour perception. I was the first to point out that intermediate between normal and dichromic colour vision there are those whose vision is pentachromic, tetrachromic, and trichromic. Let us consider those whom I have designated as having trichromic vision, because it has been asserted by so many physicists that normal colour vision is trichromic. A person whose colour vision is trichromic may see a spectrum of the same length as the normal-sighted, but he sees only three colours—red, green, and violet. He sees no orange, yellow, or blue in the spectrum. In fact, many have remarked to me that red-green would be a far better name than yellow and violet-green than blue, and they frequently used these terms. Yellow and orange do not appear to them as definite colours, but as transition colours between red and green. Tested in every possible way it is found that their vision is trichromic; they never mistake red and green for each other and laugh at the possibility of making this mistake, but are always in difficulty over orange, yellow, and blue. In a classification of colours the same mistakes are made: some yellows are put with red, others with green; some blues are put with violet, others with green. Yet examined by physical methods these persons may appear normal-sighted, and I may mention that several colour-blind persons of this class have been passed by a physicist as normal-sighted. It is obvious that a method of colour-matching which has for its theory that normal vision is trichromic will show that these persons are normal-sighted. They usually pass the Holmgren test with ease. They are, however, most dangerous persons at sea, as they are never certain about a yellow light and continually confuse it with red and green. When I was appointed by the Board of Trade to advise that body on the subject of colour-blindness one of the first cases that was referred to me was of this kind. The man could always distinguish between red and green, but was continually in doubt about yellow. It must be perfectly obvious to the reader that a man who cannot see any yellow in the spectrum and who thinks that red-green would be a better name for yellow cannot have normal colour vision. To me, the yellow of the spectrum or a yellow flower appears an absolutely distinct colour, in which it is not possible to distinguish either red or green. Blue and orange are also absolutely distinct colours to me.

I will now give a bare outline of my views on the perception of colour[1] as it will make the points which I wish to discuss more intelligible. I believe that light acting upon the retina liberates the visual purple from the rods and a photograph is formed, the cones and optic nerve-fibres conveying the impression to the brain. Kühne stated that the visual purple cannot be essential to vision as it is absent from the cones and only cones are to be found in the fovea centralis, the region of most distinct vision. This fact, however, furnished me with a ready means of testing the truth of my theory. I have made numerous experiments which prove that unless light falls as well on a portion of the retina containing rods it may fall on the fovea centralis without producing any sensation. The reader may convince himself of this by a very simple experiment. Fasten a piece of black velvet about three feet square on a door, and in the centre of the velvet put a pin so that the head is directed towards the observer. If the source of light be behind the observer the pin will be brightly illuminated, but on looking at it and keeping the eyes quite still the pin will disappear, the visual substance diffused into the fovea centralis being used up and not renewed. When viewed by indirect vision it is impossible to make it disappear in this way. Single isolated stars when not too bright may be made to disappear in a similar manner. In a dim light and with one eye shut a large portion, and sometimes the whole, of the field of vision will become totally black from the centre outwards. In this experiment the whole of the visual substance is used up and not re-secreted. It is easy to suppose that the visual substance becomes liquefied and diffused into the fovea centralis. This theory is supported by some hundreds of experiments, for instance that the area of greatest luminosity of the retina is at the point where the rods are most abundant, &c. This view occurred to me when I had not one-twentieth part of the evidence in favour of it which I have now. But during the last 10 years I have collected evidence that proves not only that there is a visual substance but that that substance is purple—namely, the complementary of pure green. It is probably only seen as purple when in excess. Under certain conditions a purple after-image can be obtained after white light and every spectral colour. If we rub one of our eyes in a dark room a purple light appears. It will be noticed that the visual purple is in every way suitable for the visual substance. It gives a continuous spectrum. It is easy to suppose that light might liberate the visual substance just as heat melts an ointment, but we have evidence that the cones themselves help. Engelmann and Van Genderen Stort have shown that there is a shortening of the inner segments of the cones under light, but this cannot convey any light sensation, as the same action has been found to take place when the light falls on another part of the body. This action would cause a vacuum. In my experiments, in which I have caused lights to apparently disappear, I find that the experiment succeeds best if only one eye be used and the greatest care be taken that no light falls on the face or any other part of the body. I believe that shortening of the spectrum is due to some defect in this visual substance as there is light as well as colour loss, which is not the case with colour-blindness due to defective psycho-physical perception. The visual substance being decomposed by light sets up by chemical, mechanical, electrical, or some other physical action, impulses which are conveyed to the brain through the cones and optic nerve-fibres, the cones being the terminations of the perceptive fibres in the retina. The whole impression being brought to the centre of memory, different portions of the impression—colour, form, size, luminosity, &c.—are conveyed to the mind through definite perceptive centres. In the case of colour, this perceptive centre is only able to distinguish six definite points of difference (colours) in the spectrum which really presents millions. We, therefore, for the normal-sighted have a hexachromic theory of colour-vision which is independent of light and shade. A hexachromic theory will obviously explain all that can be explained by a trichromic theory. It also agrees with the fact that both blue and violet have been demonstrated to be primary. I may say that I totally disagree with the theory that normal colour vision is trichromic, and am of opinion that the curves and equations which have been constructed to prove that vision is trichromic are mathematically incorrect. I have raised this point as an objection to the Young-Helmholtz theory in a paper recently read before the Royal Society. Equal stimulation of the three sets of fibres is supposed to cause the sensation of white light. Red and green when mixed make yellow. Violet and green when mixed make blue. But yellow and blue when mixed make white, which makes one portion of green too many, thus:—R + G = Y, and G + V = B, but Y + B = white, therefore, R + G + G + V should equal white, but R + G + V = white.

The degrees and varieties of colour-blindness are perfectly explained by the theory of psycho-physical perception. Assuming that the perceptive centre is smaller fewer points of difference are seen. The phenomena of contrasts are explained on the view that colour being a point of difference this becomes more marked on comparison. If we contrast a yellow with a greenish-yellow the yellow inclines to orange

[1] Colour Blindness and Colour Perception, International Scientific Series.

and the greenish-yellow to yellow-green. This could not be explained by assuming that the colours differ by the addition of the complementary to each, as the complementary of yellow is blue and this mixed with yellow would make white instead of orange-yellow.

In addition to the points which I have already raised the following appear to me as serious objections against the ordinary physical methods of ascertaining the colour perception of an individual.

*Absorption of light by the media of the eye.*—It is obvious that the media of the eye vary slightly in colour in different persons. This produces a variation of the colour curve in each case without in any way affecting the real colour perception of an individual. For instance, a normal-sighted person's vision is still hexachromic when he looks through a pale yellow glass.

*Hyperæsthesia to certain colours.*—Another source of error in matching colours with white light is that persons differ as to their sensibility to all colours or to certain of them just as they differ in their physiological actions in other parts of the body. One person can read in a very feeble light but is dazzled by a light which to another person is quite comfortable. A person of this kind matches a red with a grey which is much darker than that chosen by another person, though both may have equally good colour perception. Again, men vary as to their sensibility to certain colours; one is more affected by red, another by green, and another by yellow. We can also have temporary hyperæsthesia, an exaggerated example of which is found in photophobia.

*Idea as to comparative luminosity.*—In matching colours with white light or with each other much depends upon the observer's idea of the colour. If I make a match of red and grey with the idea that red is a very bright colour I shall make a match with a much lighter grey than I should if I had the idea that red was a very dark colour.

If the theory as to a photo-chemical substance be admitted then the action of light on the substance may produce an excessive reaction with one person and very little with another; the apparent luminosity would be much greater in the first case. The secretion of fresh photo-chemical substance may be quicker in one person than in another. We know that the visual purple may be bleached by monochromatic as well as by mixed light. If we suppose the visual substance of the eye to be decomposed in the same manner it would be possible to understand that we might get similar curves of luminosity by different colours though the visual impulses sent to the brain might in each case be different. If there be, and all recent research points to the fact that there are, different centres in the brain for the perception of luminosity and colour, it is obvious that ascertaining the luminosity of a colour will not give us any information concerning that colour because the two are absolutely and totally distinct. In order to make my meaning clearer I will make a comparison with the organ of hearing. The perception of pitch is in every respect analogous to the perception of colour and yet no one would dream of endeavouring to obtain any information concerning the pitch of a note by observations on the intensity with which it is struck.

In conclusion, I will point out that we must always be careful in examining a person by physical methods that we do not obtain results which are only physical, chemical, and electrical phenomena. When the phenomena are psychical they can not be measured by the balance and the rule but must be gained by direct evidence from the mind itself.

Hendon.

## SOME REMARKS UPON THE TECHNIQUE OF OPERATIONS DESIGNED TO CURE RADICALLY OBLIQUE INGUINAL HERNIA.

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THE introduction of Bassini's method of operating for the radical cure of inguinal hernia, whatever opinion we may have of its efficiency, undoubtedly gave a great impetus to the study of the subject. Several modifications in the direction of further elaboration soon appeared, and some of these—notably, the diminishing of the size of the spermatic cord by removal of an excess of veins—are of undoubted utility in certain cases. Whilst a strong adherent of Bassini's procedure, it has always struck me as unsurgical to follow all its details in every case. Our object in attempting a radical cure of hernia is to attain a certain security and not to perform any particular method of operating, no matter how good that may be. We desire to obtain future immunity against hernial protrusion by means as simple as possible, by means which damage and disturb the tissues as little as possible, and by means which leave the part as nearly as possible in the condition which obtains when there is no hernia.

The operation for radical cure of an inguinal hernia must be looked upon as essentially an abdominal incision. The main principles which guide and restrain our technique in opening the abdomen must be allowed full weight in our hernial operations. Thus the smallest incision which allows our free working is the best; a good inch or more of the skin incision, generally made on towards the pubes, is, as a rule, unnecessary. I often find now that it is not requisite to incise the skin internally as far even as the external ring. The tissue in this region carries a good deal of fat, much more than further out, and it is easily split into planes, which fact allows of ready infiltration of blood, and as it is furnished with one or two fair-sized arteries and two or more fair-sized veins the leaving of it intact is a matter of some importance in the saving of time and keeping the operation area dry from blood. If the incision through the skin and subcutaneous tissue is made well above the level of Poupart's ligament a region is entered which allows of marked mobility, so that if the operator wants it he can lift the skin and subcutaneous fat with the vessels in one piece on the forefinger and thus expose the external ring. On the other hand, I extend the skin incision well beyond the site of the internal ring.

From an incisional point of view Poupart's ligament in the operation partakes largely of the nature of a bony margin, therefore the further away from it we can keep the better for the future integrity of our scar. Thus the best skin incision, in my opinion, is one which is a full inch above Poupart's ligament and which does not invade more than slightly the pubic thickening of subcutaneous fat and which ends internally, of course, far from the commencement of the scrotum. Our objective, no matter how large the hernia, is, in the operation for the radical cure, as in the operation for the relief of strangulation, the point of exit of the hernia from the abdomen, and this in inguinal hernia is, in the vast majority of cases, the internal ring. Again a well-healed scar on the abdomen is of no moment, whilst the scar intruding on the flexure of the groin may be inconvenient. The deep layer of the superficial fascia next claims our attention. In recent hernia, and especially in the congenital variety, except in so far as it to some extent guarantees the blood-supply of the aponeurosis beneath, this structure is of small importance in the surgeon's eye, but in herniæ of years' standing, and particularly in the herniæ of old men, it becomes a tissue of considerable strength and definite utility in helping to make the best of a bad job. There is no occasion in a young hernia to strip it from the aponeurosis as far down as the ligament; its incision in the same line as the division of the aponeurosis with which it has vascular connexions is sufficient. In older and large herniæ where it has attained greater strength and substance it may be incised nearer Poupart's ligament than is the aponeurosis and by judicious trimming may be used as an accessory layer of moderate but undoubted restraining power and this in cases where the more definitely fibrous structures in great degree fail the surgeon. In old cases all the other fibrous coverings and structures lose in tone and texture whilst this deep layer of the superficial fascia alone gains in strength and importance.

It is, however, often necessary to dissect up a little of this deep layer in order to choose a line in the aponeurosis of the external oblique which seems to invite separation. The aponeurosis should be separated or divided half an inch at least above Poupart's ligament—i.e., away from what is more or less a fixed margin. This leaves a good fringe of fibrous tissue attached to Poupart's ligament which enables the deep sutures to be more easily inserted into that ligament and removes them from the immediate line of the superficial stitches in the aponeurosis. It must be wrong to cut fibrous structures if we can possibly avoid it and a small linear hiatus in the spread-out aponeurosis can generally be found which lends itself to the exposure of the underlying muscle

with a minimum of actual cutting of aponeurotic fibres. The grain of the flat tendon of the external oblique ring generally travels in the direction in which we wish to divide it, so that even if a hiatus is not present the linear fibres can be separated with care in such a way as to produce very little real damage. I say very generally because whilst this obtains in young herniæ the line of the fibres is in old herniæ often curved by the bulging and not in consonance with our line of incision. This is one of many reasons why our attempts at radical cure in old herniæ are not comparable with our results in recent ruptures. In addition to this the lower fibres of the external oblique aponeurosis are more curved in some young cases than in others presumably with the less or greater obliquity of Poupart's ligaments, which is, after all, only their thickened and reinforced edge. Thus it is in a few young cases necessary to cut across fibrous tissue in exposing the internal oblique quite apart from those discrete transverse or intercolumnar fibres or bundles of fibres which may be met with far away from the pillars of the ring. We cannot but divide these cross fibres when we meet with them running more or less at right angles to the line of our incision or separation, but can we save the most important of them all, the external ring itself? If we divide the ring no suture, however deft, will make it nearly so strong as before. We divide fibres the integrity of which we can never replace. Up to this point we have been as careful of the parietes as we are in the operation of the removal of the appendix, and the structures to be dealt with, even the occasional cross fibres, are the same, but the ring introduces a new element altogether. It can, however, be ignored in two ways, each of which may be used in a certain number of cases. The division of the aponeurosis can be taken outward an inch or two inches or more beyond the internal ring. This does hardly any damage to the wall (as we follow up the hiatus or fissure and the cross fibres are fewer the further out we go) and it gives us much more room to manipulate the cord, so much so as to enable us to free the sac, even when scrotal, without division of the ring. So desirable a conservation is not to be attained in every case, but it may be in a very considerable number of cases. It is easily accomplished in large old herniæ, in which it is of great value. Even in cases of old men where the testicle is sacrificed in the hopes of patching up the abdominal wall sufficiently to make their lives endurable the ring is a valuable collection of fibres in a region where all the fibrous structures have given and sagged. In young subjects where all the tendinous material is tauter we may occasionally have to divide the ring to give us room to carry out our manipulations in the canal, but it is a sorry spectacle in a plastic operation to see fibres of such consequence divided and the awkward flap which results.

In strangulated cases it is now my practice, unless the patient's condition is very bad, to open up the canal at once after incising the skin in the position described for the radical cure. Our objective is the same in strangulated as in non-strangulated cases, so that there is no need for a different incision. When the field of our efforts—viz., the inguinal canal—is open by dividing or separating the aponerosis, it does not matter how large the hernia below is, as everything can be pulled up into the opened canal immediately beneath the surgeon's eye and finger. By opening the canal in strangulated cases at once the surgeon is in complete command of everything which concerns the operation. The distended sac at once bulges into the division of the aponeurosis and can be easily opened, the contents in most cases can be gently disengaged and brought up from the lowest parts of the sac, the whole field washed from any fluid which ought not to go back into the abdomen and all without dividing the most important cross fibres of the part of the aponeurosis which we are dealing with—namely, the external ring. Before we divide the aponeurosis the ring is grossly stretched but directly the pressure of the aponeurosis and the sac is removed all tension on the ring is gone. Even when the external ring is the seat of constriction the bowel can be disengaged from it by working from above in the opened canal. Our division of the external oblique aponeurosis is in the direct line of its action, so that when the muscle acts the slit in the tendon is still more closely approximated, but if the ring has been divided the lower *point d'appui* of a number of muscular fibres (and these attached to the tendinous fibres nearest Poupart's ligament and therefore the most important in a hernial sense) is lost. The division in the line of action of the tendinous fibres even up to the muscular edge in no way interferes with the mechanics of the part, but the destruction of the ring throws out of restraining action a number of fibres and renders them divulsive. The care with which nature has reinforced and attached the margins of the ring shows us the light in which it may be regarded as an antagonist of intra-abdominal pressure. We also know that when our operation fails to be a radical cure the protrusion in most cases comes directly out of the abdomen in the vicinity of the damaged external ring. Thus an effort, I believe, should be made to spare the ring, a consummation I find much easier and more often accomplished now than when I first essayed it. In this my technique has been much helped by separating the external oblique aponeurotic fibres far out and by a recognition of the way of dealing with the cord and sac in the least disturbing and damaging way.

We may obviate the necessity of opening up the ring by taking our incision in the aponeurosis above it so that it is displaced downwards with what we may call the lower flap. In this, however, we cut through some valuable fibres lying across our path, which injury is to some extent remedied by the good raw surface left allowing of excellent apposition. Very satisfactory results have been got in the cases in which I have used this detail, but it is not to be thought of if we can do what is necessary by separating the aponeurotic fibres outwards for a considerable distance and sparing the ring. This is undoubtedly to my mind the ideal way of treating a hernial case and is strictly comparable with the ideal operation for gaining access to the appendix where only skin, a deep layer of superficial fascia, and peritoneum are incised. Having separated the long fissure in the aponeurosis the forefinger is passed inside the lower part and gently pushed along as low as Poupart's ligament. In some cases where the hernia has been in existence for some years and the other parts are becoming lax, the ilio-inguinal nerve may be pushed downwards by the finger rather than remain in contact with the cord. The internal oblique is now inspected critically, the assistant raising the upper edge of the external oblique, for upon its condition depends much of the further steps of the operation. The muscle dominates the situation entirely. Its variations are most remarkable. In the cases which lend themselves most perfectly to a radical cure—viz., those of adolescents and young adults with sacs which have been but little used—it is hard to see where a hernia can come down, so closely aggregated are the fibres arising from Poupart's ligament. In these cases we have to make a deep dive with the forefinger to get under the fibres arching over the cord and lift it into view. The internal oblique here, in fact, presents a complete muscular curtain continued and carried out of sight by the cremaster. In a less ideal case, yet one very adaptable, the curved fibres are seen arching across the cord with a very well-defined lower edge. From such as these cases descend in degree of eligibility till we find them where hardly any muscular fibres are arising from Poupart's ligament at all, where there is no lower edge demonstrable in the position where the arciform fibres should be and where the muscle present is definitely cremasteric. A case is thus eligible for radical cure in proportion to the abundance of muscular fibres arising from Poupart's ligament. A muscular curtain forms a live barrier to the intra-abdominal pressure while fibrous tissue is but mechanical. Nature has given us a happy combination of both. The mechanical always remains with some degree of tension, but the live barrier may have entirely disappeared, and in such a radical cure operation is but a patched up stop-gap proceeding at the best. On the other hand, where the living curtain is in good order and of decent size the surgeon can leave his patient with an abdominal wall almost without a blemish and practically as good as in an individual with no rupture or any tendency to it.

Having demonstrated the inner aspect of the external oblique aponeurosis (as far as it is in connexion with the canal area) by sweeping away the scanty areolar tissue with the forefinger the next step is to lift the cord partly out of its bed. It is unnecessary to separate the fibres of the cremaster or to open the infundibuliform fascia, and by so doing the nerve is in much danger of being divided. The left forefinger is dipped beneath the cord to the inner side of the centre of the canal and at the same time the edge of the arciform fibres is lifted gently upwards and outwards by a blunt hook in the hands of an assistant. Any cutting of the fibres of the internal oblique is, to my mind, a most mischievous proceeding, quite opposed to the principles which

should govern the operation of opening the abdominal wall. The forefinger pushed below the cord and then upwards thins and spreads this out so as to bring into view the denser tissues of the sac. It now shows in the same position as does the tense sac in a strangulated hernia. It is quite unnecessary, at this stage at all events, to push the finger right through; all that is wanted is sufficient pressure to enable the sac to be demonstrated and seized with forceps. The infundibuliform fascia can be torn through with two pairs of dissecting forceps and the sac gently eliminated without the cord (which has undergone a minimum of disturbance) having been entirely dislocated from its bed. This attacking of the sac above and behind is of importance. It guarantees the integrity of the nerves in front, it does not fray out the cremaster, and it enables veins to be lifted by dissecting forceps off the sac which is plainly shown and can be disengaged from the surrounding parts without damage to the veins. There is less inclination to strip the veins and other structures from the sac instead of loosening the sac from them. With the acquired sac and with a funicular sac which has closed somewhere in the canal the sac may be picked up anywhere by the manœuvre just described, though of course the lower margin of it is the easiest to pick up, but when dealing with a congenital sac—namely, a sac extending to the testicle (the curved lower extremity will, of course, not be seen) by far the readiest and best way of eliminating the sac from the cord is to begin high up near the deep epigastric artery. There the serous membrane is not so intimately associated with the cord and the vas deferens will allow the sac to be much more easily dissociated from it than lower down. If it is attempted to separate the congenital sac low down in the canal the surgeon will generally find himself after a time with shreds and streamers of serous membrane instead of the tube of sac which he will preserve if the elimination is started up above as near the point of divergence of the constituents of the cord as possible. In any case the sac must be cleared up to the level of the artery. A small pad of fat is very generally met with (even when there is but little in the cord lower down) just below the level of the epigastric artery. It runs up between the artery and the sac and may be continuous with the fatty covering of the bladder. It has a peculiar consistence and is, I believe, as a rule not at all closely attached to the sac. I have come to look for it in every case. It should be inspected carefully, as there are always possibilities of the bladder itself being in close juxtaposition. I like to see or feel the deep epigastric artery, but this aforesaid pad of fat is a very good landmark when it is small and quite differentiated from any fat in the cord. Some traction is made upon the sac when its elimination from the cord is completed, the pad of fat is gently disengaged, and the sac is tied with catgut just below the point where it is becoming parietal peritoneum. When the sac is thin and of little volume, the internal ring small and in proper position, and the muscular curtain of internal oblique sufficient the ligature need only encircle the small calibre of the sac and not transfix it. The part to be removed is cut short and with the release of tension the butt-end retreats rapidly behind the deep epigastric and disappears under cover of the muscular wall. This elasticity shown by the peritoneum is always encouraging, as it ensures that the previous point of exit of the hernia is well out of the way of the internal ring and that it has in front of it the vital force of the muscular curtain and not fresh scar tissue induced by the operation. Any small puckering, any slight inclination to pouching, does not matter if the pucker is supported by a sufficiency of muscle which when acting shuts down on the only possible place where pouching can become actually hernial. When a satisfactory muscular curtain exists deep Bassini sutures must be not only unnecessary but actually harmful, throwing the muscle in action out of gear and preventing it from forming an evenly-resisting barrier to the internal pressure. Thus in cases where the anatomical conditions lend themselves to a radical cure the surgeon may perform an operation which, while destroying no structures in the attainment of its end, removes that which is useless and harmful and leaves the part in the normal condition without any artificial additions.

In this operation, which can often be performed in adolescents and young adults, the skin is cut, which is harmless, and the sac is removed, which is needful. Nothing else is interfered with more than very slightly and temporarily. The points which I would urge are the skin incision well above Poupart's ligament and well away from the pubes, the separation of the fibres of the external oblique aponeurosis at a suitable spot, the separation being carried well towards the muscular portion, the sparing of the external ring, the dislocation but partial of the cord from its bed, and the elimination of the sac from above and therefore the preservation of the nerves, the whole to be accomplished with little or no bleeding—an advantage to be attained with great gentleness and the use of dissecting forceps. Apart from the unworkmanlike appearance of a sloppy operation area, bleeding much inconveniences the surgeon and damages the tissues. It obscures the view, necessitates constant sponging, and irritates the delicate areolar planes, which become more or less loaded with blood not capable of being removed. The serous exudation is much greater and the tissues are much weaker and sodden. In addition to these immediate disadvantages there is the grave though unlikely occurrence of thrombosis in the veins of the cord with its possibilities of pneumonia and other distant disasters. The absence of the deep sutures is a gain in two directions: the unimpeded muscle acts as nature meant it to, and there is no foreign body at all in the depths of the wound, no silk with tension on it, and no over-chemicalised catgut.

Unfortunately not all herniæ are susceptible of these innocent measures, but those which are, and they are an increasing number since subjects present themselves so early in life now, allow the surgeon to consummate an operation which in its aim, in its method, and in its results is practically perfect.

Melbourne, Victoria.

## IMPERIAL BRITISH PHARMACOPŒIA: NOTES ON SOME INDIAN DRUGS.[1]

BY WILLIAM MAIR, F.C.S.

IN response to an invitation from the distinguished President of the British Pharmaceutical Conference to indicate which of the more important unofficial drugs indigenous to British India and in actual use by native and European physicians would be likely to present features of practical interest and utility to pharmacists in this country and to pharmacists generally the following brief details are submitted. I should add that my experience is limited to Calcutta, which may be taken to be fairly representative of the Bengal Presidency, and the drugs which I propose to deal with are well known throughout India. The promised early publication by the General Medical Council of an Indian and Colonial Addendum to the British Pharmacopœia of 1898 (which is expected to be authorised for issue by the end of the present year) and the consequent completion of Professor Attfield's worthy ideal of the expansion of that volume into an Imperial British Pharmacopœia suggest the desirability for some acquaintance with such of its probable contents as may be useful to pharmacists outside those portions of the empire for the special use of which products and preparations are to be officially recognised. Of the 40 or 50 medicinal substances and the practically corresponding number of pharmaceutical preparations the greater part (about 30) represents those requested by India and incorporated in Professor Attfield's Draft Addendum, now proceeding to a final draft through the hands of influential experts in India.

The question that has presented itself to some practical pharmacists is whether any or all of these drugs are likely to come into use in medicine in this country and which are likely to be worthy of attention that have been proved to be good for specific purposes in the land of their origin. It is not unnatural to expect that the great British dependancy which has given us nux vomica, cannabis indica, sandal wood, and kino and chiretta should still possess the secret of others of equal individuality. Whether that is so or not, whether there are lurking in the bazaars drugs of subtle action or potent virtue calling for a wider sphere of influence, it may not be for me to express an opinion. There are drugs in everyday use in the districts, as distinguished from the Presidency cities, the names of which even are not known to Europeans, but it is hardly possible that any of

[1] A paper read before the British Pharmaceutical Conference on July 25th, 1900.

equal value to those which I have indicated or any drug of therapeutic interest not already represented in the Pharmacopœia could have escaped the notice of observers and investigators.

To proceed to the analysis of the 30 medicinal products of India likely to be included in the forthcoming Addendum as a selection bearing the stamp of official approval there fall to be eliminated those that are intended for use in India only as local substitutes for, and alternatives of, the official imported products. It does not directly concern us how far calumba could be replaced by coscinium, its former arch adulterant; whether the wood of samadera would equal that of quassia, unless the latter were becoming scarce and dear; how far the root bark of toddalia may represent casparia or cissampelos would pareira; to what extent the leaves of datura alba are equivalent to those of belladonna in terms of the relationship of daturine to atropine and hyoscyamine; whether also cotton-root bark will make an infallible substitute for ergot; or whether the telini fly will not yield more cantharidin than the true cantharides, or the very doubtful tylophora leaves or the root bark of calotropis (mudar), both advocated for many years but never used, supersede the indispensable ipecacuanha which, unhappily, has not yet been successfully cultivated on a commercial scale in India. Few of these alternatives are likely to acquire much significance to pharmacists outside of India or to importers. Butea gum may come to be recognised in this country as in some measure, though very imperfectly, representing the official kind, in which case the question presents itself whether the use of the Addendum may not be reciprocal and whether those country medicines to be recognised for use in India instead of the imported drug may not be officialised for use in this country in time of scarcity. There are others, however, of more strictly commercial importance which would be better considered from that point of view, but for which recognition is desirable for the adjustment of official standards. These are gummi indicum (dhaura gum), when clean and good quite equal to gum acacia; the oil of gingeli seed (sesame oil), exported from India in oil and seed to the value of nearly £1,000,000 sterling per annum, approximating to olive oil; and oleum arachidis (nut oil), proposed to be "employed in Indian pharmacy whenever olive oil is ordered in official preparations," to quote the words of the Draft Addendum. Wherein the question of reciprocity would again arise. It is fortunate that many important points of chemical, physiological, and therapeutical detail in reference to these articles will now be finally settled by the committees entrusted with their pharmacological investigation, but it has to be said that some of the alternatives proposed which have most probably, however, been subsequently reconsidered are not known in actual use, and it is difficult to understand why, for instance, crinum bulbs should have been recommended for use instead of squill, while no mention has been made, so far, in any of the published reports of the bulbs of either urginea indica or of ledebouria hyacinthoides, the squill of the bazaars, largely and regularly used in Government dispensary practice. I omit also from consideration at this time betel leaves and jasmine flowers, both used in the fresh state for purely domestic purposes.

The following may be found to be worthy of a more definite place in medicine in this country; some are old friends seeking re-introduction. They would repay attention and trial in the conditions indicated. I ought to state here that it was my intention to have accompanied this paper with formulæ and processes for the preparation of each drug which I would consider most suitable. It has not been found possible, however, to complete the long series of experiments necessary to arrive at reliable data. The details of these processes will appear in full, however, in this paper as published in the Year Book of Pharmacy.

*Andrographis paniculata* (the kreat, the dried herb; shown).—Perhaps this is the most worthy of recognition of the many simple bitters of India, in addition to chiretta, not as a substitute for it. One of its vernacular names implies "king of bitters." It contains a neutral non-alkaloidal bitter principle as yet unnamed and has febrifuge properties which chiretta does not possess. For that reason it is appreciated in India and is frequently prescribed in convalescence after fevers; it has been employed successfully in influenza. Fluid extract. (A formula will appear in the extended paper as published in the Year Book.)

*Belæ fructus*.—Although tried in this country and found wanting the sacred bael is, as it has always been, the most trusted of Indian indigenous medicines. It is constantly prescribed by European physicians and is of unquestionable value in diarrhœa, avoiding, especially in children, the constipation attending the use of astringents. An aqueous fluid extract from the pulp of the fresh half-ripe fruit, instead of that "imported in dried slices" will redeem its character. Another preparation in great favour in India is a confection of bael, sometimes aromatised, a valuable dietetic in teaspoonful doses in chronic diarrhœa, made from the pulp of the fresh just ripe fruit freed from the seeds by passing through a coarse sieve and preserved with sugar. For the extract the fruits, freshly imported whole, would require to be used; the confection would be best prepared on the spot and imported after the manner of tamarinds and chutnies.

*Ispaghula* (seeds of Plantago ovata; shown).—These minute boat-shaped seeds are imported from Persia. They contain no medicinal principle whatever but are peculiarly successful as a remedy in diarrhœa and dysentery and as an intestinal emollient in gastric catarrh. The simplicity of their action is such that no preparation can be suggested. One drachm of the cleaned seeds is infused for 20 minutes in five ounces of cold water, sweetened with sugar, and the resulting mucilaginous mass is swallowed unstrained. The action is purely mechanical, the abundant, bland, adherent mucilage allaying the intestinal irritation. They are employed in the manner indicated by distinguished officers of the Indian Medical Service.

While this paper is in no sense a criticism of the published material proposed for the Addendum, the limit of time for the presentation of comments and suggestions as invited by the editor (significant of a new era in Pharmacopœia-making) having passed, I cannot refrain from expressing the hope that some of the following may have been deemed equally worthy of recognition with the foregoing.

*Holarrhena antidysenterica* (kurchi, root-bark; shown).—This, perhaps, comes next to the bael in the estimation of European prescribers in India among indigenous medicines. The active principle is the alkaloid kurcheine and the properties are mildly astringent, anti-dysenteric, and febrifuge. Both a solid and liquid extract are used in India, the latter being the more desirable. (A formula and process will be presented in the Year Book.)

*Garcinia Mangostana* (mangosteen rind; shown; imported from Singapore).—This drug contains tannin, resin, and a yellow crystallisable principle, mangostin, and is used popularly like kino or catechu, but not much prescribed, in the form of a syrup made by boiling the rind in water and adding sugar to the strained decoction. A better process is to make the syrup from a fluid extract from 20 per cent. alcohol.

*Carica Papaya*.—The importance of the papaya fruit [shown] cannot be over-estimated, and it may be found to have been given a place in the ultimate Addendum for the sake of the well-known papain, as an alternative to pepsin, if only on the ground of caste prejudice. An elegant liquor papain which is made from the fresh milky juice and preserved with glycerine is also in vogue as a successful "vegetable pepsin." Its action is, of course, distinct from that of pepsin.

*Eugenia Jambolana* (jambul seeds; shown).—If this drug has not fulfilled all that was expected of it as a remedy in diabetes it remains to be disproved whether it is not of use in the treatment of diabetes. All that need be said is that it is used by the people and prescribed by distinguished native physicians. The secret may perhaps lie in making the aqueous liquid extract from fresh seeds from ripe fruit.

*Gynocardia odorata* (chaulmugra seeds; shown).—The value of the expressed oil in eczema, psoriasis, and allied skin affections is too well known to call for comment. It is regularly and largely prescribed for external use and in the style of a cream with equal parts of the oil, lanolin, and lime water.

*Adhatoda vasica* (leaves shown).—This drug is used in pulmonary affections and is regarded as an internal antiseptic in phthisis. It contains a white crystalline alkaloid-vasicine, sparingly soluble in water but soluble in alcohol. The drug is strongly alkaline, due to the presence of potassium chloride. The only preparation which I have seen prescribed is syrup vasak, which is best made from a liquid extract.

I have the honour to acknowledge my indebtedness to Professor Wyndham R. Dunstan, F.R.S., for authentic specimens from the Imperial Institute collection; to Mr. E. M. Holmes, F.L.S., for other specimens; and to my friend Mr. Frederick Bascombe, F.I.C., for undertaking and

carrying through the pharmaceutical work involved in the laboratories of Messrs. Fletcher, Fletcher, and Co., Limited, to whom also my thanks are due.

Edinburgh.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A NOTE ON THE SAFEST METHOD OF REMOVAL OF THE APPENDIX.

BY A. A. WARDEN, M.D. GLASG. AND PARIS,
ASSISTANT, DR. DOYEN'S SURGICAL CLINIQUE, PARIS.

APPENDICITIS has become so frequent an alarm in daily practice and is so treacherous in its behaviour that surgeons would do well to be agreed upon the method to be followed when removal of the appendix is decided upon. There are at present three methods in use which I venture to term (1) the continental method; (2) the English method; and (3) Doyen's method, which is best because it is the simplest and safest, and which I call Doyen's because I believe Doyen to be the first surgeon who has described and used it.

1. The continental method—that commonly followed by Terrier, Hartman, and most Paris surgeons—is simply to ligature the inflamed and diseased appendix near its base, resect it with the thermo cautery, cauterise the stump, and then let it fall back into the abdomen. This method must be admitted to be faulty because it leaves loose and open in the abdomen the cauterised lumen of the appendix which, even if effectively cleansed, is almost certain to adhere to neighbouring abdominal contents. If ineffectively cleansed pus and a peritoneal abscess (and perhaps generalised peritonitis) are inevitable.

2. The English method, associated with the names of several surgeons, is to dissect back a collarette of peritoneum which is finally stitched over the ligated stump of the appendix. This method is an improvement on the former one but is also faulty in being more difficult and in exposing the field of operation to a leakage of the bowel contents in the event of an accidental puncture or opening of the appendix. In the case of an inflamed and diseased appendix this accident is difficult to avoid if attempts are made to strip off the serous covering.

3. Doyen's method I consider to be the best because I see no valid objections to be urged against it. It is simple and rapid; the appendix is not opened, so there is no possibility of infection of the peritoneum by escape of bowel contents; and lastly, by invagination of the stump, in the event of further infection and suppuration the pus is bound to discharge into the lumen of the bowel and to be evacuated naturally per anum. I will describe the little operation briefly, step by step. The little mesentery of the appendix is first ligatured with a small silk ligature to free the appendix laterally. Then (1) the base of the appendix is gently crushed with Doyen's small clamp. Almost any forceps suffices for this purpose if strong enough and broad enough to completely occlude the appendix for a breadth of, say, a quarter of an inch; (2) a fine silk ligature is thrown round the base of the appendix in the furrow left by the clamp; (3) the appendix is then removed by the thermo-cautery cutting close to the ligature; (4) a purse suture is then made in the serous covering of the cæcum close round the base of the appendix (as this purse stitch is drawn tight the little stump is invaginated so that all is completely closed); and (5) for safety a second fine silk purse stitch is made and the little pucker of the first stitch is similarly invaginated and the ligature is gently tightened. The result technically is perfect and certainly this is the most aseptic method of removing the appendix.

Mr. C. B. Lockwood in a recent article[1] entitled "The Organisation of Aseptic Operations and Some of the Causes of Failure" refers to 10 cases of operation for appendicitis in which no pus was found and yet in which the abdominal wound suppurated in three cases with extrusion of some, if not all, of the sutures. He came to the conclusion that some of these failures were due to the nature of the operation and that, as a matter of fact, the wounds became infected during the removal of the appendix. Mr. Lockwood adds that he has histological evidence that even in non-suppurating cases the inflamed tissues round the diseased appendix are often infected with bacteria and that, therefore, it is not to be wondered at that, after appendix operations, buried silk sutures are apt to be extruded. "I have not abandoned hope," he says, "that we shall learn how to bury silk in the abdominal wall in appendix operations." I venture to express the belief that this hope would be more speedily realised by the general adoption of this aseptic method of removing the appendix.

Paris.

[1] Brit. Med. Jour., Feb. 24th, 1900.

### NOTES OF TWO CASES OF PERNICIOUS ANÆMIA TREATED WITH HOMMEL'S HÆMATOGEN.

BY HERBERT MEGGITT, L.R.C.P., L.R.C.S. EDIN.

CASE 1.—A man, aged 35 years, came to me in February, 1899, complaining of giddiness, shortness of breath on exertion, and general languor. His skin was of the peculiar lemon tinge so often seen in these cases. The patient had not lost flesh and in fact he thought that he was stouter than formerly. Inquiry elicited the fact that he had had a family worry some time previously and that he had never felt the same man since. He had begun to feel weak and unable to exert himself and his friends at the same time began to notice his increasing pallor. The urine was high-coloured but free from albumin. The ordinary causes of anæmia were carefully eliminated and the case was diagnosed as one of pernicious anæmia. An examination of the blood resulted in the discovery that its specific gravity was reduced 1040. The corpuscles did not adhere in rouleaux and their number was greatly reduced, but what was most noticeable was their great variation in form and size; nucleated red corpuscles were also present. Arsenic in gradually increasing doses, in the form of Fowler's solution, was given and continued for some time, but with absolutely no good effect. At the commencement of this treatment the patient was kept in bed. The diet ordered was chiefly farinaceous. Iron was then administered, but with like results. The patient was evidently getting weaker. Happening to mention the case to a friend he advised me to try Hommel's hæmatogen. It was given daily with the best results for four and a half months. A further examination of the blood showed that the corpuscles were assuming their natural shape and their number had increased, but the more tangible and satisfactory result was the condition of the patient who was able to resume his work with a freedom from all his previous symptoms.

CASE 2.—This case was interesting from the fact that the patient had been treated with salol after the failure of arsenic with marked improvement, but unfortunately with a relapse. The patient was a woman, aged 38 years, who complained of faintness, palpitation, loss of appetite, extreme debility, and constant vomiting. The pallor of the skin was striking. The mucous membranes were pale, there was œdema over the malleoli, and there were some petechial hæmorrhages on the lower limbs. It happened that the patient when residing elsewhere had been under treatment for the same condition and she thought that she had been cured, but after a period of four months the old symptoms returned. Correspondence with her previous medical man revealed the fact that she had been treated with arsenic and later with salol with apparent benefit. I therefore determined to commence the treatment with the administration of Hommel's hæmatogen. This was continued on and off for a period of six months, during which time repeated examination of the blood was made, marked improvement being noted.

Tottenham, N.

### A CASE OF SUDDEN DEATH SHORTLY AFTER OPERATION.

BY W. BOLTON TOMSON, M.D. DURH.

A SOMEWHAT delicate overgrown child, aged 12 years, was operated on for adenoids and enlarged tonsils at the Children's Hospital, Luton, on July 7th, at 3.20 P.M. Chloroform was administered through a Krohne's inhaler to start with, and later from the ordinary flannel facepiece.

The child was very nervous, and from the first did not breathe well, the colour and pulse, however, still keeping good. Chloroform was therefore purposely not pushed to complete anæsthesia, but the gag was introduced when voluntary movements ceased, there being still a slight corneal reflex. The tonsils were first removed, but as there was considerable struggling the head was drawn well over the edge of the bed, and a little more of the anæsthetic was given. The adenoids were then removed in the usual manner, the operation being followed by, if anything, less bleeding than usual. The child was at this time breathing well, and had to be held down, having partly recovered from the anæsthetic but not yet being conscious. Shortly afterwards the colour suddenly changed, the respiratory movements became feeble and the pupils dilated, and the pulse grew very weak. Artificial respiration was immediately commenced by the Silvester method, the tongue was caught in tongue forceps and drawn well forward, injections of ether and strychnia were given, and hot-water bottles were applied between the thighs and to the soles. At first there was slight improvement, but spontaneous breathing never completely returned, though faint respiratory movement was perceptible for nearly three-quarters of an hour. The heart sounds grew fainter and fainter and finally ceased. Rhythmic traction on the tongue had meanwhile been steadily practised (as advocated by Laborde) and as a last resort, to obviate any possibility of laryngeal obstruction, tracheotomy was hurriedly performed. There was, however, no attempt at rallying and the heart sounds and breathing having ceased for some time artificial respiration was abandoned after about one and a half hours.

The immediate cause of death is not easy to state. As far as the anæsthetic was concerned it was Messrs. Duncan and Flockhart's best, and a remarkably small dose was given, only one and a half drachms (measured). Anæsthesia was, moreover, at no time complete. Further, after the operation had been concluded and the administration of the anæsthetic had ceased for some minutes, there was partial recovery, as evidenced by the struggling. The heart was carefully auscultated before the operation and no abnormality was detected. Of obstruction to the respiratory passages, such as might have been caused by spasm of the glottis, or accidental sucking in of blood there was at no time any evidence. Air entered and left the chest during artificial respiration with an audible noise, and there was no stridor. There was no intense cyanosis or venous engorgement, such as one might expect were asphyxia the cause of death, but only a lividity of the face and blueness of the eyelids, which varied with the success of the artificial respiration. There was no vomiting during the operation or subsequently. Under these circumstances, therefore, it seems to me to be probable that death was due to gradual cardiac paralysis.

Luton.

DEATH OF A CENTENARIAN.—The death occurred recently at Lapford, Devonshire, of Mildred Jerrett, who, according to the register at the parish church, was baptized in February, 1800.

THE LEAGUE OF MERCY: PRESENTATION OF THE ORDER OF MERCY.—Their Royal Highnesses the Prince and Princess of Wales, as Grand President and Lady Grand President of the League of Mercy, entertained the presidents and vice-presidents of the league at Marlborough House on July 27th. The guests assembled in the garden and on the arrival of the Prince and Princess were presented to their Royal Highnesses. During the course of the afternoon the Prince and Princess of Wales in accordance with the statutes of the league presented the Order of Mercy for services to the league, and also for services in connexion with the London hospitals, to the following: Sir Whittaker and Lady Ellis, Mr. E. A. Hambro, and Mrs. Herbert Allingham.

UNIVERSITY COLLEGE, BRISTOL.—A further addition has just been made to the structure of University College, Bristol. The new building, which closely adjoins the medical school, has been erected at a cost of about £6000. It contains on the ground floor a library about 46 feet square, also several class-rooms and preparation rooms for biological work. On the upper floor is an examination hall 88 feet long by 46 feet high and a gallery has been arranged at one end. The building is approached by an entrance in the front and lavatories and cloakrooms have been provided.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.**—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

## SALISBURY INFIRMARY.

### A CASE OF CEREBELLAR TUMOUR IN WHICH THE RESPIRATION WAS ENTIRELY SUSPENDED FOR FOUR HOURS BEFORE CESSATION OF THE CIRCULATION.

(Under the care of Dr. E. T. FISON and Mr. L. S. LUCKHAM.)

A YOUTH, aged 16 years, was admitted into the Salisbury Infirmary on Feb. 3rd, 1900. He complained of great pain in the head, back, and heart, and of vomiting. He had been in bed for the past three weeks, and had been sick after all solid food. His sister stated that during the paroxysms of pain he became quite rigid, but that he was not convulsed. For some time previously to this he had suffered from constipation and headache. The appearance of the patient was dull and apathetic, and he was of a dusky leaden hue, and looked markedly the subject of cerebral disease; at times he appeared to be in pain, when he called out and complained of his head. The tongue was thickly coated. The temperature was only 97° F. and remained subnormal throughout, the respirations were 16, and the pulse was 70. His attitude was one of general flexion and he kept in a lateral position; the head was much retracted and on extension of the neck he called out with pain. He was very irritable and objected to be roused, and at times feigned to be asleep. There was no strabismus, but the mouth was drawn up slightly to the right as though the left buccinator was a little paralysed. The tongue was protruded straight. The abdomen was retracted. The hand-grasps were equal and there was no paralysis of any other muscle; the knee-jerks were at times present and at others were absent. Kernig's sign was absent. Sensation was normal. The bowels were obstinately constipated. The urine contained no albumin or sugar. There was nothing abnormal seen in either ear. The ophthalmoscope showed marked papillitis with considerable swelling, estimated to be about 4 D. There were also some hæmorrhages. The left optic disc seemed more inflamed than the right. The vision was $\frac{6}{9}$ in both eyes. There was nothing distinctive about his gait as he was so weak that he could hardly stand alone.

For a few days after admission he kept his back arched and at times he had pleurosthotonos with the concavity to the left, but his general position was on the right side. He was only occasionally sick. He often called out with the pain in his head, but it was more of a moan than the piercing cry of meningitis. He generally located the seat of the pain to the left side of the back of the head. On Feb. 8th he had an attack of rigidity of the limbs and trunk lasting for three or four minutes. At times he was more drowsy than at others and the facial paralysis varied also considerably, sometimes being absent. On the 12th a consultation of the staff was held and the general opinion expressed was that the patient had a cerebellar tumour, and Dr. Fison ventured to locate it in the left lobe of the cerebellum and thought that it was probably a tuberculous tumour. An operation was decided upon, but before it was done it was decided to increase the iodide of potassium to 15 grains, it having previously been given in smaller doses. This delay was unfortunate, as instead of improving the patient steadily got worse. The pain increased, he lost control of the sphincter vesicæ and the sphincter ani, and an operation was definitely decided upon for Feb. 22nd.

At 9.30 A.M. on that date chloroform was given by the open method. There was no corneal reflex, the pupils were contracted, and he appeared to be semi-conscious before the administration of the anæsthetic was commenced. At 9.50 A.M., Mr. Luckham operating, a crescentic skin incision was made behind the ear, having for its centre a point one and a half inches behind the centre of the external auditory meatus and a quarter of an inch below, when the patient was noticed

be turning very livid. About one and a half drachms of chloroform had been used, but the anæsthetic had been discontinued for some minutes previously. As the lividity was increasing the tongue was drawn out and artificial respiration was begun, and during the next four hours till his death at 1.40 P.M. he was kept alive by artificial respiration, on cessation of which he at once became livid again and the pulse became imperceptible. During the whole period the pulse varied considerably, at times being imperceptible, at others 80 per minute and of good volume, and at others 140; of true respiratory action there was none, the only approach to it being an occasional reflex action of the pharyngeal muscles. The battery was applied to the præcordium and to the phrenics and diaphragm. Strychnine and brandy were injected and the external jugular vein was opened.

*Necropsy.*—At the post-mortem examination on the next day, on taking off the skull-cap there was found to be great tension of the dura mater; on removal of the brain a large amount of cerebro-spinal fluid was seen at the base of the brain, at least five ounces together with what was in the ventricles. In the left lobe and at the edge of the cerebellum a hard mass was felt. This mass on section was of about the size of a penny, fairly circular, firm to the knife, and yellowish-grey in appearance; around the tumour there was a fibrous capsule, and exterior to this there was a ring of red softening, so much so that it was possible easily to lift the growth from its bed. It was not made out definitely that it pressed upon the seventh nerve, but doubtless it could have done so in that position. The lateral ventricles were very much dilated and the foramen of Monro was large and the veins of the choroid plexuses were much engorged. In the chest there were many old adhesions of the pleura, especially on the left side. Nothing else abnormal was found in the body but a few large mesenteric glands. Dr. C. Slater of St. George's Hospital kindly examined the growth microscopically, and reported: "I think the tumour is undoubtedly tubercular, and I have found bacilli unmistakeable but very scanty—one or two per section."

*Remarks by* Dr. FISON.—The diagnosis of the above case presented no marked difficulties if the signs and symptoms could be definitely relied upon. The first question arose, Was it meningitis or tumour? This seemed to be easily answered, as the case had been of too long duration for a tuberculous meningitis; still, there are rare cases of chronic hydrocephalus which come on as a result of posterior meningitis and which present the same signs as tumour. Passing to the more difficult matter of its localisation the signs seemed to point to a tumour in the cerebellum; this was shown by the retraction of the head, the attacks of bilateral rigidity and persistent posterior pain, and also by the great swelling of the optic discs, cerebellar tumours causing more intense papillitis than tumours in the hemispheres. Having located it in the cerebellum, which of the three lobes was it in? There was no vertigo or reeling in walking which is associated with growths in the middle lobe, and the fact that the left facial nerve was involved seemed to point to the left lobe, this nerve presumably being involved in its course to the internal auditory meatus. Facial paralysis also is generally on the same side as the lesion in the case of tumour. It did not seem probable that the nucleus was involved, as it would be difficult then to understand that one cranial nerve should alone be involved. It would seem strange that the auditory nerve should be unaffected, but it is an observed fact that sensory nerves are capable of withstanding more pressure than motor (e.g., crutch palsy—paralysis in Pott's spinal disease). Besides this the boy complained constantly of pain in the left side of the back of his head. As to its nature this could only be surmised; there was no history or sign of syphilis, and no improvement took place under iodide of potassium. But considering that tuberculous masses form the bulk of cerebellar tumours in the young, it seemed probable that this was a tuberculous growth. Thus Allen Starr, out of 299 cases of tumour in patients under 19 years of age, found that 152 were tuberculous.

This mode of death in tumour of the brain receives but little notice in the text-books on medicine. Thus Byrom Bramwell in Allbutt's System of Medicine makes no mention of it; he says, however, that Cheyne-Stokes breathing occasionally occurs, particularly when the tumour is near the respiratory centre. Hilton Fagge says that death is often caused by cessation of the respiration, and in one instance the pulse went on for 35 minutes after the respiration had ceased. The other works on medicine which I have been able to consult make no mention of it at all. I know, however, of a case that occurred in the Hospital for Sick Children, Great Ormond-street, where respiration failed 30 hours before death ensued, artificial respiration being kept up for the period. I am told, also, that at the National Hospital for the Paralysed and Epileptic, Queen-square, this condition is by no means rare.

I have been able to come across only one paper in literature relating cases; this is by Sir Dyce Duckworth.[1] He reports four cases of cerebral disease in which the respiration ceased for some hours before the circulation. The first two cases were the subjects of abscess, one in the cerebellum and one in the temporo-sphenoidal lobe. Both were trephined, and in neither was the abscess opened; in neither did the trephining restore the respiration which ceased three and three-quarter hours and four and three-quarter hours respectively before the circulation. In the third case, one of abscess in the temporo-sphenoidal lobe, at midday artificial respiration had to be resorted to, and as the patient improved an anæsthetic was given and trephining was done; the abscess was found and opened and the respiration much improved, death, however, occurred at 6 P.M. on the same day. The fourth case of the series is one of hæmorrhage into the brain and ventricles of slow onset; trephining was done, and about half an ounce of blood was withdrawn from the right ventricle without any effect on the respiration. The heart ceased five hours after the respiration. Professor W. Macewen operated upon and opened a cerebellar abscess in a subject whilst artificial respiration was being performed. The respiration soon afterwards became voluntary. Nicoll[2] reports a case of supposed temporo-sphenoidal abscess in which during the preliminary stage of trephining the respiration ceased and artificial respiration had to be resorted to. It was determined, however, to open the skull; this was done and the patient began to breathe. A large malignant tumour was found growing from the petrous bone. The patient lived for two and half months afterwards. Every experimenter[3] upon this subject has proved that increase of intracranial pressure manifests itself more upon the respiratory centre. This centre appears to be more sensitive and vulnerable to pressure, but not so vital as the vaso-motor centre. Thus, by pressing upon a meningocele children can be put to sleep and the respiration is slowed. In animals, intracranial tension experimentally produced slows, and then abolishes, respiratory movement before the heart ceases action.

It seemed possible at first that the patient was suffering from chloroform poisoning. This, however, on second thoughts seemed to be unlikely, as, though in death from chloroform respiration at times ceases before the circulation, yet there is no great interval between the two events. Chloroform poisoning in its later stages produces a fall of the venous cerebral pressure, this being due to a general fall in the arterial pressure, and also due to inhibition of the vasomotor splanchnic mechanism, so that the patient bleeds to death into the veins of the splanchnic area.[4] In this case the arterial pressure kept good so long as artificial respiration was kept up. From the cases quoted above it would seem far more likely that relief to the respiratory centre will follow if the abscess be evacuated or the tumour removed, it not being sufficient to remove only a crown of bone. The explanation is that in greatly increased intracranial pressure the bulb blocks up the spinal canal and no cerebro-spinal fluid can be forced out by the atmospheric pressure into the subdural space in the cord. What one certainly has learnt is that even though the respiration ceases the operation ought to be continued at all hazards, for there is certainly a chance of voluntary respiration returning if the growth be removed. I certainly regret that this was not done in this case, especially as the growth was exactly situated under what would have been the trephine hole, and it would easily have been shelled out. Whether this condition is more common in connexion with tumours of the cerebellum than of the hemispheres I do not know. At any rate it seems likely that respiratory failure would occur in an earlier stage of the growth or abscess, for, shut off as it is by the tentorium cerebelli from the fore brain in a small space, the effects of pressure must exert themselves sooner than in the case of growth in the larger space occupied by the hemispheres.

[1] Edinburgh Medical Journal, New Series, 3, 1898.
[2] THE LANCET, Oct. 29th, 1898, p. 1114.
[3] Hill: Allbutt's System of Medicine, vol. vii., and Journal of Physiology, vol. xviii., Nos. 1, 2, and 4, and vol. xxi., Nos. 4 and 5.
[4] Ibid.

# THE LANCET.

*LONDON: SATURDAY, AUGUST 4, 1900.*


WE publish in this issue three of the addresses delivered before the British Medical Association at Ipswich in plenary congress—namely, the Presidential Address of Dr. ELLISTON, Dr. PYE-SMITH'S Address in Medicine, and Mr. TREVES'S Address in Surgery. Dr. ELLISTON'S address was one to which he had evidently given time, thought, and knowledge, and with very happy results. In particular we are obliged to him for giving us in his brief review of the progress of medicine during the last two centuries the individual exploits of eastern county practitioners and savants. It is not the first time that Presidents of the British Medical Association have in their presidential addresses recorded the medical history of the locality where the congress is meeting, and we think that it is an example which other Presidents might well follow. The difficulty of finding themes upon medical and allied topics is now very acute, while the fact that we are at the close of the century has brought upon the medical world during the past 12 months an enormous mass of *résumés* of the progress of medicine viewed from general and all sorts of special standpoints—and as the century is not yet complete we may expect to meet with more addresses of similar scope and aim. Such summaries of medical and surgical knowledge, if only approximately exhaustive, make orations which are far too scrappy to be interesting to any audience, as those of us who have heard them and read them know. If Presidents of the British Medical Association will desist from attempting so large a programme as a general review of the progress of medical science, and will year by year address us from the standpoint of residents in the different medical centres of England, their contributions to our knowledge will be exceedingly welcome. In this way a complete history of the prominent members of the medical profession in the country will be formed and a hero-worship of the most practical sort will be promoted. For whereas a young man may feel that the fame of WATSON, GULL, or HUMPHRY—to mention three distinguished East Anglians—can never be his while he hears of their proud position in an enormous scientific hierarchy, he is not so certain that his own good work will of necessity go unrecognised when he learns the identity of his early environment with that of many medical heroes.

Dr. PYE-SMITH in his address deals with the well-known question as to whether medicine should be regarded as a science or an art, and we need hardly say that his contribution to the controversy is thoroughly interesting. "If," says Dr. PYE-SMITH, "medical science without art is inefficient, medical art without science is not only unprogressive but almost inevitably becomes quackery." In this sentence he seems to us to sum up the points at issue. Not that we would have had him briefer, for a good thesis loses nothing by being proved. Medicine, especially practical therapeutics, cannot be regarded as a matter of cold science. General rules cannot be laid down to guide us in treatment, except with a saving clause that the rules are so general that they must be freely departed from when sick individuals will not conform to the rules. The most logical deductions from chemistry and physics when applied to the mechanism of physiology, the most ingenious explanations of symptoms and sequelæ based upon what we regard as flawless pathology, have often failed to save life and will often again fail. For while one test-tube is the fellow of another, and one dead man behaves remarkably like another, every living individual is a bundle of complexes who refuses to be classified wholly and satisfactorily as a patient of a certain type, suffering from a certain condition, and bound to be relieved by a certain remedy. That many departments of medicine which were treated by older physicans as provinces of art have now become provinces of science is undoubtedly true; the etiology of much disease is clearer to us than it was to our forefathers, and the rational methods of prevention or cure have consequently followed. But there is still an enormous amount of work to be done and boundless experience to be tabulated and digested before the origin of many common pathological states becomes apparent and the treatment deliberately scientific. Here is where genius comes in, although Mr. TREVES is reported to have said that a medical man has no business with genius. It is genius which now and again shows us a short cut from art to science, cutting by intuition the knot that others, working according to routine, have failed to untie.

Mr. TREVES, who delivered the address in Surgery, took as his subject the contrast between the science and art of surgery in 1800 and the condition to which that science and art have attained at the present day and made somewhat dry bones speak by dint of a clear and breezy style. Mr. TREVES attributed the difference between surgery at the end of the eighteenth century and surgery at the end of the nineteenth century to four causes: an improved knowledge of anatomy, a readier method of arresting hæmorrhage, the employment of anæsthetics, and asepsis. There is no need to follow Mr. TREVES in detail while he asserts that the essential reasons of the modern extension of the fields of surgery are to be found in the employment of anæsthetics and antiseptic measures. The former has made the patient willing to undergo operations which would have been almost unendurable if he had retained his full senses, and has induced many to consent to operations who would have been unable otherwise to screw their courage to the sticking point. But, while the 40 years which intervened between the discovery of anæsthetics and the introduction of antiseptics witnessed great advances in surgical practice, the septic complications of all operations of every variety were so many and so serious that surgeons hesitated to perform operations which they knew would prove of great benefit if they should be successful, but which might end rapidly in death. The practical certainty given by the antiseptic treatment that no pyæmia or septicæmia would carry off the patient completed the value of the discovery of anæsthetics and revolutionised the practice of surgery. With regard to the value of the other two factors in the modern progress of surgery we are not so certain. The improvement in the knowledge of anatomy among the whole

body of the profession if great is only partial. It is probable that the average hospital surgeon in 1800 knew very little less of the anatomy which concerned his practice than the average hospital surgeon of the present day. No small portion of the anatomy that is now taught is perfectly useless from the point of view of the practical surgeon. The more ready methods we possess of arresting hæmorrhage make also a factor in the progress of surgery during the century which is of but little importance. The surgeons of 1800 stood in no great fear of hæmorrhage during an operation—we refer to primary hæmorrhage, of course. They applied the ligature freely, as may be seen in BENJAMIN BELL'S Surgery, the seventh edition of which was published in 1801. But they did fear secondary hæmorrhage, and rightly so, for all the ligatures or arteries were left long in order that they might come away when suppuration was fully established, and then it was that hæmorrhage often took place. The easily applied pressure-forceps of SPENCER WELLS and PÉAN are valuable assistants in a modern operation; and the much greater frequency of operations has perfected hospital surgeons in operative procedure. But for the rest, the progress of modern surgery is due to the discovery of anæsthetics and the introduction of antiseptics.

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THRICE within his reign of not quite 22 years has King HUMBERT been marked down by political vendetta. In Naples, in the late autumn of 1878, when, with Queen MARGARET and the Crown Prince, he was making a Royal progress through the streets his life was attempted by PASSANANTE, but the blow fell not on His Majesty but on his faithful Minister CAIROLI, fortunately without fatal result. Again, in Rome, during the race meetings in the spring of 1897, he was assaulted on his way to the course by ACCIARITO, and again the assassin missed his aim. For the third attempt, at Monza, on the evening of July 29th, a change of weapon was tried, and the stiletto, the favoured instrument of the Italian regicide, was replaced by the hitherto untried revolver—this time with all too deadly effect. He was shot through the heart and died almost instantaneously.

Life is cheap in Italy, but King HUMBERT'S was, perhaps, the one she could least of all spare. An exemplary monarch, he inherited all his father's courage, though certainly not his father's centripetal insight into character or the conduct of affairs. His baptism of fire at Custoza in 1866 was followed up by many an act of public duty as devoted and as fearless. He seemed, indeed, to court danger and death itself in behalf of his subjects. In the appalling earthquakes in the island of Ischia in 1881 and 1883 he was conspicuous beyond even the most reckless of the relieving force in extricating man, woman, and child from under tottering edifices, the collapse of some of which had already proved fatal. In the destructive cholera epidemic in September, 1884, his absolute disregard of self is among the most beautiful passages of history. It was in Naples that the malady exploded with deadliest effect, and the KING was at the time at Pordenone in the Venetian territory, about to open a racecourse. Barely had the news come that in one night 2000 Neapolitans had been stricken down, and that of these 1000 had succumbed as much from panic as from the disease, when he addressed the Mayor of Pordenone: "A Pordenone si fa festa. A Napoli si muore. Vado a Napoli." ("At Pordenone there is merry-making. At Naples people are dying. I go to Naples.") And to Naples he went, and for more than a week he spent many hours of each day at the bedsides of the worst cases—so near to them, in fact, that several times within the 24 hours he had to retire and substitute fresh clothes for those which had to be burnt. Again and again the Ministers and even the professional men who formed his suite implored him to "think of his dynasty and the interests of his people," and his reply, as he entered another and ghastlier ward, was always the same: "I am true to my dynasty and I am thinking of my people." And this noble progress—surely as "royal" as any history records—he maintained from day to day till the panic was allayed and the disease was in full defervescence; and he returned to Rome—whence, by the way, though without his knowledge, his food and drink had been supplied—and encountered a reception as grandly impressive as ever fell to the lot of consul or emperor on the Sacred Way—alone, in a modest pony-carriage, without retinue, with difficulty making his way to the Quirinal through the dense masses of the population whose hearts were too full to cheer.

And this is the man whom Italy, who owes her unity and independence in great measure to his House, has just seen visited by the vendetta of a faction among her sons. True, it is more than probable that that faction is in collusion with the international organisation which is in perennial conflict with the prevailing social order and that this latest "example" for the "benefit" of crowned heads or constituted authorities is the result of a drawing by lot—which might have had for its object an even more conspicuous victim than King HUMBERT. But such complicity cannot absolve Italy from her pre-eminence as the instrument of such crimes—cannot blind the world to the fact that the pet, the spoiled child of modern liberalism, has made herself the recruiting sergeant of the political assassin—the source whence anarchy draws its most numerous, its most reckless, its most effective agents, whose deeds of blood have within the last four or five years been wrought on Frenchman, Spaniard, and Austrian alike—on victims absolutely unknown to their murderers, who had become the willing tools of a junto of conspirators sitting securely in congenial darkness. More than once—notably after LUCCHENI'S murder of the Empress ELIZABETH about two years ago at Geneva—THE LANCET has dwelt on the conditions, political and social, which give Italy her sinister priority in lethal crime. There is her "southern blood," all too imperfectly mitigated by education, by opportunities of honest bread-winning, by respect for the administration of justice. There is nearly half of her 30,000,000 of inhabitants almost wholly "analfabeti" (unlettered), starved not more physically than mentally; by temperament and by tradition peculiarly responsive to the sonorous rhetoric of the self-constituted vindicator of social wrong—himself again the product of Italy's bad educational and academic system, which multiplies the agitator at the expense of the artisan, the tradesman, even the husbandman. In his great scheme of university reform Dr. BACCELLI during his recent tenure of the portfolio of

Public Instruction pointed to the disastrous effects wrought on Italy by her 30 seats of learning granting degrees in many cases after the most superficial examinations, and inundating the country with unemployed professional men who, disdaining the prosaic life of the industrial bread-winner, find on the platform and in the press the channels through which their personality can make itself felt. "An academic proletariat." Such, in BACCELLI'S significant phrase, is the rank, unwholesome growth which is overrunning Italian public life; 500 "avvocati" and nearly as many "sanitari" and "ingegneri" in excess every year of the number that can make a modest livelihood out of these professions—a rapidly increasing force of the "hungry Greeklings" of Juvenal—"Graeculi" whose chosen career is that of "Gracchuli" or diminutive imitators of the heroes of Rome's præ-Sullan period. These glib orators and scribes are always in the political foreground, never more so than in Italy's latest general elections, the result of which was greatly to strengthen the socialist and anarchist vote and to intensify the feeling of discontent and unrest, with a corresponding belief in root-and-branch subversion of the prevailing order. We have no wish—it is certainly outside our province—to court political discussion; but, like every other public manifestation, politics are largely conditioned by forces physical and material, forces which in Italy have acquired a deteriorating power by neglect of laws in which all professions—none more than the medical—are interested. Bad economic and fiscal regulations, the tax on food, the enormous increase of adulteration, these and such like abuses coöperate with intellectual and moral anæmia to create a community well-nigh desperate with hardness of living and hopelessness of outlook. For the "academic proletariat" this is welcome, congenial soil to cultivate, and its products are the PASSANANTES, the CASERIOS, the ANGIOLILLIS, the ACCIARITOS, the LUCCHENIS, and the BRESCIS, the ready instruments of the "International" who think that they are vindicating society and hastening the new heaven and the new earth of the socialist ideal. Italy has made several attempts to nip such products in the bud. She has organised a series of committees "Contro il Coltello" (against the knife); she convened a congress early in 1899 to counteract anarchists. Both proved abortive. Both were addressed to symptoms, not to disease at its source. It remains for her to effect economic, educational, and sanitary reforms, thorough and far-reaching, if she is to clear herself of the imputation of committing more homicides than all Europe (minus Spain and Portugal) put together and of crowning her priority in lethal crime by the assassination of a monarch of whom the world is already saying that she was not worthy.

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THE letter from the honorary medical and surgical staff of the National Hospital for the Paralysed and Epileptic, Queen-square, which we print in another column gives an account of the differences which have arisen between the staff of this hospital and its board of management. These differences have now become so acute that the distribution committee of the Metropolitan Hospital Sunday Fund a few weeks ago recommended that the grant from the Hospital Sunday Fund should be withheld from the hospital until they are settled—a recommendation adopted by the council of the Fund a few days ago.

It is notorious that for some years the medical staff have experienced difficulties in communicating directly with the board and have more than once suggested as a means of obviating such difficulties that they should have representatives on the board. About a year ago, in consequence of the conditions under which matters affecting the staff were discussed by means of delegates to the board, the request for direct representation on the board was renewed. The staff, however, failed to convert the board to their view, and as a consequence were forced to address themselves to the governors of the hospital. This they did, urging weighty reasons for the granting of such representation and fortifying those reasons by describing a state of affairs at the hospital as regards diet, nursing, and administration generally by no means creditable to the institution. The board resented the fact that such charges were not first made to them, but considering the manner in which the board had received representations from the staff in the past and the apparent inefficacy of such appeals, the staff can scarcely be blamed for taking on the present occasion what promises to be a more effective way of dealing with abuses. It can scarcely be said that the means adopted by the board of investigating these charges were such as to command implicit confidence or carry much weight. They appointed a sub-committee of three from their own body, and abstained from invoking some independent and impartial authority which could have examined both the board and the medical staff. But even from the report of this sub-committee, read in the most favourable light, it is evident that a condition of affairs existed by no means creditable to the administration of the hospital and such as the board should have been acquainted with.

The board have recently issued to the governors a statement in reply to that of the medical staff embodying, amongst other things, the report of the sub-committee just alluded to, and purporting to give the reasons for their refusal to allow the staff any representation. To our readers it will appear strange that a medical staff, perhaps as a body the most widely known hospital staff in the world, should have even to ask for such representation; and we cannot help thinking that a board which refuses such a modest request is dangerously out of sympathy with medical requirements and culpably ignorant of the eminence and high position of the men whom it treats so cavalierly. But it is instructive to consider briefly the board's reason for refusal. Such representation, it is alleged, would endanger the independence of the board, whatever that may mean. It does not seem to occur to the board that the medical staff whose names are so closely identified with the hospital have at least an equal interest with members of the board in maintaining the efficiency and enhancing the reputation of the hospital. It is also alleged that with two medical representatives on its board of management the hospital would be "in danger of having the philanthropic aspect of its work subordinated to that which is merely scientific and investigatory." We cannot help asking whether such a statement is really made seriously by a body of

men controlling a large hospital and presumably at least slightly acquainted with hospital matters? Are we to assume that every hospital in London with two or more medical members on its board of management—and this means a great majority of London hospitals—has the "philanthropic aspect of its work subordinated to that which is merely scientific and investigatory"? The childishness of such a statement alone saves it from being libellous, and we doubt whether it will carry weight even amongst the prejudiced and bigoted few for whom apparently it is meant. It is evident that under the special circumstances this question of representation is one of the highest importance. We shall return to this subject, but in the meantime it is to be hoped that the matter will be referred to some independent but competent body, in order that a grave danger may be averted from an institution which not only in England but throughout Europe and America has become, in virtue of its medical and surgical staff, identified with the most advanced neurological science, the most effective therapeutics, and the highest teaching.

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WE would call our readers' attention to two recent publications which have important bearings upon the subject of the deplorable amount of enteric fever that has been prevalent among our troops in South Africa. The first is the correspondence, which has been issued as a Parliamentary paper, between Sir WALTER FOSTER, M.P., and Mr. WYNDHAM, M.P.; the second is an article by Mr. SAMUEL OSBORN, F.R.C.S., on "A Sanitary Corps for the British Army," published in the *Journal of Tropical Medicine* for July. The subject is one of immense importance seeing that it deals with the sanitary precautions which should be undertaken in future wars and as to how and on what scale they should be organised and adopted in order to be efficient. We cannot do better than take these publications as the text for a few observations, it being understood, however, that the matter is of such proportions that it cannot be at all exhaustively treated and threshed out within the limits of a short article. Army hygiene is but the application of the laws of health to the varying conditions of war. The conditions may be inflexible or the reverse, but they will rarely be so elastic and advantageously modifiable under the circumstances of war as under those of ordinary life. Where an enemy, for example, has captured the waterworks of a place or fouled the sources of supply and the troops are compelled to have recourse to a contaminated water-supply the mischief is soon done and it is irretrievable. Writing on Oct. 31st of last year Sir WALTER FOSTER pointed out that "in all human probability there will be great loss of life from fever and other maladies more or less preventable by careful sanitary work," and suggested the sending out of a small sanitary commission or a commissioner with assistants. Sir WALTER FOSTER placed his services at the disposal of the War Office, offering to go out in an unpaid capacity. Mr. WYNDHAM, after having consulted Lord LANSDOWNE and the medical authorities at the War Office, thought that the "need of special assistance is not the same in sanitary matters as in surgical operations." The Director-General and Lord LANSDOWNE therefore did not see the necessity for a commission such as was suggested. Mr. WYNDHAM consequently declined, with thanks, Sir WALTER FOSTER'S offer of service.

We fully recognise the patriotic spirit which animated Sir WALTER FOSTER in making this offer. Let us consider his suggestion in its practical bearings and assume by way of argument that, in addition to the presence of Sir WALTER FOSTER on the small sanitary commission, he was aided by some of the ablest and best sanitary authorities and that their advice and recommendations were of the wisest and soundest. Still, having regard to the immense area covered by the theatre of war in South Africa, it seems to us that there would be no guarantee that the sanitary commission, unless it were ubiquitous, would have been present when and where its recommendations were most needed; we do not see how their recommendations could have been carried out except through the instrumentality of a large sanitary executive body, or how this body could have got to work until a place had been captured. Moreover, it is difficult to understand what a commission could have effected practically where a large advancing force had outmarched its supplies and the amount of available transport was altogether inadequate to its requirements. Under such circumstances the military authorities would obviously have been powerless for the time being to have given effect to the recommendations of any small sanitary commission. It must be admitted that it occasionally happens in war that the military requirements override all other considerations and that this could only be prevented or overcome by getting the enemy to forbear fighting until his opponents were ready. The fighting material has to be present first in order to capture and hold a position and protect any non-combatant labour in the execution of any necessary sanitary work.

The proposals contained in Mr. OSBORN'S paper are, it strikes us, of a much more practical character seeing that he advocates the formation of a "*corps sanitaire*" in the British army like those found in continental armies. This is no new idea. It will be remembered that in effect this question was a good deal discussed in the report of the Army Hospital Services Inquiry Committee after the Egyptian expedition of 1882, and that General Sir JOHN ADYE (who was Chief of the Staff in that war), Sir JAMES HANBURY (who was the principal medical officer), and others gave evidence bearing on this subject. It is a question, however, of much greater difficulty than is commonly supposed. It is often not practicable to employ unarmed civilian labourers on just effecting a landing on an enemy's soil or soon after attacking and capturing an enemy's position. The trend of military opinion seems to be against the increase of non-combatant establishments so as to overweigh the real fighting element and lessen the mobility of the army; the very restricted sphere of labour of a sanitary executive in any campaign, where rapidly executed movements are made, has to be taken into account, although the great utility of such an organisation in the case of sieges or where what may be termed sedentary camps and armies are concerned, and when time is not a pressing element, is fully recognised. In war we usually find that the staff of an army is overwhelmed with work and responsibility, that

transport is *the* difficulty in almost every campaign, and that the question is not so much as to what it is necessary or expedient to do but as to the means of getting it done and that with sufficient promptitude to be efficacious. For our own part, while recognising the force of the reasons that may be urged from a purely military point of view, we hold that there should be with any army in the field, in addition to the officers of the Royal Army Medical Corps, who are not only specially trained in army hygiene but should be fully alive to its great practical importance on field service, some sanitary officers of practical experience, specially selected and told off for that particular purpose, and that there should also be a large and well-organised body for executive sanitary work, such as conservancy and disinfection. It must be a large body to be of any good in a big campaign and possess a staff of directing officials practically acquainted with sanitary work. This might possibly be formed in connexion with the Quartermaster-General's Department, but it should be under the orders and at the disposal of those charged with, and directly responsible for, advising on all matters of army hygiene. Moreover, we have always held that one of the weak points of our present field medical service administration is transport. The medical service should have an independent transport entirely at its disposal which ought not to be diverted to any other purpose, except, as we have previously said, in cases of grave emergency and under the express order of the general in command who should, of course, be prepared to justify his action. These are matters which may most usefully occupy the attention of the South African Commission in the course of its inquiry and may possibly lead to some practical suggestions being made.

THE Centenary Festival of the Royal College of Surgeons of England, which commenced on Wednesday, July 25th, was concluded on Friday evening, July 27th, the final entertainment being a conversazione given at the Mansion House by the Lord Mayor of London. We gave last week some notes of the earlier proceedings and published an abstract of the Address of Welcome by the President; we now conclude our account of the Festival with reports of the meeting held at Burlington Gardens on Thursday afternoon, July 26th, when the Honorary Fellowships were bestowed, and of the Centenary Dinner held on the evening of the same day at Lincoln's Inn Hall (vide p. 339). Each of these meetings may without exaggeration be described as a brilliant success, and the President and Council must feel gratified that their strenuous endeavours fittingly to commemorate the Centenary of the College have by no means been in vain. That the PRINCE OF WALES has received a "qualification" in Surgery to add to that which he already possessed in Medicine is a fact which will be hailed with acclamation by every member of our profession, and it is, we think, a step in the right direction that is taken when leaders of the State such as the Marquis of SALISBURY and the Earl of ROSEBERY are attached to us, lightly though it be, by the link of an Honorary Fellowship. The outside world would perhaps learn to understand and appreciate us better if the calls of our daily duties left us leisure to mingle with them more freely than we do. The gathering at Burlington-gardens was a most remarkable one—noteworthy not only for its brilliance as a ceremonial but for the tribute paid to British surgery as represented by the Royal College of Surgeons of England by most distinguished foreign surgeons from all parts of the world, representative men occupying the highest professional positions in their respective countries, who showed their appreciation of the honour offered to them by travelling long distances to accept it, for it was laid down as essential that he to whom the Honorary Fellowship was offered should on this occasion be present to receive it *in propriâ personâ*. This is, we think, emphatic testimony of the estimation in which British surgery in general, and the Royal College of Surgeons of England in particular, are held. We are glad to know that our *confrères* from abroad were impressed and pleased with their reception; that they valued the distinction which was bestowed upon them is, as we have already said, evident by their acceptance of it. Our readers will find in another column the graceful words of appreciation in which certain of them expressed their thanks to the College.

# Annotations.

"Ne quid nimis."

## THE LATE DUKE OF SAXE-COBURG AND GOTHA.

THE death of the Duke of Saxe-Coburg and Gotha, more familiarly known in England under his title of Duke of Edinburgh, though sudden at the end was not unexpected, for he was smitten with a mortal disease. The late Prince, a reserved and quiet man, was an excellent practical sailor and rose to a very high grade in the navy. It must have been a considerable wrench to him to leave his place in English society to become a German ruler, but having decided to carry out the trust extended to him he finished his life as a loyal supporter of his nephew the Emperor William and of United Germany. His only son having died under sad circumstances and the Duke of Connaught having waived for himself and his family the succession to the dukedom, the Duke of Albany becomes reigning Duke of Saxe-Coburg and Gotha.

## EPSOM COLLEGE.

"FOUNDER'S DAY" took place on Saturday, July 28th, when a large company assembled to assist at the distribution of prizes in the big schoolroom of the College. The headmaster, the Rev. T. N. Hart-Smith, M.A., was able to make a very satisfactory announcement as to the general state of the College and the progress of the boys; to give one instance, he said that two whole forms, without any selection whatever, were sent up for the London Matriculation, and that of these 20 boys 16 passed. He also referred to various honours that had been won by old Epsomians. As has already been stated in our columns,[1] the "Wakley Prize," which was established as a memorial of the Founder of THE LANCET, and which is awarded biennially by the votes of his schoolfellows and the approval of his masters to the most popular boy, was gained by an unusually large majority by Colin Giffard (a son of Mr. D. W. Giffard, M.R.C.S., of Brighton), to whom the eldest grandson of Thomas Wakley had the pleasure of presenting it. Dr. Propert, in presenting the

[1] THE LANCET, June 23rd, p. 1816.

"Propert Prize" for the highest honour won during the year to C. Lawton, alluded all too briefly to the splendid work of his father, the Founder of the College, and Sir Joseph Fayrer, the chairman, in presenting the "Martin" Prizes for classics and mathematics took occasion to insist on the value of a preliminary classical education not only for medical but for all other studies. After the distribution of prizes the company adjourned to the beautiful grounds of the College, which, refreshed by the welcome rain of the preceding day, were seen to the best advantage. An organ recital given in the chapel by the organist, the Rev. Dr. Rowton, concluded the proceedings. The boys seemed well and happy, and the College, which is, if we may use such a phrase in the columns of THE LANCET, not *too* (i.e., exclusively) medical, is certainly doing excellent work. So, to borrow a sentiment from Westminster and Eton, we say "Floreat."

## THE EARLIEST SIGNS OF TUBERCULOSIS.

PROFESSOR BOZZALO of Turin in a paper read at the recent International Congress of Tuberculosis at Naples has conveniently summarised the following 11 important points which are of assistance in forming a diagnosis of pulmonary phthisis in its earliest stages. They are as follows:—1. Albuminuria alternating with phosphaturia. 2. A pseudo-chlorosis distinguishable from true chlorosis by the slighter degree of reduction of the hæmoglobin and by the less-marked vascular and cardiac disturbances (palpitation, soft pulse, pulsating arteries, &c.). 3. The presence of gastric disturbances like gastralgia, anorexia, nausea, and vomiting. 4. Tachycardia in the absence of fever. 5. Diminution of blood-pressure. 6. A rise of temperature following bodily or mental exertion above the slight rise proper to health. In women a rise of from 0·3° to 0·4° C. is observable before the onset of each menstrual period. 7. An undue tendency to sweat after exertion, mental or bodily; also night sweats. 8. Pain in the supra-orbital regions and in the neck. 9. A slight inequality of the pupils with a tendency to dilatation (mydriasis). 10. The occurrence of herpes zoster. 11. Enlargement of the spleen. Of these the first seven symptoms are the most frequently met with and possess considerable diagnostic value.

## AGORAPHOBIA AND HYPNOTIC SUGGESTION.

IN the *Edinburgh Medical Journal* for July Dr. C. Lloyd Tuckey has published two interesting cases of agoraphobia treated by hypnotic suggestion. They are as follows:—Case 1. A young lady, aged 26 years, who was strong and healthy and of robust physique, had noticed for about two years that she felt nervous in church and uncomfortable in shops. This feeling increased until she became unable to enter any crowded building and very averse to going out alone. Her family history showed a freedom from mental disease and she had personally never had a serious illness. She was not on good terms with the head master of her school and this preyed on her mind, but otherwise she had no trouble. She consulted her medical man who prescribed bromides and tonics and ordered rest from work. These measures not being successful and the symptoms growing steadily worse she was subjected to hypnotic treatment. The Nancy method of hypnotising was adopted, she passed into the somnambulic stage at the second sitting, and suggestions were then made to combat her morbid fears. She was strongly assured that she would gain confidence and be able to go about as before and attend church on Sundays. She began to show improvement after this, and on the following Sunday of her own accord she expressed a wish to attend a short children's service at a neighbouring church. "She did this without discomfort, and during the following week went to concerts and theatres without fear." She was also able now to go out shopping, and after two weeks' treatment returned to her school-work and continues well. The symptoms (constituting agoraphobia) which she had experienced before when in a crowded building—such as faintness, giddiness, palpitation of the heart, and a stifling sensation at the chest, with a vague terror which she could not control—have disappeared. Case 2 was that of a man, aged 37 years, strong, healthy-looking, married, and with a family. He led a healthy life and was a first-rate golfer. He had influenza badly in October, 1899, but made a good recovery. He was perfectly well, he said, except for his "nerves," and he felt thoroughly ashamed and disquieted at their condition. He was unable to go about alone and had to be accompanied to and from his office. "He could not enter a church or theatre without feeling such depression and terror that he was forced to retire." The symptoms were beginning to affect his spirits and to keep him awake at night so that his health was failing. Under the influence of hypnotism he passed into the cataleptic stage and was very susceptible to suggestion. He was assured that he would gradually regain self-confidence and self-control, and that in a week's time he would be able to go to a theatre without discomfort. He was hypnotised daily for a week and twice afterwards. On the day named he attended a matinée performance at a theatre without difficulty. He has since resumed his ordinary life and is completely cured. At golf he was as good before as during his illness, his morbid symptoms and troubles (nervousness and feeling of fear) only occurring while in enclosed places or amidst crowds. Dr. Tuckey points out the value of hypnotic treatment in this class of case. Both agoraphobia and its opposite, claustrophobia, are favourably influenced by hypnotic suggestion if the patient is at all hypnotisable. He, however, records two instances where the patients failed to be hypnotised, though every method he could think of was tried.

## GANGRENE FROM THE APPLICATION OF DILUTE SOLUTIONS OF CARBOLIC ACID.

THE *American Journal of the Medical Sciences* for July contains a very complete and important paper on this subject by Dr. F. B. Harrington. In the United States carbolic acid has become a general household remedy for the treatment of slight wounds and bruises and it is used as a moist dressing. The application of dilute carbolic acid for hours to the extremities may produce gangrene—a fact which is not generally known. Dr. Harrington has seen during the last five years at the Massachusetts General Hospital, either in his own practice or in that of other surgeons, no less than 13 cases of gangrene arising from the use of carbolic acid. From medical literature he has collected a large number of other cases which with his own make 132. The recorded cases appear to be entirely American and continental. The absence of British cases is no doubt due to the fact that a dilute solution of carbolic acid applied in the form of a moist dressing is not a household remedy in this country. However, the possibility of carbolic acid being used in this manner is by no means remote, so that the warning given by these cases is not useless. Dr. Harrington relates the following case. A delicate woman, aged 26 years, cut the tip of her right index finger. Her brother, a strong man, had two weeks before successfully treated a cut on his finger with a solution of carbolic acid. She therefore put on a bandage saturated with the same solution. This was at 6 P.M. On going to bed she moistened the dressing again with the solution. There was some pain in the finger during the night. In the morning when the dressing was removed the skin was grey and the finger was swollen and felt "lifeless and heavy." The colour changed in a few hours to a dark brown and later,

when the finger became dry, to black. The patient was first seen at the end of four weeks. The finger was in different places clay-coloured, dark brown, and black. A line of demarcation had formed near the end of the first phalanx. The remainder of the phalanx was red and swollen. Amputation was performed through the middle. Thrombosis of the vessels, superficial necrosis of the finger, and deeper purulent infiltration and hæmorrhage were found. The history of all the cases is similar. After an injury a finger or a toe is wrapped in a dressing saturated with carbolic solution. If the solution is strong enough and the time of application is sufficiently long the part will be lost. Numerous cases have been reported in which amputation had to be performed for gangrene following the use of 2 per cent. and 3 per cent. carbolic solutions. In a child, aged 10 years, the second and third phalanges of a finger were lost after the application of a 1 per cent. solution for 24 hours. Usually the time of application was from 12 to 24 hours. By a series of experiments Lévai has shown that the gangrene is due to a direct chemical action of the carbolic acid on the tissues and that other dilute chemicals have a similar effect. Five per cent. solutions of muriatic, nitric, sulphuric, and acetic acids, and of caustic potash, produced gangrene when applied to an extremity for from 20 to 24 hours. On the trunk superficial gangrene occurs if the application is sufficiently prolonged. The result is not so injurious as on the extremities because of the greater thickness of the tissues and because the blood supply cannot be shut off in the same manner as in an extremity.

## THE USE OF STERILISED MILK.

QUESTIONS are from time to time raised as to how far the use of sterilised milk for the feeding of infants may be desirable in the interests of the public health, and there are those who allege that sundry infantile diseases are accentuated by the exhibition of milk thus prepared. Although some of the considerations upon which objections to this sterilisation of milk are based are somewhat theoretical in nature it is important that all experiments in this direction shall be closely watched. The subject is one of no little importance to the public health, and more especially at a time like the present, when there is considerable difficulty—at any rate without the use of preservatives of one or another description—in supplying fresh milk. Under these circumstances the progress of the Infant Milk Depôt at St. Helens is not without interest. The health committee of that borough has taken seriously to heart the raid which death makes yearly in its infantile population, and it determined to study by means of a sub-committee the work which is being done in England and in France in the direction of "sterilised humanised milk." In London it was found that considerable progress was being made and that a large portion of the public were quite willing to pay the small extra charge which is being made for such milk. At Fécamp in Normandy it is claimed that the infantile mortality has been reduced from 243 to 140 per 1000 births by the use of this milk which is sterilised and humanised under medical supervision. The bottles, which are arranged in sets of nine are, after being sterilised, placed upon numbered shelves, the numbers corresponding to the number of the child for whom the bottles are intended. The parent calls for the bottles and replaces on the shelf the empty nine bottles which were taken the previous day. The nine bottles represent nine feeds per day in such quantities as the age of the babe necessitates, the children being brought weekly for inspection and weighing. At Havre there is a similar society at work. The movement is essentially philanthropic in character but the municipal authorities have been so impressed with its work that they are about to subscribe to the funds of the society. The St. Helens sub-committee were evidently edified by the results attained and they consequently recommended the town council to inaugurate a similar system in St. Helens. In August, 1899, a depôt was opened much on the Fécamp lines and by the end of the month 80 children were being daily fed from it. In consequence of the praiseworthy and public-spirited efforts of the council in this sense there has, Dr. Drew Harris, the medical officer of health, reports, been a great reduction in the infantile mortality of the borough. A large number of children already suffering from diarrhœa were brought to the depôt during August and September, a remarkable improvement having in many cases resulted. Dr. Harris speaks hopefully of the venture and all those working for the reduction of infantile mortality will watch the progress of the scheme with much interest.

## SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.

THE Society for the Study of Disease in Children was inaugurated at a meeting held on July 24th at the rooms of the Royal Medical and Chirurgical Society in Hanover-square. The chair was taken by Dr. A. E. Sansom. There was a fair attendance of those interested in the movement. The rules, as drafted by the provisional committee, were adopted with some slight alterations. The officers and council of the new society are as follows. Honorary treasurer: Mr. Clement Lucas (London). Council: Mr. H. G. Armstrong (Wellington College), Dr. Henry Ashby (Manchester), Dr. Fletcher Beach (London), Dr. George Carpenter (London), Dr. Edmund Cautley (London), Dr. Wayland C. Chaffey (Brighton), Dr. Arthur Downes (Local Government Board), Mr. Walter Edmunds (London), Dr. Theodore Fisher (Bristol), Dr. Leonard Guthrie (London), Mr. Robert Jones (Liverpool), Dr. David B. Lees (London), Dr. Lewis Marshall (Nottingham), Dr. John McCaw (Belfast), Mr. D'Arcy Power (London), Dr. Humphry D. Rolleston (London), Dr. A. E. Sansom (London), Dr. George E. Shuttleworth (Richmond), Mr. Harold J. Stiles (Edinburgh), Dr. George A. Sutherland (London), Dr. James Taylor (London), Mr. Alfred H. Tubby (London), Mr. William H. Vickery (Newcastle-on-Tyne), and Dr. Dawson Williams (London). Honorary secretaries: Mr. Sydney Stephenson (London) and Dr. Charles H. Willey (Provincial). The society already numbers upwards of 80 original members.

## PREPUTIAL CALCULI.

IN the *Boston Medical and Surgical Journal* of June 21st Dr. A. N. Blodgett has described a case of this very rare condition. The patient was a man, aged 22 years, who was of neurotic antecedents and at puberty had been in an asylum for *folie de doute*. He recovered in a few months and since that time had been engaged in business. There was extreme phimosis of a greatly elongated prepuce. No part of the glans could be exposed. The penis as a whole was small, but the distal portion was greatly enlarged, elongated, and pendulous, presenting somewhat the appearance of a small pear over which the prepuce was tightly extended. The orifice was directed to one side. On micturition the stream was discharged at an angle to the penis. The swelling was very hard, unyielding, and tender. A greenish, purulent, ammoniacal, and offensive discharge constantly issued from the orifice which was excoriated and painful. The effect on the patient was most depressing and mental symptoms similar to those which he had suffered from before were being induced. The prepuce was laid open on a director, disclosing a perfect calcareous collar around the base of the glans, filling the sulcus and prolonged upon the glans towards the meatus. The collar was broken in removal. A portion of the redundant prepuce was removed and the flaps were sutured.

Healing was uneventful. Dr. Blodgett refers to another case published in *La Grèce Médicale*, No. 7, 1899, by Dr. A. Louis of Velessa, Macedonia. The patient was a man, aged 45 years, the father of three children, who from feelings of modesty concealed his condition for seven years until he was forced to seek advice. At first pain was slight, but later it increased. The penis resembled in shape the pendulum of a clock. The prepuce was of the form of a pear and was 25 centimetres in circumference and felt like a bag full of sand. From the preputial orifice a muco-purulent, fœtid, and ammoniacal fluid constantly flowed. On incision 110 calculi and some sandy detritus were removed. 30 of the calculi reached the size of a pea, the others diminished to that of a grape seed. During the whole period, except towards the end, when the pain became too great, coitus was performed. It is to be regretted that an analysis of the calculi was not made apparently in either case.

## THE STANDARDISING OF DRUGS.

THE Secretary of State for the Home Department a short time ago requested the Royal College of Physicians of London and the Royal College of Surgeons of England to advise him in reference to an application from a firm of manufacturing chemists for the performance at their laboratories of experiments on living animals for the purpose of standardising drugs. Three questions were submitted for answer, and the matter was referred to the Laboratories Committee of the Colleges for consideration and report. The Committee have issued a report answering the questions above referred to. The first was: "Is the standardising of drugs by means of experiments on animals indispensable in the public interest?" The reply is to the effect that the standardising of some remedies is a chemical process and does not involve experiments upon animals. With certain other remedies, however, containing active agents which cannot be estimated by any known chemical process, experiments on animals are absolutely necessary in order that the therapeutical strength of the drugs may be estimated. This applies more particularly to the groups of remedial agents, antisera, which have been introduced for the treatment of infective disease. An unstandardised antitoxin is, of course, a source of danger. The second question ran thus: "If so, is it desirable that, in proper cases, duly qualified experimenters working in the premises of manufacturing chemists should be empowered to perform the necessary experiments on animals for this purpose?" The reply of the Committee is a decided negative. The members "regard the authorisation of the necessary experiments in the premises of manufacturing chemists as highly undesirable." The arguments adduced in favour of this view are sound and clearly expressed, but we have not space to state them in detail. The last question for consideration was: "If it is not thought desirable that manufacturing chemists should be entrusted with this power, what other provision is it advisable and practicable to make for the purpose?" The reply to this could not have been easy to formulate but we believe the suggestions of the Committee will meet with the approval of all medical men and of those who are interested in the health of the community at large and unbiased by the sentimental objections put forward by the anti-vivisectionists. While the Committee think that it is undesirable for a licence to be given to any firm of manufacturing chemists they are strongly of opinion that it is essential for the public welfare that in the case of the antisera the antitoxic strength of the remedies should be tested and certified by some responsible authority. They suggest that the standardisation might be carried out either by the Government directly in a State laboratory or by some public body or bodies with the sanction of the Government. In Germany the standardisation is carried out in a State laboratory under the direction of a Minister; in France it is undertaken by the Pasteur Institute; while in New York the State is responsible for the work. Reference is then made to the excellent work undertaken by the Royal College of Physicians of London and the Royal College of Surgeons of England in the public interest and without pecuniary advantage. It is to be hoped that the Home Secretary will act upon the suggestions of the Committee, the weight of whose authority is unquestionable, and that laboratories will be authorised for the standardisation of the antisera.

IN our last issue, p. 242, we published the presidential address delivered at the British Pharmaceutical Conference by Mr. E. M. Holmes who was inadvertently described as President of the Pharmaceutical Society. Mr. Holmes is President of the British Pharmaceutical Conference, the President of the Pharmaceutical Society for the current year being Mr. G. W. T. Newsholme.

A TELEGRAM has been received at the Colonial Office from Sir H. A. Blake, the Governor of Hong-Kong, dated July 30th, and recording 33 cases of bubonic plague with 34 deaths during the last week.

THE Library of the Royal Medical and Chirurgical Society is now closed for cleaning, &c., and will be re-opened on Monday, Sept. 3rd, at 11 A.M.

## THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS AT PARIS, AUGUST, 1900.

(BY TELEGRAM.)

THE Thirteenth International Medical Congress was opened yesterday (Thursday) in Paris. President LOUBET received the international delegates in the morning at the Elysée and M. Monis, Minister of Justice, presided at the first general meeting in La Salle des Fêtes. Professor LANNELONGUE, President of the Congress, thanked M. Monis for his welcome to the Congress, and in his address suggested the adoption of a universal nomenclature for, and a natural classification of, morbid phenomena. Over 1200 communications have been received from contributors to the proceedings of the Congress. Upwards of 5000 medical men have registered as members of the Congress, 757 being Russian, 554 German, 369 American, 316 Italian, 217 British, and the rest for the most part French.

POISONING BY BENZOLINE.—Mr. S. Craddock held an inquest at Burnham, Somerset, on July 23rd upon a little boy who had swallowed some ounces of benzoline instead of water. The child became unconscious and died within 30 minutes. A verdict to the effect that death was caused by drinking benzoline in mistake for water was returned.

ACTION AGAINST A WATER COMPANY.—At the Swansea County-court on July 25th a barrister summoned the Oystermouth Waterworks Company for neglecting to supply him with water for domestic use at his house, Caehir, Westcross. The magistrates imposed a penalty of £10 and £2 for every day since July 18th on which water had not been supplied.

PUBLIC BATHS AT ISLINGTON.—The Islington Vestry and Sanitary Authority have just completed extensive additions to the public baths in the Hornsey-road. There are now provided a new first-class swimming bath for women, 37 additional private baths, and a new laundry, with necessary accessories thereto. The total outlay of these additions is estimated at about £61,000.

# THE CENTENARY FESTIVAL OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

(*Continued from p. 284.*)

## ADMISSION OF HONORARY FELLOWS.

As we briefly announced last week the centenary meeting was held in the theatre lately used by the University of London at Burlington-gardens on Thursday afternoon, July 26th. The President, Sir WILLIAM MAC CORMAC, having delivered an Address of Welcome (*vide* THE LANCET, July 28th, 1900, p. 281), the following Honorary Fellows who had been elected on the previous day were admitted:—

ALBERT, EDUARD, M.D., Professor of Clinical Surgery, University of Vienna; Member of the Austrian House of Lords and of the Supreme Sanitary Council; Royal Imperial Councillor of State.

BALL, CHARLES BENT, M.D., M.Ch., Regius Professor of Surgery, University of Dublin; Surgeon to Sir Patrick Dun's Hospital; Consulting Surgeon to Steevens' Hospital, Dublin.

BASSINI, EDOARDO, M.D., Professor of Clinical Surgery, Royal University of Padua; Commander of the Order of the Corona d'Italia.

BENNETT, EDWARD HALLARAN, M.D., M.Ch., Professor of Surgery, Trinity College, Dublin; President of the Royal Academy of Medicine in Ireland.

BERG, JOHN WILHELM, M.D., Professor of Surgery, Royal Caroline Institute of Medicine and Surgery, Stockholm; Surgeon to the Royal Seraphim Hospital; Member of the Direction of the "Sophiahouse"; Member and Ex-President of the Swedish Medical Society and of the Scandinavian Surgical Association.

VON BERGMANN, S. Exc. Professor Dr. ERNST, Geh. Med. Rath; Royal Prussian Medical Privy Councillor, Imperial Russian Actual Councillor of State, Knight of the Prussian Order of Hohenzollern, the Prussian Kron and Red Eagle Orders; Knight Grand Cross (with Diamonds) Imperial Russian Orders of the Holy Anne, of the Holy Stanislas and the Holy Vladimir. General-Arzt of the Prussian Army with the rank of Major-General. Served in the Franco-German and Russo-Turkish Wars.

BLOCH, OSCAR THORVALD, M.D., Professor of Clinical Surgery, University of Copenhagen; Physician in Ordinary to His Royal Highness the Crown Prince of Denmark; Surgeon to the Royal Frederiks Hospital; Member of the Royal Board of Health of Denmark.

CAMERON, IRVING HEWARD, M.B., Professor of Surgery and Clinical Surgery, University of Toronto; Surgeon to the Toronto General Hospital.

CARDENAL FERNANDEZ, SALVADOR, M.D., Vice-President of the Royal Academy of Medicine and Surgery of Barcelona; Director of the "Ho-pital del Sagrado Corazon" of Barcelona; Commander of the Royal Order of Isabella the Catholic.

D'ANTONA, ANTONINO, M.D., Professor of Surgery, Royal University of Naples; Professor of the Propedeutica Chirurgicale, and of the Institute of Surgical Pathology, of Naples.

DURANTE, FRANCESCO, M.D., Senator; Professor of Clinical Surgery, Royal University of Rome; President of the Royal Medical Academy of Rome; President of the Italian Surgical Society; Knight of the Most Distinguished Order of the "Merito Civile di Savoia"; Knight Grand Cross of the "Corona d'Italia."

HALSTED, WILLIAM STEWART, M.D., Professor of Surgery, Johns Hopkins University, and Surgeon to the Johns Hopkins Hospital, Baltimore.

INGSTON, Hon. Sir WILLIAM HALES, M.D., LL.D., D.C.L., Professor of Clinical Surgery, Laval University, Surgeon-in-Chief, Hotel Dieu Hospital, Montreal; Senator of the Dominion of Canada.

MESON, Surgeon-General JAMES, C.B., M.D., LL.D., Director-General, Army Medical Service; Knight of Grace of the Order of St. John of Jerusalem in England. Served in Canada, West Indies, and Egypt, and in the Franco-German War.

KEEN, WILLIAM WILLIAMS, M.D., LL.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia; President, American Medical Association; President, College of Physicians of Philadelphia.

KOCHER, THEODOR, M.D., Professor of Clinical Surgery, University of Bern; Colonel, Medical Department of the Swiss Federal Army; President of the Swiss Medical Association.

KÖNIG, FRANZ, M.D., Geh. Med. Rath; Professor of Surgery; Director of Clinical Surgery at the Charité Hospital, Berlin; General-Arzt à la suite of the Army Medical Corps. Served in the Franco-German War as Consulting Surgeon to the Prussian Army.

KÜSTER, ERNST GEORG FERDINAND, M.D., Geh. Med. Rath; Professor of Surgery and Director of Clinical Surgery, Marburg; General-Arzt of I. Class à la suite of the Medical Service of the German Army.

LAMBOTTE, ELIE D. H., M.D., Surgeon of the Hospital "Bon Pasteur," Bruxelles; Professor at the "Institut des Hautes Études."

LANNELONGUE, ODILON MARC, M.D., Professor of Surgical Pathology, Faculty of Medicine, Paris; Member of the Academy of Medicine; Member of the Academy of Sciences; Surgeon, "Hôpital des Enfants Malades."

LENNANDER, KARL GUSTAF, M.D., Professor of Surgery and Obstetrics, University of Upsala.

MACEWEN, WILLIAM, M.D., LL.D., F.R.S., Regius Professor of Surgery, University of Glasgow.

MACLEOD, Colonel KENNETH, M.D., LL.D., Indian Medical Service; Professor of Clinical and Military Medicine, Army Medical School, Netley; late Professor of Anatomy and Clinical Surgery and of Systematic Surgery, Calcutta Medical College.

NICOLAYSEN, JULIUS, M.D., Professor of Surgery, Royal University of Christiania.

NORBURY, Sir HENRY FREDERICK, K.C.B., Director-General, Medical Department of the Royal Navy. Served in the Kaffir and Zulu Wars, 1878 and 1879.

OLLIER, LÉOPOLD, M.D., Professor of Clinical Surgery, University of Lyons.

PACHOUTINE, VICTOR, M.D., Privy Councillor; President and Professor, Imperial Military Academy of Medicine, St. Petersburg; President, Medical Council of the Empire; Knight of the Orders of St. Stanislas, St. Anne, St. Vladimir, and Prince Daniel.

POZZI, SAMUEL, M.D., Professor, Faculty of Medicine of Paris; Surgeon, Hôpital Bichat.

RAYE, Colonel DANIEL CHARLES O'CONNELL, M.D., Indian Medical Service; late Professor of Surgery, Calcutta Medical College, and Senior Surgeon, Calcutta General Hospital.

RODDICK, THOMAS GEORGE, M.D., LL.D., Professor of Surgery, McGill University, Montreal; Consulting Surgeon, Montreal General Hospital and Royal Victoria Hospital, Montreal; Member of the Canadian Parliament; Hon. Surgeon to His Excellency the Governor-General of Canada.

RUBIO Y GALI, FEDERICO, M.D., Medical Councillor; Member of the Royal Academy of Medicine of Madrid; Founder of the Hospital and Surgical Institute, Madrid.

TILLAUX, PAUL, M.D., Professor of Clinical Surgery, Faculty of Medicine, Paris; Member of the Academy of Medicine; Surgeon of the "Hôpital de la Charité."

WARREN, JOHN COLLINS, M.D., LL.D., Professor of Surgery, Harvard University; Surgeon, Massachusetts General Hospital.

WEIR, ROBERT FULTON, M.D., Professor of Surgery, College of Physicians and Surgeons, Columbia University, New York; Surgeon, New York Hospital and Roosevelt Hospital; President, American Surgical Association.

After the admission certain of the Honorary Fellows made speeches on their own behalf and that of their colleagues:—

### Professor E. VON BERGMANN. (*Translation from German.*)

MR. PRESIDENT,—I beg to be allowed to thank you in the language of my country for the high distinction which has just been conferred upon us, the German-speaking surgeons.

The language of one's native land comes direct from the heart, and it is in the language of our mother that we address our dearest on earth. The German-speaking surgeons have always sought their dearest and most cherished model in the constitution, organisation and achievements of the Royal College of Surgeons of England.

Just as John Hunter by his own power founded the greatest and most beautiful anatomical and surgical museum, so have also his successors independently and relying on their own resources understood how to increase their rich inheritance in a wonderful manner, to accomplish great things brilliantly, and always to march with the times.

To be received by *such* men, into *such* a fellowship, is an honour than which no higher can be conceived.

We all wish to express to you, Mr. President, our warmest and most cordial thanks.

### Professor DURANTE. (*Translation from Italian.*)

In the name of my Italian colleagues and my own I thank you, Mr. President and the illustrious College which has invited us to this memorable festival.

Our gratitude for the high honour which you have deigned to confer upon us this day is as deep as the traditions of the Royal College of Surgeons of England are able and as profound as its merits in the progress of science and the surgical art are great.

From this temple consecrated to science, of which the priests are always brothers and devoid of all unwholesome political bias, may I be allowed to proffer a respectful salutation to glorious and mighty Britain?

### Dr. W. W. KEEN.

MR PRESIDENT, MY LORDS, LADIES, AND GENTLEMEN,—On behalf of my American colleagues and myself it gives me great pleasure to return our very hearty thanks for the honour just conferred upon us. We regard it as the highest surgical honour we could receive, for "Praise from Sir Hubert is praise indeed."

Though the Royal College of Surgeons of England has attained a venerable age, it is far from decrepitude. No better evidence of this could be found than the many Members and Fellows who at the call of duty so cheerfully went to the front in South Africa. Foremost among them was your distinguished President, who, though he has reached an age when most men seek repose and slippered ease, responded to his country's call with his customary energy and alacrity. Happily the war is now nearing its end. Apart from any political results in South Africa it has had two results in which we may well rejoice. It has bound together Great Britain and her colonies in one solid empire; and through the wise statesmanship of the Most Noble Marquis of Salisbury and His Excellency the American Ambassador has joined Great Britain and America in a firm moral union in which Her Majesty if not monarch of our persons is surely queen of our hearts.

We come to you as representatives of four of our great institutions of learning—from Harvard, heavy with the snows of nearly three centuries, to Johns Hopkins in the lusty youth of less than three decades. As President of the College of Physicians of Philadelphia I represent also the oldest institution in America at all similar to your own, a corporation which includes surgeons as well as physicians, and which was already in its teens when the Royal College of Surgeons was founded. On behalf of these and of all our medical institutions we bring you our heartiest greetings on this festal occasion, in the name of sound learning and accurate scholarship.

It has been my pleasure in Philadelphia to welcome many of your Fellows, including three of your most distinguished Presidents. Some of you have even swept across the continent in luxurious palace cars in but little over 100 hours. To show how swift has been our progress and yet how young we are, I need but recall the fact that this College was nearly 40 years old before the name of Chicago—now a city of nearly 2,000,000 people—even appeared upon the map, and when you were founded, beyond the fringe of civilisation on the Atlantic coast the only inhabitants of the vast region from the Alleghanies to the Golden Gate were the buffalo, the bear, and the savage Indian.

But though so young we come not empty-handed. Three great

medical advances mark the past 100 years—vaccination, anæsthesia, and antisepsis. The first and third of these are yours, but the second—apæsthesia—is the gift, better than Magian gold and frankincense and myrrh, which to-day America lays on the altar of science.

Before that historic date, Oct. 16th, 1846, the poor victims of the knife were bound hand and foot and held in the grasp of sturdy men, but hand and cord could not repress the fearful outcries which filled the air. But at Warren's touch the thongs fell off he spoke and the stormy billows of this Gennesaret of pain were stilled; the peaceful blessed sleep of ether hushed every cry of pain. Then first was modern surgery made possible, and what was made possible by our Warren was made safe and successful by your Lister—no, not *your* Lister, but OUR Lister, for his name belongs to no age and no country, but to humanity.

It is, therefore, with a special fitness that to-day you have conferred your Honorary Fellowship upon the distinguished grandson of him who first demonstrated the blessings of ether to a suffering world. At the very time when this College was founded Warren was a student of Guy's Hospital and his certificate of attendance, signed by Mr. Cline and Sir Astley Cooper, is in the possession of his grandson.

Again, Mr. President, I beg you to accept our sincere thanks for the distinguished honour you have conferred upon us.

Professor LANNELONGUE. (*Translation from French.*)

To praise the Royal College of Surgeons of England, with which we have just become connected, and the centenary of which you are at present celebrating, would be to exalt one's own merits.

The duty of a foreigner on whom such a great honour has been conferred should be that of merely expressing his gratitude. However, there are in your past history as a surgical body during this century such achievements to be chronicled that the very mention of which in a few words may not be displeasing to you.

A journey fraught with interesting consequences which was made to England by a famous French surgeon, Roux, showed what you were in 1814. He returned from this voyage with the friendship of a number of the followers of Hunter's methods, such men as A. Cooper, Ch. Bell, Brodie, Travers, Lawrence, and with a knowledge of the secret of the ligature of great vessels, the resections—which were not practised anywhere else—flap amputations, finally, the reunion by intention, facts which were forced upon them. Roux returned in a state of mind divided between admiration of your audacity and mistrust of it. He proclaimed the brilliant features of your practice in surgery, but also did not conceal its imperfections. Such was the origin of a scientific interchange of ideas and discoveries which has never slackened between you and us. The proof of this was illustrated when on March 8th, 1847, Flourens discovered the anæsthetic action of chloroform, and a few months later, on Nov. 10th, 1847, Simpson of Edinburgh employed this agent on man with admirable results.

As early as 1852 Clover praised ischæmia, which does not detract in any way from the merits of Esmarch, and did not ovariotomy flourish in England when there was nothing but failure elsewhere? Another journey was necessary—the one of Jules Worms and Nélaton in 1860—to impel conviction. In short, you have had a man at the right moment who was able to understand the works of a Pasteur and appropriate his principles and thus to establish modern surgical antisepsis.

Gentlemen, to be associated with you is one of the most enviable honours, and we thank you.

Professor V. PACHOUTINE (*who spoke in English*).

I observe amongst the number of illustrious surgeons of many nations elected Honorary Fellows of the Royal College of Surgeons of England the names of some of the surgeons of Russia.

This is a great honour to Russian surgical science which, although in its youth, has produced already a Pirogoff.

I take this opportunity to express to this greatly esteemed College, in the name of all Russian surgeons, their very sincere gratitude for the distinction conferred upon their countrymen, and on their behalf to further express the wish that the Royal College of Surgeons of England may continue to flourish and to give to the world illustrious men, who like their predecessors will be shining lights to the surgical science, ever opening new roads for surgical practice to the benefit of the human race.

## THE CENTENARY DINNER.

The centenary dinner was held in the beautiful Hall of the Honourable Society of Lincoln's Inn on the evening of Thursday, July 26th. Sir WILLIAM MAC CORMAC, the President, was in the chair and a large and distinguished company of some 300 was present, including H.R.H. the Prince of Wales, Hon. F.R.C.P., Hon. F.R.C.S., the Marquis of Salisbury, Hon. F.R.C.S., the Earl of Rosebery, Hon. F.R.C.S., and the distinguished surgeons who had received the honorary diplomas of the College in the course of the afternoon. There were also present among those who did not belong to the medical profession, H.R.H. the Duke of Cambridge, the Portuguese Minister, the Lord Chancellor, Earl Spencer, the Lord Mayor of London, the Duke of Northumberland, the Earl of Kimberley, the Lord Bishop of London, Lord Rothschild, Maharajah Jugga Rao, Lord Davy, Lord Strathcona, Lord Kelvin, Sir Henry Roscoe, Mr. Justice Lawrance (treasurer of Lincoln's Inn), Lord Alverstone, and others.

The PRESIDENT, in proposing "Her Most Gracious Majesty the Queen," said: Your Royal Highness, my Lords, and Gentlemen,—The first toast I have to propose is that of the Queen, God bless her. I know nothing more touching or soul-stirring than to hear as I recently have heard them, in some distant and lonely land, perhaps in front of the enemy, the strains of our national anthem peal out. Let us drink, then, with all enthusiasm the health of the best of women and the greatest of queens.

In giving "Their Royal Highnesses the Prince and Princess of Wales and the other members of the Royal Family," Sir WILLIAM MAC CORMAC observed: I need scarcely repeat, what is well known to this company, what a large part the Prince of Wales takes in the public affairs of this country and the cordial goodwill and affection which his fellow-countrymen entertain for him, and this is not only because he is Prince of Wales, but because his incessant labour for the public good and devotion to every good cause have earned for him our profound respect and esteem. For the beloved Princess his wife every Englishman and Englishwoman, too, entertains the deepest admiration. Her charitable impulses have found further and wider scope in the necessities of the war we are still unhappily engaged in, and it would be difficult to estimate the far-reaching results of her influence. There is another member of the Royal family present whom we should at this time especially delight to honour—I mean His Royal Highness the Duke of Cambridge. There is no man in all Her Majesty's wide dominions more whole-hearted and true, and there is no one more worthy of the respect and affection which he so universally possesses. I call upon you to drink with all enthusiasm the health of our new Fellow, His Royal Highness the Prince of Wales, and that of the other members of the Royal family.

His Royal Highness the PRINCE of WALES, who was received with enthusiasm, on rising to respond said that he did so in a totally new capacity, that of an Honorary Fellow of the Royal College of Surgeons of England. The sister College had already elected him an Honorary Fellow, so that he was indeed one of them and a member of the two professions which did such good to mankind. He was afraid, however, that he would not be allowed to practise the profession, for if he did he very much feared that he might perhaps commit manslaughter or even murder, from the results of which even his good friend the Lord Chancellor would not be able to save him. He then referred to the great progress which had been made in surgery and in graceful terms spoke of the service which had been rendered to him by the President of the College when he (the Prince) two years ago met with an accident. He also alluded to Sir William Mac Cormac's services during the war in South Africa and acknowledged the services of Mr. Treves in a similar capacity. He then referred to the work done by the medical profession in the South African campaign and said he was sure that the members of that profession had done their best and that the way in which the hospitals had been managed reflected the greatest credit on them.

The toast of "The Honorary Fellows of the College" was proposed by Sir WILLIAM MAC CORMAC, who observed: This is the first time this toast has been proposed, as it is only quite recently, as I explained this morning, that we obtained the necessary authority to grant these honorary distinctions. We attach great value to them, and it was our wish to bestow the highest honour in our power on the distinguished persons who have just been made Honorary Fellows of our College. There can be no doubt that the importance and success of this occasion have been greatly enhanced by the exercise of these powers. We are greatly gratified at being able to bestow these honours, and there can be no question that the position of the College is strengthened by the inclusion within its ranks of so many distinguished persons. To you, sir, who stand first upon our roll of honour I should like to say with what enthusiastic acclaim your name as one of us has been received. I know well—indeed, we all know—your generous sympathy and interest in our affairs and your special desire that this centenary celebration should prove worthy of the College and of the occasion. I trust that it has been so. Our great countryman Lord Salisbury has spared the time from the affairs of State to come to do us honour. We are deeply grateful to him and we have tried to make what return was in our power not only to the great statesman but to the altogether admirable chemist, a branch of science of such great importance to medicine. Lord Rosebery's great gifts are known to us all. I was lately asked by an eminent physician to tell him the principle which had guided us in our selection as Honorary Fellows of Lord Salisbury and Lord Rosebery, and my reply was that Lord Salisbury was an eminent man of science and that Lord Rosebery was eminent in everything else. All the other Honorary

THE CENTENARY OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND. THE FESTIVAL DINNER IN LINCOLN'S INN HALL.

Fellows are surgeons, the elect of their profession, the glory of their country, and the pride of ourselves. We congratulate them on their newly acquired distinction, and we congratulate our College on the distinction they bestow upon us. Let us drink to the health, long life, and happiness of the Honorary Fellows of the Royal College of Surgeons. I have now to call upon the Earl of Rosebery, Honorary Fellow of the Royal College of Surgeons of England, to respond to this toast.

The Right Hon. the Earl of ROSEBERY, K.G., K.T., Hon. F.R.C.S., in responding, said that he had filled many embarrassing positions, but he had never felt what embarrassment really was until he had been made a Fellow of the College of Surgeons. The Honorary Fellows of the College, for whom he had been asked to reply, represented all the countries of Europe; their names and distinctions occupied three printed pages and constituted a numerical catalogue with which he was not able to deal, but he was glad to say that they had already replied for themselves in the afternoon. That left three Honorary Fellows. The Prince of Wales, however, had already replied, and so now the number was reduced to two—the Prime Minister and himself. He hoped that no one would entrust a surgical case to either his noble friend or himself. The Prime Minister was credited with the intention of performing on the illustrious mother of parliaments an operation which consisted in giving a new lease of life by first stopping that which now existed, and then flinging it into that exhilarating cauldron which would return it to life. He did not know whether the scalpel or knife would be shortly applied in any such way as that, but that was the only surgical operation which he considered could with safety be entrusted to the noble marquis. He thought that if political matters were conducted on scientific principles it would probably be better for the peace of the world. Men of science knew nothing but peace. Science was sometimes defeated, but the defeats of science were the defeats of humanity itself.

The toast of "The Guests" was proposed by Mr. THOMAS BRYANT, who said: The toast which it is my privilege to give on the present interesting occasion is that of "The Guests," who I may honestly say are the choicest representatives of every learned, scientific, artistic, and useful branch of human endeavour which this metropolis can supply. We have been led to make this selection under the conviction that the distinguished Honorary Fellows of this College whom they have been invited to meet are men of equal calibre—for the three professing but not practising Fellows who head our lists are men whom all the world delight to honour and who honour this College by becoming Fellows and thus partaking of its interests, whilst the remaining Honorary Fellows are the leading practising surgeons of the European and American States and of our own much-beloved colonies. In fact, they represent, with the Fellows of this College, the working bees of the surgical profession which utilise to the full every science and art which our guests so ably cultivate, and cull from all branches of human industry everything and anything which can possibly help towards the investigation, the prevention, and the cure of disease. Indeed, I like to think of them as the representatives of applied science for the personal benefit of mankind. They at the same time recognise no rivalry, but only friendly competition which it is to be hoped, under the banner of the Fellowship of the Royal College, will be encouraged for the benefit of the world. The name I have to couple with this toast is the representative of all that is good and all that is great in this highly-favoured Island State—the Lord High Chancellor of England—Lord Halsbury.

The LORD CHANCELLOR briefly replied.

"The Royal College of Surgeons of England, coupled with the name of the President," was proposed by Lord SALISBURY, who received on rising a cordial reception. He said that until he received the Honorary Fellowship of the Royal College of Surgeons he never was a surgeon or as a surgeon proposed the health of surgeons. His colleague in the Honorary Fellowship seemed to think that he (the speaker) knew when the Dissolution would take place. He hoped to elicit from him a secret the knowledge of which he did not possess. He also referred to the fact that the distinguished surgeons who had that day received the Honorary Fellowship of the Royal College of Surgeons of England had come from all countries of the civilised world; and with a few words of acknowledgment of the work and services of Sir William MacCormac he proposed the health of the Royal College of Surgeons of England coupled with the name of the President.

The PRESIDENT, in replying, said: I venture to think that the time for any further speech from me is almost passed, and that I shall do best if I but thank Lord Salisbury for the very kind and handsome manner in which he has proposed the toast which I will call the toast of the evening, the continued prosperity of the Royal College of Surgeons. The inclusions within its ranks of so many distinguished men to-day is a great pleasure and satisfaction to our College, and it is a further and a convincing testimony of the high esteem in which our College is held. As for myself I thank him in all sincerity and gratitude for the kind words he has spoken of me and I do this with all my heart.

At the end of the dinner (during which a selection of music was played by the band of the Coldstream Guards) each guest was presented with a volume containing the Address of Welcome, Centenary of the Royal College of Surgeons of England, by the President and also with a Souvenir of the Centenary of the Royal College of Surgeons of England, 1800 to 1900.

The accompanying picture of the dinner is from a photograph taken by Messrs. Fradelle and Young.

### CONVERSAZIONE AT THE MANSION HOUSE.

The concluding entertainment of the centenary celebrations took the form of a conversazione given by the Lord Mayor of London in the Mansion House on Friday, July 27th. A considerable company was present, including many of the Honorary Fellows and other persons of distinction.

Altogether the Royal College of Surgeons of England and its President, Sir William MacCormac, are to be congratulated on a brilliant celebration of the centenary.

## THE WAR IN SOUTH AFRICA.

VERY important and stirring events have taken place at the seat of war since we last wrote. The unconditional surrender of Commandant Prinsloo and a large number of Boers at Fouriesburg comes as a great relief after the meagre news of desultory and indecisive movements and fighting which have been taking place of late. The war has not only lasted much longer but has cost a far larger loss of life than it was originally supposed it would do. Still it would now seem to be nearing an end. Further resistance, as far as the Orange River Colony is concerned, may be practically considered as having terminated. It is to be hoped that Lord Roberts will soon have the line behind him restored, in which case he will be able to move upon Koomati Poort and cut off the main source of Boer supplies and so convince Mr. Krüger, when he can no longer communicate with Delagoa Bay, of the folly and futility of any further efforts on his part. We confess that we have never been able to understand why a bold attempt in this direction has not been made before—by General Buller's force, for example. It is useless to speculate on the probable capture of General De Wet's force or that of General Botha, because this has so often failed of being accomplished when it seemed imminent; still the chances of their being surrounded and having to capitulate are increasing. The Boers are still showing great activity in the vicinity of Rustenburg and they have succeeded again in temporarily surrounding General Baden-Powell. All our campaigns in South Africa have been attended with unforeseen difficulties and occasionally with disasters. In spite of the fact, however, that the Boers have succeeded in protracting the war and inflicting a grievous amount of injury on this country, they have not really succeeded in any of their more ambitious attempts and they have failed to exhibit any striking strategical ability. On the other hand, South Africa has proved, as far as the British are concerned, the graveyard of many military reputations. There has scarcely been any branch of the service in the field which has not come in for some adverse criticism, and the commissariat and supply arrangements—especially these in connexion with General Rundle's force—have not escaped. A newspaper correspondent has represented the soldiers of that force as half-starved and in a pitiable condition, and we know all

that has been alleged about the shortcomings of the medical service. This is a very poor recompense for all the toil and hardship entailed by war. According to our reading a clue to the explanation of all such occurrences will be found in the difficulties arising from insufficient transport. It must never be forgotten that the more rapid the movements of an army the harder it is for all transport and supply departments. Mr. James Van Alen, who has just returned to the United States after having been present at Bloemfontein and Kroonstadt in charge of his own field hospital, has stated that the condition of affairs there was worse than ought naturally to be expected in even a rapidly moving army. He attributes this to such causes as the neglect of the sick for the troops and the preference given to the transport of ammunition rather than of hospital supplies, to the single lines of railroad, and to the want of preparation for an epidemic. He thinks that it was a fatal error to have neglected to protect and fortify the water-supply at Bloemfontein and that this oversight accounts for much of the sickness. It is quite possible that this view may be a substantially correct one.

It is clear that when the war is over there must be a very exhaustive inquiry into everything connected with our entire army system and that wholesale changes and reforms will be introduced into it. The progress made in all that relates to modern arms and the munitions and systems of warfare has revolutionised our ideas. The fear is, perhaps, that the reforms in our own army will be based too much upon our experiences with the Boers, and that, as a consequence, we may have in future an army admirably adapted for such kinds of campaign but less effective for other kinds of warfare against trained European armies. Our army medical system will, in any case, undergo great changes in the way of development and organisation.

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(FROM OUR SPECIAL CORRESPONDENT LATELY AT THE BASE.)

The feeling that pervades the whole of the medical staff, both civil and military, who are doing, and have been doing, their best in this country for the past nine months, on reading the telegrams from home during the past week is beyond description. They have disheartened beyond measure those of us who have borne the burden and heat of the day. Any stick, we are told, is good enough to beat a dog with, and on this occasion the stick seems to be the so-called "society ladies" whose concentrated wrath has been poured on the whole Royal Army Medical Corps without rhyme or reason. Of course it is not difficult to trace the reason which prompts this semi-hysterical onslaught, and to those of us who are behind the scenes there is a tinge of amusement pervading our resentment; but to the general public, whose only means of knowing what work is being done is by the medium of the daily papers, these accusations and allegations must bear the stamp of genuineness. I am not going to trouble your readers with any defence or excuse with regard to these monstrous complaints. This would only be an insult to a body of officers and men who have loyally, courageously, and with a devotion which would be hard adequately to praise, done their duty in the face of difficulties and dangers that anyone who has not been on the spot can have no idea of. On every hand, I am glad to say, amongst officers and men who have passed through our hands we are daily receiving indignant protests, and they, and they alone, are best able to judge if there has ever been a campaign in the memory of man when officers, non-commissioned officers, and men have been looked after so well and more considerately treated than in this. However, this is our reward, and I am afraid that after this campaign is finished it will take more blandishments than the War Office or Treasury possess to induce worthy men to enter a service the only reward in which is abuse.

I am glad to say that there is a steady diminution of enteric fever in this place, and that the number of admissions to hospital is declining; but of course we are sending home large numbers of men weekly who are unfit to go to the front again. I need not say that we shall gladly welcome the time when once more "peace reigns in the land."

There is a good deal of sickness in Johannesburg and Pretoria, but ample accommodation exists in the various splendid buildings that are found in these two towns, and as trains are now running with regularity, no want of supplies or comforts will be found. Whilst on the subject of comforts, I may say how grateful the men of the Royal Army Medical Corps are for the generous gifts that have been sent out to them, showing that in spite of all some people at home appreciate their efforts.

Bloemfontein, July 8th.

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# THE FIRST INTERNATIONAL CONGRESS ON MEDICAL ETHICS OR DEONTOLOGY, HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

## MASSAGE, QUACKS, AND NOSTRUMS.

ON Wednesday afternoon, July 25th, the Congress divided into two sections, and as complaints had been made that the discussions had assumed a purely French and local aspect it was decided that subjects of this nature should be debated in the first section and questions of a more general character in the second section. Consequently I attended the second section. The afternoon was mainly devoted to the consideration of the many and various forms of competition from which medical men have to suffer.

Dr. DIGNAT (Paris) urged that nurses and others who applied water and electric cures were practising medicine, though they were not properly qualified. There was no denying that these agencies might do a great deal of good or, if wrongly applied, a great deal of harm. Then there were the prescribing druggists and the covering doctor. All these were the parasites of the medical profession. Under the supervision of medical men their work was sometimes legitimate and useful, but they had no right to go to families and propose to treat patients unless called in by a qualified medical attendant.

Dr. SALOMON, of the department of the Sarthe, mentioned a medical man who employed a masseur to administer chloroform and a postman who acted both as a masseur and doctor.

Dr. BENEDICK (Vienna) urged prudence. He had always found that the conviction of mesmerists only served to increase the number of their clients. In one case the public prosecutor who had secured a conviction subsequently went himself to consult the quack in question. In Austria also there were many eminent scientists who were not doctors of medicine, and in certain mountainous districts there were no medical men at all. But there were families who had inherited capacities which were probably in the origin based on a true knowledge of medicine. When there was no medical man available the sick could not be prevented from consulting such persons. Also, there were peasants who undoubtedly were wonderful bone-setters—one of them had been nominated honorary doctor by the University of Prague so great was his skill. It was wiser to show some toleration to those who outside the profession undoubtedly had rendered services.

Dr. OTTOLENGHI, from Italy, delivered an amusingly inconsistent speech. He lamented the ignorance of the profession in regard to the so-called occult topics—hypnotism, mesmerism, faith-healing, suggestion, &c.—and then urged that no one but medical men should be allowed to practise those very methods about which he had declared they knew so very little.

Dr. VANDAM (Brussels) argued that there were two sorts of massage, scientific and non-scientific. The former could only be attempted by medical men with perhaps some slight indulgence towards aids. Massage was a specialty in medicine, just like dentistry, and he was of opinion that medical men only should be dentists.

Dr. SEQUEL (Paris) thought that students were too soon allowed to administer chloroform, and this led them to be careless in after life as to whom they employed for this purpose.

Dr. BERTIL BUHRE (Sweden) explained that in his country diplomas were given to gymnasts; consequently they ventured to treat patients without referring their cases to a medical man. On the other hand, as the masseur received no diploma he did not dare to act on his own

responsibility. As for quacks, they were only fined 12*s.*, but an unqualified individual who had attempted to stop a tooth had been fined £40, which showed that the Swedish dentists were better able to protect their interests than were the medical men.

Dr. DUGRON (Paris) said that many patients seen at the hospitals were suffering from serious consequences as the result of incompetent massage. But various classes of healers had formed a strong union or syndicate, with Members of Parliament and even medical men on their committee, and they were better prepared for defence than the medical profession for attack. They called themselves the association of all those who treat patients without medicine; and as they did not give or prescribe medicine they concluded that they could not be prosecuted for the illegal exercise of medicine. Unfortunately, qualified medical men were themselves very poor judges in regard to massage. He urged that massage should be taught and then, with the same inconsistency as the Italian delegate, he claimed for medical men a monopoly of massage, though he had declared that the majority knew little or nothing about the subject. Medical men, however, did know anatomy, and no one ignorant of anatomy should venture to practise massage.

Dr. BENEDICK agreed that all medical students should study massage and that massage should only be practised when controlled by fully-qualified medical men.

Dr. C. PETIT (Paris) raised the question of the sale of medicaments and poisons without prescription. If poison could not be obtained by itself it could always be bought in the form of a specialty or patent medicine. He thought that these specialties should only be sold when prescribed. Medical men alone could judge whether a special or patent drug was good, but the public were left to decide this matter for themselves on the reading of a pamphlet or advertisement.

Dr. BITTLE C. KEISTER (Virginia, America) read a strong denunciation of the so-called "cure-alls" and other nostrums. "About a year ago," he said, "I received a lengthy communication from the editors of a very respectable medical journal requesting my services in writing up some of their advertised preparations. In their letter they took particular pains to compliment my style of writing and insisted upon an immediate reply of my acceptance of their liberal (?) offer of a three years' subscription of their $3 journal for a single 'write up' of two medicines known as 'Viskolien' and 'Micajah's Uterine Wafers.'" Dr. Keister then gave a long list of drugs advertised in America, some in a very improper manner, but he saw "no objection to a carefully prepared and skilfully compounded preparation whose formula is correctly and clearly printed on the label, giving each ingredient its proper place and full sphere of merit." He thought that physicians who prescribed nostrums were acting against the better interests of the profession. It would also be to the better interests of the dispensing chemists if they gave up the nostrum trade, and he concluded by expressing the hope that the time would come "when the ethics of the two professions will be so sacredly and mutually respected that the druggist will disdain to handle in his stock any secret or semi-secret proprietary medicine, and the physician in a like manner will discountenance their use by not prescribing them."

The Section concluded by passing a resolution against the sale of poisons disguised in patent medicaments unless prescribed. It also expressed its opinion that unqualified persons should not be allowed to administer chloroform and that medical practitioners should not dispense drugs.

### THE DEBATE ON DEONTOLOGY.

On Thursday morning Dr. GRASSET read his remarkable paper on Deontology, of which I have already sent you a summary. The discussion on this communication was opened by Dr. DE GOUVÉA (Rio Janeiro), who related that medical ethics were at a low ebb till the formation of a medical society in the capital. This produced such good results that similar organisations were created in other parts of Brazil, and now these societies were all federated and the position of medical men from the deontological point of view had consequently greatly improved.

Dr. ANTONELLI (Paris) maintained that such matters could only be regulated by a superior council that should be removed from all local considerations and interests.

Dr. THIÉRY (Paris) said there should be a book for students explaining the principles of deontology.

Dr. MALBEC inquired who would have the authority to draw up such a code.

Dr. VANDAM replied by proposing that an international committee should be elected for this purpose.

Dr. PETERSEN (St. Petersburg) thought the proposal excellent. Each country should have a national committee and there should be a general international committee.

Dr. LASSALE said that in the department of the Gironde the Medical Syndicate had drawn up a code of deontology, but it had in no wise improved the black sheep of the profession.

Dr. ZAMBACCO PACHA (Constantinople) stated that in the East the conduct of medical men was most deplorable. Their alliance with the dispensing chemists was apparent to all. They frequently practised abortion, and in spite of this were not excluded from the learned societies. An international code of deontology could alone remedy this disgraceful state of affairs.

It was finally agreed that at a later stage the Congress would be called upon to vote on the election of an International Commission to deal with the whole question of deontology.

### THE MEDICAL CHAMBERS OF AUSTRIA.

The report by Dr. HENRY ADLER (Vienna) on the Medical Chambers of Austria was now read. Many medical congresses had been held before a definite project was approved in 1886 at the Innsbruck Congress, and it was on Dec. 22nd, 1891, that a law instituting these Medical Chambers was passed. The law states that all qualified practitioners must be attached to the Medical Chambers except in the case of a State functionary or an army surgeon, or when a medical man has formally retired from practice. The Chamber has to attend not only to such matters as concern the dignity of the profession but also to sanitary matters affecting the public health. The Chambers must organise all medical competitions that may be held, be ready to express an opinion on medical questions, to advise the authorities, and to act as a court of honour in regard to personal quarrels between members of the profession. In case of misconduct on the part of a medical practitioner the court of honour may, after a reprimand, impose a fine of not more than 200 florins and may finally temporarily or permanently withdraw the culprit's right to practise. The fines paid go to swell the funds of the Chamber. The Chambers themselves are controlled by the local government authority which may rescind the action of the Chambers when they have exceeded their powers. It may even dissolve a Chamber and order a fresh election. These Chambers must consist of at least nine members; that of Vienna has 29 members and the members are elected by the profession every three years. Medical practitioners who are more than 60 years old may refuse to be elected. All the services rendered are honorary. The hopes entertained as to the good effects to result from this institution have not been realised. Firstly, because the Chambers have not power enough to act. The Chambers have been of use in improving the course of medical education and in softening the acuteness of the competition between medical men, but there remain unaltered many abuses. They have had very little influence on sanitary matters nor have they been able to regulate the supply of medical men in accordance to the needs of the various localities. In regard to contract work for friendly societies, the fact that there is a grievance is now at last recognised, and both the State and these societies will soon be made to reckon with the medical profession, but the result will depend upon the energy and unanimity with which medical men support the Medical Chambers.

### THE GERMAN MEDICAL CHAMBERS.

Dr. PAUL SCHOBER read a paper on the Medical Chambers in Germany, saying that those of Prussia were the best organised. Their object was to attend to matters affecting public health and all that concerned the honour of the profession. Each of the 12 counties of Prussia had a Medical Chamber, and every 50 practitioners elected one representative member to these Chambers. The elections take place every three years and the votes are sent in writing by post to the president of the local Chamber. The Chambers have the right to make proposals to the local government authorities, especially on sanitary questions, and to be represented on the county sanitary councils by one or two members. Each Chamber has its court of honour, consisting of the president, three members, and a member of a legal Chamber. It can inflict an admonition, a reprimand, a fine not exceeding 3000 marks, and may also disfranchise the guilty member. Any practitioner in Prussia may be summoned before these Courts of Honour

and there is a supreme court of appeal at Berlin. There is also a central committee at Berlin consisting of one member from each Medical Chamber which acts as an intermediary between the Government and the Chambers and between the Chambers themselves. None of these functions are paid but allowances are made for travelling expenses. All medical practitioners have to subscribe, the amount being fixed by the Chamber according to their requirements, and consequently it varies. The fines inflicted are also kept by the Chambers. This institution of Medical Chambers is too new to say much as to the effects obtained; but, on the whole, the medical profession is well satisfied.

Dr. JAFFÉ (Hamburg) protested that there was nothing new in the idea of a Medical Chamber. Those of Bavaria were much older than the Prussian medical Chambers and the same might be said with regard to Saxony, Hesse, and Würtemberg. On the other hand, there were some parts of Germany that had no such organisations. In all cases the first object of a Medical Chamber was to maintain the dignity and authority of the profession. They were, however, in need of a generally accepted deontological code. He also thought that the code of honour governing a medical man engaged in civil practice should apply equally to army surgeons and State functionaries. There should be equality and there could be no difference in matters of honour. Though at Hamburg their Medical Chamber could also inflict a fine of 3000 marks, by far the greatest punishment was the publication of the sentence. He concluded by urging that some such institutions as the Medical Chambers should exist in all countries and that their deontological code should emanate from an international court.

### SHIP SURGEONS.

In the afternoon the Congress was again divided into two sections. In the first section the following resolution, proposed by Dr. BOREL and Dr. FAYOL, was adopted:—

Considering that ship surgeons have for mission (at least in France) the duty not only of medical surveillance over their ships but also of protecting the ports they enter from infectious diseases, this mission cannot be faithfully fulfilled if the surgeons are the dependant and paid servants of the ship-owners; therefore the Congress urges that the public authorities should render ship surgeons absolutely independent of ship-owners and that they should be responsible only to the maritime, sanitary, or port authorities.

### A MEDICAL STRIKE.

There was also some discussion as to the relations of medical men with the large life insurance companies, it being urged that these should be treated as ordinary clients and no special terms made. Then Dr. BAUDRY (Rennes) related that a medical strike had taken place at Ille-et-Vilaine against the poor relief authorities. The latter proposed to pay the medical men who attended paupers one franc per consultation and one and a half francs per visit, medicine included. The strike failed through the action of some "blacklegs."—The Congress blamed the latter and congratulated the practitioners of Ille-et-Vilaine upon their energy and courage.

Dr. ISSA HAMDY PACHA (Cairo) described the strange situation of a medical man who was calumniated by another practitioner who had violated his pledge of professional secrecy. The victim in this case could not defend himself because to do so he would also have had to violate professional secrecy and therefore had to suffer unjustly.—The Congress approved of this conduct and congratulated the practitioner in question upon his reserve.

### MEDICAL SOCIETIES.

In the second section Dr. MANOLESCU (Bucharest) related that a medical association of Roumanian doctors had been formed. It issued a monthly journal, held an annual congress, and discussed both sanitary and medical questions.

Dr. CAYLA described the medical societies of the department of the Seine. Some were 20 and others were 50 years old, but it was only during the last 10 years that they had discussed economical questions. At first these societies had been isolated; now they were united by their General Council.

Mr. ADOLPHE SMITH said that the description given corresponded with the general character of the numerous medical societies existing in England, several of which were over a hundred years old. These societies were highly respectable and rather than admit the black sheep of the profession had in some instances formed medical unions outside of their own ranks, for it was most necessary to bring into line those who were otherwise likely to become "blacklegs." Were the medical societies of France inclined to act in a similar manner?

Dr. DECOR replied that the French medical societies were old and when first established had not foreseen the present economic evolution. But it was a stain to be driven out of such a society or to be refused admittance, and this acted somewhat as a check.

Dr. BELLENCONTRE urged that the duality of societies was quite justified. There were the medical societies that might form the aristocracy of the profession, and there were the medical syndicates or fighting medical unions who would deal with the black sheep, &c.

Dr. CLEMENTS (Bucharest) said that the Roumanian Medical Association was more like the English and French medical sccieties. Medical men of good reputation all belonged to the association. Those whose reputation was more doubtful were put into a sort of quarantine and kept out of the association for a while. There was a general committee at Bucharest which acted as judge in such matters.

Mr. H. NELSON HARDY, treasurer of the British Police Surgeons' Association, read a paper urging that as the medico-legal advisers of the police the surgeons were insufficiently paid. They had to appear as witnesses for the Crown and often the remuneration they received did not cover the expense they incurred.

During the same afternoon Mr. ADOLPHE SMITH read a paper on the Organisation of Medical Unions in England, describing the development of economical forces which had rendered such organisation absolutely necessary. This was really an essay on political economy as affecting medical practice followed by an account of various medical unions formed in England. The paper was listened to with great attention and evoked marks of approval.

In the evening the members met at the Palais d'Orsay, where a banquet was held under the presidency of Dr. BROUARDEL, the Dean of the Faculty. This was the first banquet given in the magnificent hall of the hotel attached to the new station of the Orleans Railway. The band of the 130th Regiment of the Line played selections during the banquet. Of course there were numerous toasts and enthusiastic speeches, which were all the more enjoyable as the members present felt that their Congress had proved successful and wa likely to lead to great things in the near future

### INSURANCES FOR MEDICAL MEN.

As usual, there was a certain rush on the last day of the Congress. The papers that had not yet been read had to be hurried forward so as to afford time for the final resolutions which were to complete the work of the Congress. Consequently the sitting began early on the Friday morning when Dr. LANDE'S paper on Mutual Assistance and Insurance for Medical Men was read. First he showed the expense in time and money of medical education, and then that the practitioner's income depended on his health, and was rarely sufficient to admit of his saving any considerable sum. Therefore the practitioner should insure his life early when the premium to be paid would not be high. Unfortunately, medical men were, as a class, somewhat improvident. The paper then described the various charitable or semi-charitable institutions existing in different countries that were likely to help practitioners in distress. After hearing all these details the Congress endorsed the conclusions of the report which were to the effect that the means of insurance for medical men were not yet sufficiently developed, that there should be insurance against sickness and old age as well as against death, and that there should also be a fund for old-age pensions. Finally, medical men should not only pay annually insurance premiums for their own personal benefit, but they should also pay a small sum, be it only 10 francs a year, to create a general fund for the aid of any exceptional distress occurring among members of the profession or their families.

### THE FORMATION OF MEDICAL UNIONS OR SYNDICATES.

The paper on the Organisation of Medical Defence was taken next. It was written by Dr. SALOMON, member of the Administrative Council of the Union of the Medical Syndicates of France. Dr. Salomon considered that the medical profession had fallen in a great measure from its former high estate. Medical men had failed to notice the tremendous transformation going on around them. Other classes of the community had armed themselves, formed powerful associations, trades unions, coöperative societies,

benefit societies, and sick funds. What had the medical men done? Formerly no one outside the profession knew anything at all about medicine and they had to depend entirely on the medical man. Now with the spread of education, the literature of patent drugs and specialities, any number of people doctored themselves and rarely resorted to the advice of a medical practitioner. Others obtained such advice for a mere nominal sum through the agencies of friendly societies or for nothing from the hospitals. In the meanwhile medical men avoided each other, indulged in rivalries and antipathies, and by reason of their disorganised and divided condition became a ready prey and the victims of numerous forms of exploitation. It was said that there were too many medical men. The evil rested rather in the fact that too many medical men crowded together in large centres. Within the last ten years the number of practitioners had doubled in the departments of the Seine (Paris), Seine et Oise, Rhône, Nord, Bouches du Rhône (Marseilles), and Seine-Inférieure (Havre). Yet in other, especially rural, districts there were not enough medical men. There were also far more foreign medical men practising in France than there used to be. The author of the paper then reviewed at length all the causes that tended to diminish the possible income of medical practitioners, poor relief, charities, friendly societies, hospitals, improvement in the public health, prescribing chemists, the illegal practice of medicine, &c. The second portion of the report dealt with such measures of defence as had been attempted and mentioned that the honour was due to Orfila of having founded in 1833 the first French medical association. It was L'Association des Médecins de la Seine. Then in 1859 L'Association Générale des Médecins de France was established chiefly for the purpose of helping medical men in distress. But they also gave moral support in professional questions. The General Association and its branches were described as something less than a syndicate or union but something more than a mere charitable or benefit society. But the General Association of French Doctors had no mandate or authority to defend professional interests and nothing further was attempted till the year 1880, when the first medical syndicate was founded at Montaign, in the Vendée, by Dr. Mignen—unless the *Concours Médical*, which was founded in 1879, be taken as its precursor. This latter had been the work of Dr. Cézilly, whose absence from the Congress through illness led to a demonstration in his honour and to expressions of sympathy. When the number of syndicates had increased they formed a union of syndicates under the presidency of the late Dr. Gibert of Havre. In 1885 there were 40 medical syndicates in France. But the movement was in a great measure checked by the verdict given by the Tribunal of Domfront which declared that the law of March 21st, 1884, which gave a legal standing to syndicates, only applied to workmen's syndicates or trades unions. Now, however, a new law, that of Nov. 30th, 1892, on the practice of medicine, granted to the members of the medical profession the same rights as had already been acquired by the working classes, with this exception, however, that medical syndicates might defend the interests of the profession against all persons except the State, the Departments, and the Communes. Thus the powers and action of medical unions in France were more restricted than were workmen's unions. Of course, the medical profession would not rest satisfied till this disability was removed. Dr. Salomon then went on to say: "We are reproached for having imitated the workmen without perceiving that the necessities of our professional life place us nearer to workmen than to employers. As our colleague Dr. Chantemps said, 'We are workmen, the *élite* of the working-class if you like, but as skilled artisans we are alone in the accomplishment of our work—we do not pay wages to others to work for us.' This opposition explains many abstentions. The syndicate of the Seine, for instance, has only about 1000 members out of some 3000 practitioners. Not that our syndicate, like the other syndicates, has failed to render itself sympathetic, but because the greater number of our colleagues obey sentiments of selfishness, which prompt them to attend only to their own individual affairs, and does not allow them to pause to consider general interests or to trouble about confraternal relations and the future of the profession. Further, we must recognise that the syndicates have systematic irreconcilable opponents. These enemies are of two sorts, those who are at the top, and those who are at the bottom, of the ladder. At the top are the successful medical men who have nothing to fear from a crisis in the profession, who often do not even understand the dangers that menace the profession. At the bottom are poor, unscrupulous, wretched individuals of all sorts, who have to resort to all manner of stratagems to secure a bare existence and who keep away from us so that we should not see what they do." In spite of all this the cause was gaining ground daily. The report then went on to relate that the Medical Syndicates had succeeded in causing the law to be more strictly applied in prosecuting quacks, in bringing grievances to the front, and produced some improvements in raising the tone of the profession, and in engendering a more brotherly feeling among practitioners.

When the discussion was thrown open Dr. DUPLESSIS eloquently pleaded in favour of liberty while to-day everyone was seeking to establish rules and checks. He thought that the only check should be a moral check. He strongly objected to have the conduct of a medical man judged by a lawyer. The latter could never understand the ethics of a man of science. The lawyer adhered rigidly to the text of a law; the man of science knew that what was thought to be the truth yesterday had been proved false to-day, and what they now believed might be demolished to-morrow. By all means let moral restraint be brought to bear, but there must be no compulsion.

Dr NOIR replied that the liberty of to-day could not rest on the same basis as that of yesterday. The economic evolution had altogether changed the basis. To-day they had to abandon a great deal of their individual freedom in favour of the spirit of solidarity and so as to acquire the power of resistance.

Mr. ADOLPHE SMITH said there was no freedom for the man who was starving—he had to sell himself to the first bidder. He had more freedom in submitting to the discipline of his professional union than to the tyranny of a taskmaster who profited by his isolation and helplessness. So far the Congress had been mainly useful in bringing forward a long list of grievances. It was time to pass from the diagnosis to the prescription of remedies. United, the profession was the absolute master of the situation; the great battle, therefore, would be, not against outsiders, but against medical men who refused to unite. The medical man was the principal foe of the medical profession. Thus, for instance, at Wolverhampton and Coventry the medical unions of those towns would have been successful recently had not medical men from Birmingham come to consult with ostracised practitioners in those two towns. On the other hand, the consultants of Norwich had refused to act in a similar manner on behalf of the ostracised practitioners at Great Yarmouth. How were the more prosperous members of the profession to be brought into line? For his part he thought that there had not been sufficient use made of the weapon of publicity; and even if this were to lead to prosecutions for libel, or in France to arrest for attempting to interfere with the freedom to work, no great cause had lived without its martyrs and a public trial was the cheapest form of publicity, the most effective means of propaganda.

After some further discussion the following resolutions were carried:—

1. For the purpose of preservation and of professional defence all medical practitioners should unite and act according to the principles of solidarity.
2. This union and this solidarity will be established by the organisation of societies which may be at once chambers of discipline and associations for professional defence.
3. The syndicate will more especially take in hand the work of professional defence, for it alone has the necessary attributes to struggle against the attacks made by society upon our monopoly.
4. There should be but one syndicate per department, so that all members of the syndicate shall have to submit to the same rules.
5. The same union and solidarity should exist between the syndicates as exists between the members of the syndicates. They will thus form the syndical union and the union of the syndicates.
6. The union of the syndicates shall form, for France, a single federation for the entire territory. It shall be the agent of centralisation and of decentralisation, and ought to be officially invested with the power to go to law as the representative and in the stead of any one affiliated syndicate.

After this important vote the Congress adjourned.

### THE MEDICAL ASSOCIATION OF NORWAY.

In the afternoon the Congress at first divided into two sections and subsequently met collectively to close the proceedings. In the first section Dr. HANSSON (Christiania) gave some account of the Norwegian Medical Association. It had drawn up a deontological code dealing with the relations of medical men towards medical men. It also treated the question of sick club practice and laid down as

a principle that the post of medical officer to such institutions was not to be accepted unless with the consent of the local branch of the Medical Association. They had secured an increase amounting to 75 per cent. on the sum paid to medical officers of these clubs previously to 1888. The association had likewise established and maintained a minimum for country practice, but then about 90 per cent. of the medical men in Norway belong to the association. This was in itself a sufficient explanation of these remarkable successes.

MEDICAL CHARLATANS.

Dr. LASSALE then spoke about medical charlatans. It was a mistake, he said, to believe that all charlatans were outside the profession and illegal practitioners. There were two means of action—conscience and the law. Those who had a conscience had no need of the law; those who had no conscience must have the law. The profession should organise its own police which should warn the public against the charlatans who were within the ranks of the profession. He was in favour of discipline as well as of liberty. While they talked about liberty their difficulties and misery increased. Besides, if liberty was unnecessarily and vexatiously interfered with the profession could easily change those whom it had placed in command.

Dr. BENEDICK (Vienna) said that he considered that the Austrian Medical Chambers had taken some false steps and he was now fighting against some details of their policy. Nevertheless, he was very glad that these Chambers existed. Every institution had its good and its bad side. He was in favour of Medical Chambers possessing extensive powers. There would be abuses and conspiracies, intrigues, troubles, and quarrels; but all this could be cured by the vote of the members, and in any case the good would outbalance the evil.

Some discussion ensued as to the advisability of forming an Order of Doctors, but the hour was too advanced to go seriously into this matter.

THE CONCLUDING SCENE.

At about 5 o'clock the members from the other section returned to the great amphitheatre of the École de Médecine and the Congress, sitting as a whole, at once proceeded to discuss where and when it should meet again. A proposal that it should meet in the same town as that in which the International Medical Congress met was rejected on the ground that the Congress should meet where the movement in favour of forming medical unions or syndicates had most need of its presence. It was finally decided that the Congress would meet in three years' time in Belgium. Then a great deal was said about an international committee which should meet and try to draw up a deontological code. Beyond a general feeling that this ought to be done, that the committee which had organized the congress, and Dr. Vandam who had made the proposal, should help in the work, nothing very decisive was voted. No names were proposed of members to constitute this committee, and the matter at present assumes merely the character of a pious wish. Nevertheless, it is probable that something will be done and a project presented to the next Congress.

A number of resolutions carried in the sectional meetings were read out. Some met with approval, others were referred to the French National Congress as being of too local a character, and then Dr. LEREBOULLET rose to close the Congress. He spoke with feeling of the gratitude that was due to all who had so efficiently helped this first and most difficult step towards the international organisation of the medical profession for the purpose of defending its ethical principles and economic interests. With deep emotion he declared himself convinced that a great and good work had been accomplished.

Dr. VANDAM moved a vote of thanks from the Congress to its President, Dr. Lereboullet, to the secretary, Dr. Jules Glover, and to all the other French organisers, which was cordially awarded.

With cheers and many friendly salutations and expressions of mutual goodwill the members of the Congress dispersed.

Paris, July 30th.

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VACCINATION EXPENDITURE.—At the meeting of the Falmouth Board of Guardians, held on July 26th, it was reported that the vaccination fees during 1898 and 1899 amounted to £17 and £26 respectively. For the first six months of 1900 the fees amounted to £255.

# THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary Comitia was held on July 26th, Dr. W. S. CHURCH, the President, being in the chair.

The PRESIDENT announced that the Bradshawe Lecture would be delivered on Nov. 6th by Dr. Archibald Garrod on "The Urinary Pigments and their Pathological Aspects."

Dr. Gee, Sir R. Douglas Powell, and Dr. F. Andrewes were nominated to adjudicate on the Weber-Parkes Prize for 1901.

The following gentlemen having passed the required examination were admitted Members of the College: Alexander Gunn Auld, M.D. Glasg., Noel Dean Bardswell, M.D. Edin., L.R.C.P., Arthur John Cleveland, M.D. Lond., L.R.C.P., Henri Dardenne, M.D. Edin., Francis Woodcock Goodbody, M.D. Dub., Francis Henry Hawkins, M.D. Edin., Thomas David Lister, M.D. Lond., L.R.C.P., Wilfrid Brougham Warde, M.D. Lond., L.R.C.P., Thomas Rowland Charles Whipham, M.A., M.B. Oxon., L.R.C.P., and Oliver Key Williamson, M.A., M.B. Camb., L.R.C.P.

Communications were received (1) from the Secretary of the Royal College of Surgeons of England; (2) from the Director-General, Medical Department of the Navy, on the registration of volunteers for emergency service as surgeons in the Royal Navy; and (3) from the Vice-Chancellor of the University of London, requesting the College to elect two Fellows to be Members of the Senate of the University. Dr. P. H. Pye-Smith and Dr. W. H. Allchin were elected Senators.

On the proposal of Dr. NORMAN MOORE, seconded by the REGISTRAR, the following motion was carried by acclamation:—

That a vote of thanks and the sum of 100 guineas be given to Dr. Allchin as an acknowledgment of his services during several years and on numerous occasions as secretary to the University Committee, as representative of the College before the Royal Commissioners and the Prime Minister, and in many other ways in relation to the reconstruction of the University of London.

On the recommendation of the committee of management the following institutions were added to the list of institutions recognised by the Examining Board in England: (*a*) For instruction in chemistry, physics, and practical chemistry, the Municipal Technical School, Halifax, and the Modern School, Bedford; (*b*) for instruction in chemistry, physics, practical chemistry, and biology, the Technical College, Huddersfield, and the Municipal Technical College, Derby.

Reports were received from the representative of the College on the General Medical Council, from the Fever Hospitals Committee, from the Finance Committee, from the Library Committee, and from the curators of the museum. By-law 103, as amended to make it conformable to the conjoint regulations, was re-enacted a second time.

The Moxon medal was awarded to Sir William Tennant Gairdner, K.C.B., F.R.S., M.D. Edin., Emeritus Professor of Medicine in the University of Glasgow, as having pre-eminently distinguished himself by observation and research in clinical medicine.

The adjudicators of the Weber-Parkes prize reported that they had been unable to award the prize as no essay of sufficient merit had been presented.

The following were appointed censors and examiners for the ensuing year. Censors:—William Cayley, M.D. Lond.; Charles Theodore Williams, M.D. Oxon.; Sir Dyce Duckworth, M.D. Edin.; and Thomas Henry Green, M.D. Lond. Examiners:—Chemistry and Chemical Physics: Percy Faraday Frankland, Ph.D., F.R.S.; Frederick Daniel Chattaway, Ph.D., D.Sc.; Arthur Pillans Laurie, D.Sc.; Henry Wilson Hake, Ph D.; and Henry Foster Morley, D.Sc., F.C.S. Materia Medica and Pharmacy: Francis Warner, M.D. Lond., William Carter, M.D. Lond., Hector William Gavin Mackenzie, M.D. Edin., Edwin Cooper Perry, M.D. Cantab., and James Calvert, M.D. Lond. Physiology: Marcus Seymour Pembrey, M.D. Oxon., John Sydney Edkins, M.B. Cantab., and Robert Arthur Young, M.D. Lond. Anatomy: George Robertson Turner, F.R.C.S. Eng., L.R.C.P. Lond., and Alfred William Hughes, M.B. Edin., F.R.C.S. Eng. and Edin. Medical Anatomy and Principles and Practice of Medicine: Joseph Frank Payne, M.D. Oxon., Sir Thomas Lauder Brunton, M.D. Edin., Thomas Barlow, M.D. Lond., Francis

de Havilland Hall, M.D. Lond., Herbert Isambard Owen, M.D. Cantab., Percy Kidd, M.D. Oxon., John Abercrombie, M.D. Cantab., Nestor I. C. Tirard, M.D. Lond., Donald MacAlister, M.D. Cantab., and William Hale White, M.D. Lond. Midwifery and Diseases peculiar to Women: Charles James Cullingworth, M.D. Durh., John Phillips, M.D. Cantab., Amand J. McConnel Routh, M.D. Lond., C. Montagu Handfield-Jones, M.D. Lond., and Robert Boxall, M.D. Cantab. Public Health: Part I., James Lane Notter, M.D. Dub.; Part II., William Henry Corfield, M.D. Oxon.

Professor Clifford Allbutt, Regius Professor of Physic at Cambridge, will deliver the Harveian Oration on Oct. 18th (St. Luke's Day). Dr. Henry Head has been appointed the Goulstonian Lecturer, Dr. J. F. Payne the Lumleian Lecturer, and Dr. W. D. Halliburton the Croonian Lecturer for 1901, and Dr. J. W. Washbourn the Croonian Lecturer for 1902.

# THE FIRST INTERNATIONAL CONGRESS OF THE MEDICAL PRESS HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

## THE OPENING CEREMONIES.

ON Thursday afternoon, July 26th, the inaugural ceremony of this Congress was held at the Press Pavilion on the Exhibition grounds. Detained at the International Congress of Deontology I could not be present, but from what I heard from those who attended and from papers remitted to me I am able to give some account of the proceedings. It appears that there was quite a demonstration when Professor Virchow of Berlin arrived. Everyone rose and sought to manifest his respect for the eminent German *savant*.

Professor CORNIL opened the proceedings. He welcomed Professor Virchow who for 60 years had grouped in his *Archives* the writings of the most learned Germans. In France also the medical press had grown and could now boast of some 30,000 readers. It reflected medical life and should help to teach medical men what were their duties and what were their rights. Modern progress had been achieved by two scientific revolutions, first the pathological conception of the cellules, and secondly the Pasteur doctrines. The medical press had largely contributed to spread these new teachings.

M. MILLERAND, Minister of Commerce, who had entered while Professor Cornil was speaking, now rose and claimed that he also had been a member of the press and would doubtless return to journalism when his Ministerial career was at an end. If to-day they had scientific journalism as distinct from ordinary journalism, this was due to the natural economic evolution which classified and sub-divided labour. Besides many of the questions to be discussed interested the entire press, such as, for instance, the division between legitimate publicity and that form of publicity which tended to degrade the journalistic profession. It would be a great honour for the Congress should it be able to deal with such delicate matters. He concluded in welcoming all the foreign delegates and especially Professor Virchow.

Professor LANDOUZY recalled the fact that the first newspaper published in France was founded by a medical man and that Renaudot's Journal sometimes dealt with medical matters. The press, he said, was the most universal of universities and it would be the mission of the medical press to aid the Government to solve all matters affecting the interests of the profession.

Professor VIRCHOW congratulated the Association of the French Medical Press on having taken the initiative in organising an international congress of the medical press. He was happy to think that the creation of an international association might result from the Congress and thought that it was quite right for the medical press to meet apart from the Medical Congress.

After the election of the officers for the Congress all the members went by a special steamer to the Hôtel de Ville, where they were received by M. Grébauval, President of the Paris Municipal Council, and by M. Lépine, Prefect of the Police.

Professor CORNIL introduced the delegates and pointed out the importance of the medical press, as there were now actually 300 medical papers published in France. It is to be hoped that on this occasion Professor Cornil omitted to mention that the medical press had 30,000 readers, for as this would mean an average of only 100 readers per journal it does not say much for at least some of these publications. Professor Cornil was more happy when he described the practical services of the medical press and how Berlin owed its sewers and its sewage farms to the active press propaganda led by Professor Virchow.

Both M. GRÉBAUVAL and M. LÉPINE made suitable replies and then led the delegates to a well-supplied buffet.

## NEWSPAPER PUFFS.

The Congress began business on Friday morning in the great amphitheatre of the École Pratique at the Faculty of Medicine. Professor CORNIL was in the chair. The Government delegates of the foreign medical press were first called upon to speak, and Dr. MENDIZABAL, of the *Gaceta Medica* of Mexico; Dr. GALLET, in the name of the Belgian medical press; Dr. DIAKONOW, for the Russian medical press; Professor BROSSI for Italian journals; Dr. HANSSON for the Norwegians; Dr. EHLERS for the Danes; and Dr. POSNER for the German medical journals, all made short congratulatory speeches.

Dr. MARCEL BAUDOUIN then described his system of tabulating and registering all scientific publications in a manner that greatly facilitated researches. This was followed by a discussion on the sort of advertisements that might be published in a medical paper. The great question related to what is known in France as a *réclame*, a term which may be generally taken to mean a puff. Of course, it is easy in discussing to confuse the issue. Notices and criticisms even when favourable to an article which has a commercial value may be quite legitimate. What is illegitimate is that such notices should be paid for as if they were advertisements. Dr. POSNER protested that such *réclames* were unknown in Germany.

In France, to make matters worse, papers redolent with *réclames* were now being distributed gratuitously to the members of the profession.

A report on Gratuitous Medical Journals by Dr. LABORDE and Dr. ROMME was read in which they urged that advertisements must be relegated to a special distinct part of the paper and not inserted in all directions.

The discussion was adjourned till the next day.

Dr. BLONDEL urged that medical papers should not publish advertisements of drugs if these were likewise advertised in the general political press.

After discussing without coming to any particular decision the question of newspaper exchanges Dr. DE MAURANS read a paper urging that efforts should be made to adopt a unique international classification for scientific terms. The morning sitting was terminated by Dr. DOYEN who reproduced by a kinematograph several operations which he had performed. This exhibition excited much interest and admiration; its practical utility, especially for students, was highly appreciated.

At the afternoon sitting Professor C. RICHET spoke on the necessity of decimal classification of periodic journals. In the 16 volumes of the Index Catalogue, which dates back 20 years, there were already 1,097,535 separate titles of articles. The decimal system consists of placing in nine separate categories all phases of human knowledge. Each of these would be subdivided into another nine.

This was followed by the reading of a paper on the Question of Copyright by M. POUILLET, M. ROCHER, and Dr. DE MAURANS.

After a few words of discussion Dr. MARCEL BAUDOUIN followed with his paper on the Property of the Idea. A summary of both these papers was published in THE LANCET of July 21st last and therefore I need not refer to them again. As a result of the discussion that followed on the reading of these papers the Congress adopted a resolution to the effect that Article 7 of the Literary Convention of Berne should apply to the medical press. As for the property of the idea, after some discussion this complex question was referred to future congresses. After another and long discussion on the copyright of newspaper articles, a resolution was carried to the effect that newspaper articles, criticisms, &c., should not be quoted without mentioning the name of the author and the publication. With regard to the reproduction of lectures delivered before learned societies the general custom was to ask the professor

permission to print some account of what he had said, and as a rule such requests were not refused.

This concluded the day's sitting and the members of the Congress were conducted to Professor Richet's laboratory, where they took wine together.

*(To be continued.)*

# VITAL STATISTICS.

## HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6531 births and 4313 deaths were registered during the week ending July 28th. The annual rate of mortality in these towns, which had increased from 14·5 to 16·4 per 1000 in the three preceding weeks, further rose to 19·4 last week. In London the rate was 21·0 per 1000, while it averaged 18·3 in the 32 provincial towns. The lowest death-rates in these towns were 11·1 in Derby, 11·4 in Bolton, 11·5 in Huddersfield, and 11·6 in Bristol; the highest rates were 22·0 in Leeds, 22·1 in Sheffield, 24·1 in Salford, and 28·0 in West Ham and in Liverpool. The 4313 deaths in these towns included 944 which were referred to the principal zymotic diseases, against 427 and 555 in the two preceding weeks; of these 662 resulted from diarrhœa, 88 from whooping-cough, 76 from measles, 66 from diphtheria, 27 from "fever" (principally enteric), 24 from scarlet fever, and one from small-pox. The lowest death-rates last week from these diseases occurred in Wolverhampton, Bristol, Burnley, and Gateshead, and the highest rates in West Ham, Liverpool, Salford, Leeds, and Sheffield. The greatest mortality from measles occurred in Brighton, Swansea, Derby, and Huddersfield,; from scarlet fever in Blackburn; from whooping-cough in West Ham and Sheffield; from "fever" in Portsmouth; and from diarrhœa in West Ham, Liverpool, Salford, Leeds, and Sheffield. The 66 deaths from diphtheria included 27 in London, 10 in Leicester, six in Sheffield, five in West Ham, and four in Leeds. One fatal case of small-pox was registered in Blackburn, but not one in any other of the 33 towns. The number of small-pox patients in the Metropolitan Asylums Hospitals, which had been 17, 17, and 14 at the end of the three preceding weeks, had further declined to 11 on Saturday last, July 28th; three new cases were admitted during the week, against four, four, and one in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1859, against numbers increasing from 1754 to 1877 on the seven preceding Saturdays; 207 new cases were admitted during the week, against 229, 208, and 222 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 160 and 169 in the two preceding weeks, further rose to 196 last week, and were 19 above the corrected average. The causes of 54, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Bradford, Hull, and in eight other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, Manchester, and Newcastle.

## HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·2 and 19·0 per 1000 in the two preceding weeks, declined again to 17·5 during the week ending July 28th, and was 1·9 per 1000 less than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 10·6 in Leith and 13·0 in Dundee to 18·9 in Glasgow and 19·3 in Paisley. The 541 deaths in these towns included 36 which were referred to diarrhœa, 24 to measles, nine to scarlet fever, nine to whooping-cough, six to "fever," two to small-pox, and one to diphtheria. In all 87 deaths resulted from these principal zymotic diseases, against 73 and 102 in the two preceding weeks. These 87 deaths were equal to an annual rate of 2·8 per 1000, which was 1·4 per 1000 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 23 and 38 in the two preceding weeks, declined again last week to 36, of which 23 occurred in Glasgow and six in Aberdeen. The deaths from measles, which had been 17 and 18 in the two preceding weeks, further rose to 24 last week, and included 18 in Glasgow and five in Edinburgh. The fatal cases of scarlet fever, which had been seven and five in the two preceding weeks, rose again last week to nine, of which five were registered in Glasgow and three in Paisley. The deaths from whooping-cough, which had been 21 and 22 in the two preceding weeks, declined to nine last week, and included eight in Glasgow. The six deaths referred to different forms of "fever" showed a decline of five from the number in the preceding week, and included three in Glasgow and two in Dundee. The fatal cases of small-pox, which had been two, one, and two in the three preceding weeks, were again two last week, and were both recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 71 and 80 in the two preceding weeks, declined again last week to 67, but slightly exceeded the number in the corresponding period of last year. The causes of 31, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

## HEALTH OF DUBLIN.

The death-rate in Dublin, which had increased from 17·8 to 23·4 per 1000 in the three preceding weeks, declined again to 18·3 during the week ending July 28th. During the past four weeks the death-rate in the city has averaged 19·4 per 1000, the rate during the same period being 16·2 in London and 17·2 in Edinburgh. The 123 deaths belonging to Dublin registered during the week under notice showed a decline of 34 from the number in the preceding week, and included five which were referred to the principal zymotic diseases, against six, eight, and 13, in the three preceding weeks; of these, four resulted from diarrhœa, and one from diphtheria. These five deaths were equal to an annual rate of 0·7 per 1000, the zymotic death-rate during the same period being 4·7 in London and 1·3 in Edinburgh. The fatal cases of diarrhœa, which had been two, one, and four in the three preceding weeks, were again four last week. The mortality from diphtheria also corresponded with that in the preceding week. The 123 deaths in Dublin last week included 24 of infants under one year of age and 33 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a slight decline from the numbers recorded in the preceding week. Four inquest cases and four deaths from violence were registered; and 39, or nearly a third, of the deaths occurred in public institutions. The causes of five, or more than 4 per cent., of the deaths in the city last week were not certified.

# THE SERVICES.

## AFFAIRS IN CHINA.

ALTHOUGH there is every reason to hope that our worst fears regarding the Legations at Peking have not been realised up to the present time it is clear that an advance on the part of the Allied Powers will have to take place—if, indeed, it has not already begun. The undertaking is a large and formidable one both in its political and its military aspects. The task of taking part in it has occurred at an unfortunate time for this country, which is already occupied with a big war elsewhere. The Indian contingent is, as we have already said, accompanied by field hospitals, hospital ships, and medical establishments from India, and a number of medical officers from the fleet will, no doubt, be available to take part in the expedition, together with some officers of the Royal Army Medical Corps serving with the troops in China. As regards the German force, it will probably be accompanied by a large medical contingent, as any number of medical officers and members of the civil medical profession are available in that country for army requirements. We shall see how the Germans, Russians, and other Powers who are not embarrassed by having any other war in hand, manage to carry out the medical part of the forthcoming campaign in China, especially as, probably for the first time in their experience, they will have to convey their troops there by sea transport.

## THE SUPPLEMENTARY ARMY ESTIMATES.

The Army Medical Service formed the subject of a good deal of discussion on the occasion of the House going into

Committee of Supply on the Supplementary Army Estimates. There is, however, no need to go over all the ground again at the present time, because our readers are already familiar with most of the points that were raised. It is well known that the strength of the medical establishment was dangerously low at the outbreak of the present war in South Africa and that it had to be reinforced by the employment of a large number of civil surgeons. Moreover, the occurrences in China, the West Coast of Africa and elsewhere, have vastly increased the demand for medical officers in the public services at the present time. It is only fair to say, however, that the present Secretary for War did much more than his predecessors had done to restore the popularity of the service, but whether it were owing to want of time or from other causes these measures have not so far been productive of the effect anticipated. As the matter stands at present the whole subject of the organisation of the army medical services and the provision of an independent medical transport and a large medical reserve will have to be taken up and most carefully considered at the close of the present war in South Africa.

### THE SOUTH AFRICAN COMMISSION.

It would, of course, be premature and improper to discuss the subjects under investigation by the Commission, but we may nevertheless advert to the published evidence given by one of the invalided soldiers at Netley. His testimony has, of course, no pertinence or weight in regard to what was alleged to have taken place elsewhere and outside his own experience, but it exhibits such a fine type of soldierly qualities that it is well worthy of being recorded in our columns. "No. 7. Had been in the Indian Mutiny, China, and Abyssinian wars, and left New Zealand as a volunteer, paying his own expenses, and joined the local forces. Wounded in the spine at Paardeberg. Never was more surprised in his life than when he went down to the field hospital and found the comfort and provision which were made for the sick and wounded. Only one in a hundred made any kind of complaint, and those ought to take their mothers with them wherever they went."

### AN UNDESIRABLE MEMBER OF THE ROYAL ARMY MEDICAL CORPS.

A youth aged 18 years, named Arthur Deighton, charged with violently assaulting the police, was sent to prison by Mr. Bros from the Clerkenwell Police-court on July 31st for 21 days. After some disorderly conduct he was arrested by a police constable, but six members of the force and a civilian were required to take him to the station. The prisoner, who wore an old khaki uniform, said that he belonged to the Royal Army Medical Corps, that he had been invalided home from South Africa, and that he was now on furlough. If this statement be unfortunately true we can only regret that such a person should ever have been admitted to the Royal Army Medical Corps. But if he is a member the authorities will no doubt see that he has no further opportunity of disgracing it.

### DEATHS IN THE SERVICES.

Deputy Inspector-General Rinso Robert Siccama, M.R.C.S. Eng., L.S.A., R.N. (retired), on July 19th. Mr. Siccama received his medical education at King's College Hospital, London, and qualified M.R.C.S. and L.S.A. in 1857. He shortly afterwards entered the Royal Navy as a surgeon and retired some years ago with the rank of deputy inspector-general of hospitals. After his retirement he settled in Bath and soon made himself very popular. Taking an interest in municipal matters he represented the Landsdown Ward in the Bath city council. Recently he resigned his seat and went to Weymouth for the benefit of his health, where his death took place. Much regret is felt in Bath at his decease.

### TRANSVAAL WAR NOTES.

The following steamships have arrived at Southampton: the *Nubia* on July 25th, the *Aurania* on July 26th, and the *Manchester Port* on July 28th. They brought respectively 272, 620, and 313 sick and wounded men from South Africa who were admitted to the wards of the Royal Victoria Hospital, making a total of 1205 admissions in four days.

Dr. A. Conan Doyle and Professor A. Ogston arrived in England on July 27th from South Africa.

# Correspondence.

"Audi alteram partem."

## "ADDISON'S DISEASE AND LEUCODERMA."

*To the Editors of* THE LANCET.

SIRS,—Writing, as I do, away from my notes and references, I shall not do more than reply as shortly as possible to the important communication of Sir Samuel Wilks in THE LANCET of July 28th. I am sincerely glad, however, that he has at length broken the silence which I inferred from my previous attempts to "draw" him that he preferred to maintain. For I need scarcely add that, apart from personal regard for him, which is that of all his friends, all the world will join with me in holding that if any point about Addison's disease can really be settled by authority Sir Samuel Wilks is the one living authority on the subject.

But a "law of nature"—or an "apparent exception" thereto (I fully accept the implication here implied)—cannot be dogmatically disposed of by mere authority. It is not because Newton wrote the "Principia" that we accept its conclusions or believe even in the law of gravitation. And it may be permitted to me to maintain, in the face of Sir Samuel Wilks's opinion, that the relation of leucoderma to Addison's disease is not settled by anything he has written upon the subject up to now. But his last communication to you unquestionably tends to clear the position, and I hope this imperfect reply will do so still more. I am not, indeed, disposed to admit (and I doubt whether it is intended to be conveyed) that in my lecture to the Medical Graduates' College I attributed to Sir Samuel Wilks any views that he does not in point of fact hold. If there is anything to be regretted, in my opinion, it is that he has been led by his attitude in this communication into even seeming to affirm that the continuity of the pigmentation—the "uniform staining of the skin"—in Addison's disease is to be regarded as a "law of nature." That in the very great majority of the cases the pigmentation is continuous, as Addison, Wilks, and Greenhow all describe it, is not (so far as I know) disputed. Indeed, it has occurred to me to have to demonstrate cases of Addison's disease to clinical classes in which there were present natives of India, and I have been restrained only by personal considerations from pointing out in words the very exact resemblance of the tint in the patient to that of the members of the class aforesaid But vitiligo (apart from Addison's disease) is generally reputed to be much more common in the dark races than among Europeans; and, if so, why should it not also appear among the accidents (if we may so call them) of the Addisonian pigmentation? Furthermore, if Dr. Radcliffe Crocker is right (but I am citing him only on the basis of a casual conversation) in supposing that a previous darkening of the integument is usually or always a first stage in vitiligo (or leucoderma), there is probably some "law of nature" connecting the two states which demands more investigation than has yet been given to it even by Sir Samuel Wilks. I do not, therefore (as at present advised), feel disposed even on Sir Samuel Wilks's great authority to accept the dictum that in the true Addison's disease there shall absolutely *not* be found an instance of leucoderma, and that Addison's own illustration to the contrary is "a false representation."

Now as regards this classical and much controverted instance in Addison's own book. It is true that there was no post-mortem examination in that case as there delineated, but Sir Samuel Wilks has not adverted to a fact (which I noticed in my lecture) that Addison records this case side by side with another in which there was an examination, and where the capsules were found diseased, but in which no drawing could be procured; and certainly no doubt existed in Addison's mind at that time that the two cases were exactly parallel in every respect both as regards the skin and where the condition of the adrenals. Personally, I see no reason to doubt that Addison adhered to his judgment of this case, or to presume that he would in a second edition have relegated it to the category of "those doubtful instances which have done so much to retard the progress of the discovery." But of course it is open to Sir Samuel Wilks, or to anyone else, to doubt this case. In fact, I only alluded to the apparent discrepancy of opinion on this as "a point requiring to be more carefully dealt with."

As regards my own case, however, very briefly alluded to in the Transactions of the International Medical Congress (London, 1881) and afterwards published by Dr. McCall Anderson, I cannot quite submit to allow its relevancy to be brought into question on the grounds stated. It is true that I gave no extended description of the case, for I had no cognisance of it except at the one visit in consultation. But I affirm now with the utmost confidence: (1) that the disease was recognised during life both by myself and Dr. Maclaren of Glasgow as having all the constitutional symptoms of Addison's disease; (2) that this was confirmed later by Dr. McCall Anderson, who had at an earlier stage regarded the pigmentary changes as vitiliginous (as indeed they assuredly and typically were); and (3) that the examination after death made by the late Dr. Foulis of Glasgow in full knowledge of the diagnosis, and with every possible care as regards histological details revealed exactly the state of the adrenals regarded by Sir Samuel Wilks himself as characteristic of Addison's disease. I am not concerned at present with the other elements of doubt cast on Addison's observations, but I venture to continue in the belief that the "law of nature" alluded to by Sir Samuel Wilks as regards the continuity of the pigmentary change will have to submit to some further "apparent exceptions" before we can be considered as having quite done with the subject.

I am, Sirs, yours faithfully,

Penmaenmawr, N. Wales, July 30th, 1900. W. T. GAIRDNER.

## "RODENT CANCER OF THE CORNEA."

*To the Editors of* THE LANCET.

SIRS,—The "rare chronic creeping ulcer of the cornea" spoken of by Mr. Nettleship does not differ from the condition described in my case simply because it is one and the same thing. A reference to my article will show that I used the terms "rodent ulcer" and "rodent cancer" as interchangeable. The reasons for my assuming malignancy in the ulcer were: (1) age of patients (nearly always late middle life); (2) the raised sinuous undermined edge of the ulcer and its chronic course; (3) nothing but destruction of the growing edge by the cautery appears to be able to arrest the progress of the malady; and (4) the one pathological examination of which I can find any record is that of Schmidt-Rimpler who describes appearances not inconsistent with malignancy. Perhaps the most suggestive points about Mr. Nettleship's "chronic creeping ulcer" are that lymphatic glands are not invaded; that the condition remains local; and, above all, that it does not recur after complete removal. These are cardinal features of the cutaneous rodent ulcer, which is nowadays admitted on all hands to be carcinomatous. They were present in my mind when I spoke of the condition as "rodent cancer of the cornea," although we must all admit that at present the etiology of the disease is a matter of speculation. Mr. Nettleship speaks of the "chronic creeping ulcer of the cornea" as "somewhat rare," whereas in my original article I called it "one of the rarest affections of the eye." My reasons were: (1) not a single identifiable case can I find either in periodical English literature or in the Transactions of the Ophthalmological Society of the United Kingdom; (2) during the last 10 years there appear to have been only five recorded cases—namely, four by Dufour (Société Français d'Ophtalmologie, May, 1897), and one by Schmidt-Rimpler (*Archiv für Augenheilkunde*, 1898); and (3) Vossius, in Giessen, saw three cases among 25,000 ophthalmic patients and Jany of Breslau one only among 66,000. On these grounds I based my conclusion that "rodent ulcer of the cornea" was an extremely rare affection.

I am, Sirs, yours faithfully,

Welbeck-street, W., July 30th, 1900. SYDNEY STEPHENSON.

*To the Editors of* THE LANCET.

SIRS,—The assumption that Mr. Sydney Stephenson's interesting case of corneal rodent ulcer, published in THE LANCET of July 21st (p. 173), was cancerous must have been felt by many ophthalmic surgeons who read the account to be "not proven," and I note that Mr. Edward Nettleship has given expression to his doubts on the matter and asks for further proof. I am very interested in the point, as I have quite recently had under my care the healthy little and not quite three-year-old daughter of healthy parents, living in a most salubrious neighbouring seaside town, where the father is a medical man, with a state of things, as far as can be judged from the description and diagram, identically the same as in Mr. Stephenson's case, except that the upper part of the cornea was attacked. The condition is so rare, at least in these parts, it being the only case which I have encountered in a period of 11 years, that it was not until the ulcer went on steadily advancing in spite of all the usual remedies that I had the child put under chloroform, and after a thorough examination, which I could not make before, recognised the grave nature of the case, when careful scraping and the energetic single application of pure carbolic acid, spudding it well in under the epithelium of the advancing edge, quite arrested the disease and led to a complete cure without causing so much destruction of tissue as the actual or galvano-cautery would have done. Clinically this case appears to me exactly the same as Mr. Stephenson's. Would he in my three-year-old patient consider it cancerous? Was it the age of his patient that led him to adopt this view of its nature, or what? A critique of Ulcus Corneæ Rodens appeared in the *Ophthalmic Review* for April of this year.

I am, Sirs, yours faithfully,

Norwich, July 29th, 1900. S. JOHNSON TAYLOR.

## THE CURATIVE TREATMENT OF MICROBIC DISEASE.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of Dec. 20th, 1890 (p. 1354), there appeared a letter of mine entitled "On Immunity from Infectious Disease." In this letter I proposed a method of treating infectious disease by (1) bleeding the patient in order to remove some of his vitiated blood and (2) replacing this blood by healthy blood obtained from an individual who had recovered from the same disease as the patient was suffering from. This method, as far as I am aware, has not been tried on the human subject. It has, however, been tried in Cape Colony on cattle suffering from rinderpest some two years ago and with great success. The treatment to be successful depends on a very thorough bleeding of the sick animal, in a full-grown ox to the extent of several (five or six) litres; on the other hand, the inoculating dose of defibrinated blood or serum from a recovered animal need not exceed from 20 to 30 cubic centimetres in the case of a "fortified" animal, or 100 cubic centimetres if the animal be not fortified. I think the method may be now tried on the human subject in pneumonia and other acute fevers where in the olden days bleeding was usually resorted to, with this addition, that immediately after the bleeding a dose of curative serum (anti-pneumonic, &c.) should be given, and to avoid all risks subcutaneously, instead of the method I proposed in my letter—viz., by transfusion. Perhaps in a case of typhus or typhoid fever, where the blood-giver is the human subject, direct transfusion of the "recovered" blood may be the safest procedure.

I am, Sirs, yours faithfully,

GEORGE CARRINGTON PURVIS, M.D., B.Sc. Edin.

Grahamstown, Cape Colony, July 7th, 1900.

## "RUPTURE OF THE APPARENTLY HEALTHY ŒSOPHAGUS."

*To the Editors of* THE LANCET.

SIRS,—Dr. E. J. McWeeney's interesting paper on the above subject, published in THE LANCET of July 21st (p. 158), does not mention a table of 18 such cases which was appended to a paper by Dr. R. L. Bowles and myself sent in November, 1899, and read on March 27th of this year before the Royal Medical and Chirurgical Society and now published in its Transactions, p. 241. On analysing his table of 17 cases I find that Dr. McWeeney rejects two cases of Mr. Stanley Boyd's which we accepted. He tabulates one case rejected by Fitz which we did not include, but which perhaps it seems reasonable to accept. He does not include, as we did, Oppolzer's case, but mentions it with those of Williams, Bailey, and Heyfelder "as almost certainly belonging to this category." Two cases are in his tables in which an "ulcer" is described and are not included in our table. He does not mention three cases of Dr. S. West, of Dr. C. J. B. Williams, and of Guersent which are in our table. He adds cases by Harrison and Wolf

and three (published since the compilation of our table) by himself, Heintze, and Lorrain Smith. Taking the 18 cases in our table and those added by him, five in all, and putting in those accepted by him but rejected by us (in two of these the word "ulcer" has led to confusion), the total number of all cases would seem to be about 25, a number sufficient to show, as Dr. Bowles and I contended in our paper, that this injury is not so rare as is commonly thought to be the case.

I am, Sirs, yours faithfully,

Half Moon-street, W., July 30th, 1900. G. R. TURNER.

## "PADDLING IN THE SEA."

*To the Editors of* THE LANCET.

SIRS,—The letter of Mr. William Knight Treves on the above topic in THE LANCET of July 21st states that "for some reason or other paddling is very generally condemned by the medical profession." Presuming that Mr. Treves has good grounds for making such a statement—and I confess that I was not aware of such a prejudice—I cannot understand on what grounds paddling can be considered objectionable. The extensive sands of the Dee estuary are greatly resorted to by children of all ages for the express purpose of bathing and paddling, but principally for the latter delightful enjoyment. We have here, too, one of the largest preparatory boys' schools in England, the pupils of which school constantly go long paddles. I have therefore much pleasure in adding my testimony to that of Mr. Treves that paddling is not only delightful but beneficial to all children through the summer weather. My wish to help Mr. Treves in doing a "good turn to the children" is based not only on the experience gained as a medical man but also as a parent. It is usually the bad eating habits of children, not paddling, that "sends the blood to the head," whatever that picturesque phrase may mean. I am, Sirs, yours faithfully,

H. M. SPEECHLY.

Parkgate on the Cheshire Dee, July 20th, 1900.

## MEDICAL SERVICE IN THE HIGHLANDS AND ISLANDS OF SCOTLAND.

*To the Editors of* THE LANCET.

SIRS,—Herewith I enclose copy of reply received by me last night from the Local Government Board in reference to the memorial from medical officers of the more remote parishes of the Highlands and islands which was recently presented to the Board. You will see by it that the Board favour the proposal but have not the power to insist upon the parish councils granting the privilege. While I have no doubt that some parish councils would grant their medical officers a paid substitute, yet I fear we shall have to wait for an alteration of the Local Government (Scotland) Act before we can hope to see the reform general.

I trust you will kindly publish the reply, and am, Sirs,

Yours faithfully,

JAS F. D. MACARA,

Durness, Lairg, Sutherlandshire, July 27th, 1900. Medical Officer, Durness.

[COPY.]

Local Government Board, Edinburgh, July 25th, 1900.

SIR,—With reference to your letter dated 27th ultimo enclosing a memorial by the medical officers of the more remote parishes of the Highlands and islands of Scotland as to the difficulty experienced by them in obtaining an annual holiday, I am to say that this matter has received careful consideration from the Board. In reply I am to say that the Board desire to express their sympathy with the views expressed in the memorial, and having regard to the very special circumstances and conditions under which the duties of the memorialists have to be discharged are of opinion that it would be to the advantage of the public service that parish councils should grant an adequate holiday to their medical officers, defraying at the same time the cost of a substitute to act for the doctor during his absence. But, as the Board have often had occasion to point out, their powers in regard to the relation subsisting between parish councils and their medical officers are very limited, being derived solely through the medium of the grant in aid of medical relief to the conditions in connexion with the distribution of which parish councils are required to conform in order to participate. I am to add that the rules of the grant have been held to be stereotyped by the Local Government (Scotland) Act of 1889, so that, as will be seen, additional legislation would be necessary to give general effect to the views of the medical officers. The Board, however, direct me to say that they are prepared to do the best within their power—that is, they will offer no objection to the cost of substitute medical officers being ranked against the medical relief grant in the more remote parishes of the Highlands and islands of Scotland, provided that the local circumstances are such as are described in the memorial and provided care be taken that the parish council shall pay only for the services rendered by the substitute to the paupers and not for his services to the medical officers' private patients. The Board have forwarded a copy of this letter to Lord Lister.

I am, Sir, your obedient servant,

G. FALCONAR-STEWART, Secretary.

Dr. Macara, Durness, Lairg.

## THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE.

*To the Editors of* THE LANCET.

SIRS,—In consequence of the appearance of an article in the *Times* of to-day we, the members of the honorary medical and surgical staff of the National Hospital for the Paralysed and Epileptic, Queen-square, now desire to address you on the crisis in the affairs of our hospital which has been brought about by the acts of the board of management during a number of years.

The relations between the medical staff and the board of management have shown increasing signs of strain for several years past, in proportion as the board has more and more relegated its functions and authority to the hands of a paid official, Mr. Burford Rawlings, who, from the position which he originally occupied as secretary, has been advanced to the dignity of "secretary and general director." Those practically acquainted with hospital affairs will scarcely need to be told that the effect of such an appointment is that although the management of the hospital may be nominally directed by a board the institution is practically, to a great and dangerous extent, in the hands of one man. That the autocracy of the office referred to should be as complete as possible it is enacted in the rules of the hospital that no member of the medical staff shall be allowed to have a seat on the board. The "secretary and general director" is thus relieved of any inconvenience which might possibly be occasioned by the presence on the board of persons professionally acquainted with the work and necessities of a medical institution and able to supply essential information and counsel.

It is not surprising, therefore, that for a number of years the medical staff have found that the administration of the hospital was becoming more and more unsatisfactory. Ten years ago, with the view of remedying this state of things, the medical staff suggested to the board of management that two of the medical officers should be annually elected members of the board (12 members) as their representatives. This was refused and various substitutes were proposed by the board which have proved failures owing to acts of the board. The first of these substitute arrangements was summarily terminated in 1893 by a decision of the board of management, no reason being assigned. The last of these arrangements came to an end in 1899 in consequence of a breach of faith on the part of the board of management. Since then the medical staff have renewed their claim for direct representation, which the board have persistently refused, and as a result a state of acute dissension between the two bodies has existed since the early part of last year. In July, 1899, the chairman of the Distribution Committee of the Hospital Sunday Fund warned the secretary and general director that unless the want of harmony ceased the customary grant would not be renewed in the following (this) year, at the same time expressing the opinion that the medical staff should be directly represented on the board of management. He also instructed the secretary director to communicate these observations of the committee to the board of management. We must here observe that the secretary director, Mr. Burford Rawlings, in reporting to his board did not communicate the whole of the instructions he had received from the chairman of the Sunday Fund Committee, but informed them that the chairman (Sir Sydney Waterlow) had "confined his observations to an expression of regret that perfect harmony did not exist between the board and the staff and the expression of the hope that this state of things would have passed away before next year."

Between the meeting of the Sunday Fund Committee last year and that held on July 19th the medical staff, after further fruitless negotiations with the board of management, determined to inform the governors of the hospital not only

of the defects of its constitution but also of certain administrative evils which had resulted therefrom. To this end the medical staff issued to those governors whose names and addresses could be discovered by them a statement and report of the condition of the affairs of the hospital. This report we enclose together with other documents. It should be noted that an application by the medical staff for a copy of the official list of the names and addresses of the governors was refused by the board of management. The next step was the appointment by the board of a sub-committee consisting of three of their own members to investigate the grave defects to which their attention had been called and for which they were responsible. The medical staff naturally at once repudiated such an unsatisfactory inquiry and urged upon the governors that any committee of investigation should be an independent one and not appointed by the body whose acts were called in question.

The final stage of this dispute was reached at the recent meeting of the Distribution Committee of the Hospital Sunday Fund. The Sunday Fund Committee, bearing in mind their instructions to the board of management of last year, issued this year a request to the board and medical staff respectively to send representatives to their meeting on July 19th.

After hearing both sides the Distribution Committee of the Hospital Sunday Fund adopted the following resolution for submission to their council:—

> In consequence of the serious dissensions between the staff and the board of management at the National Hospital for the Paralysed and Epileptic, Queen-square, your committee held a conference at which both were fully represented. After a long discussion it was decided that no award could be recommended until the existing differences had been satisfactorily arranged.

In conclusion, we desire only to reaffirm our view that the affairs of the hospital need a searching inquiry and its constitution thorough reform. We are unanimous in our resolve to put an end to the evils of the present system of administration. We are, Sirs, yours obediently,

J. HUGHLINGS JACKSON, M.D. St. And., F.R.C.P. Lond., F.R.S.,
THOMAS BUZZARD, M.D., F.R.C.P. Lond.,
Consulting Physicians to the Hospital.
R. BRUDENELL CARTER, F.R.C.S. Eng.,
Consulting Ophthalmic Surgeon
H. CHARLTON BASTIAN, M.D., F.R.C.P. Lond., F.R.S.,
W. R. GOWERS, M.D., F.R.C.P. Lond., F.R.S.,
DAVID FERRIER, M.D. Edin., F.R.C.P. Lond., F.R.S.,
J. A. ORMEROD, M.D. Oxon, F.R.C.P. Lond.,
Physicians to In-patients.
CHARLES E. BEEVOR, M.D., F.R.C.P. Lond.,
HOWARD H. TOOTH, M.D., F.R.C.P. Lond.,
JAMES TAYLOR, M.D. Edin., F.R.C.P. Lond.,
J. S. RISIEN RUSSELL, M.D Edin., F.R.C.P. Lond.,
Physicians to Out-patients.
W. ALDREN TURNER, M.D. Edin., F.R.C.P. Lond.,
FREDERICK E. BATTEN, M.D. Cantab., M.R.C.P. Lond.,
Assistant Physicians.
FELIX SEMON, M.D. Berlin, F.R.C.P. Lond.,
Physician for Diseases of the Throat.
VICTOR HORSLEY, F.R.C.S. Eng., F.R.S.,
CHARLES A. BALLANCE, F.R.C.S. Eng.,
Surgeons.
R. MARCUS GUNN, F.R.C.S. Eng.,
Ophthalmic Surgeon.
A. E. CUMBERBATCH, F.R.C.S. Eng.,
Aural Surgeon.

(The names of absent members have been added by authority.)

July 27th, 1900.

## "THE APPOINTMENT OF SPECIAL MEDICAL OFFICERS FOR THE CERTIFICATION OF LUNATICS."

*To the Editors of* THE LANCET.

SIRS,—What Mr. Polhill Turner proposes in THE LANCET of July 28th is identical with what I proposed in a short pamphlet entitled "Proposals for the Amendment of the Laws relating to Lunatics and Habitual Drunkards," published in 1885. Many, if not all, of the anomalies now connected with the process of certification of lunatics would be obviated by the adoption of some such plan, and much benefit will accrue, not only to the public, but to the profession, if such a plan were to receive your powerful advocacy. Only those whose fate it is to have to do with lunacy certificates, both in their inception and in their completion, know how gladly a simplification of the process such as that proposed would be welcomed.

I am, Sirs, yours faithfully,

Hendon, July 31st, 1900. W. H. KESTEVEN.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*University College, Liverpool: The Work of the Medical Faculty.*

THE medical faculty, which may be regarded as the foundation-stone of University College, continues to flourish. Professor A. M. Paterson, the Dean of the Faculty, in his recently-issued report for the past year remarked on steady progress in all departments. The number of students attending classes during the winter session of 1899-1900 (excluding those taking out hospital practice) was 194. In 1897-98 and 1898-99 the numbers were 169 and 188 respectively. There were 85 new entries, including 60 medical, 13 dental, and 12 entering for special courses. In the previous winter session there were 88 new entries—54 medical, 19 dental, and 15 for special courses. During the present summer session the total numbers have been 163, including 10 new entries and 16 for special courses. Last summer the total reached 144, including 12 new entries and five for special courses. These figures represent the largest numbers in the history of the medical school. The increase was mainly due to students taking special courses or parts of their medical curriculum. Professor Paterson elaborates the subject of buildings. Last year the plans of the new building were devised and passed. The scheme was divided for building purposes into three sections, which was necessitated through lack of funds. The first section, comprising an anatomical museum and dissecting-room, is now being erected. The second section will include, in addition to the main staircase, the laboratories for surgery and the lecture theatres. The third section, which will complete the block, will contain laboratories and smaller rooms necessary for teaching, investigation, and administration in the several departments of the school. Professor Paterson regrets that the surgical section of the building has not already been begun, as the completion of the old block would be expedited by the erection of that section. The estimated cost of the three sections is £30,000, towards which promises of £14 000 have been received. As each section of the building is estimated to cost about £10,000, a start will be made with the second section when the requisite sum of £6000 has been guaranteed.

*Woolton Convalescent Institution.*

The twenty-sixth annual meeting of the Woolton Convalescent Institution was held on July 21st. The institution is largely self-supporting; payments made on behalf of patients amounted last year to £1729 4*s.*, whilst the total receipts realised £4701 5*s.* 4*d.* Subscriptions amounted to £944 8*s.* 6*d.* The Hospital Sunday Fund contributed £315, the proceeds of the city ball amounted to £159 0*s.* 8*d.*, and during the year donations had been received amounting to £415 4*s.* The number of patients received into the institution was 2661, which was six short of the previous year, but showed 25 per cent. above the average for the past 10 years. The accounts showed an increase in the debit balance from £63 to £354, which was due to necessary alterations in the institution. The number of special subscriptions had increased and Mr. T. S. Timmis had endowed a free bed, bringing the number of free beds up to 20. The popularity of the institution is evidenced by the fact of the number of applicants for admission. In the year 1878 the number of patients was 638 and the annual subscriptions were £110, as compared with 2661 patients and £944 recorded for the past year. The grounds of the institution have been considerably improved at an expense of £1206, and the committee have spared no effort to make the institution comfortable and attractive. The Council in their report referred with great regret to the death of Sir Henry Tate, Bart., who had closely connected himself with the institution for many years, having been the honorary treasurer

in its early days and a liberal donor to its funds. A number of seats for the grounds were presented by the Lord Mayor, Sir William Tate, Bart., and Mr. S. S. Bacon. Complimentary references to the benefits of the institution were made by the Lord Mayor, Monsignor Nugent, Sir Henry Tate, and others.

*Hospital Saturday and Sunday Funds: Distribution of Grants to the Charities.*

The joint committees of the Hospital Sunday and Hospital Saturday Funds distributed the following amounts among the local charities:—Royal Infirmary, £2860; Royal Southern Hospital, £1950; Northern Hospital, £1690; Stanley Hospital, £910; Liverpool dispensaries, £780; Queen Victoria District Nursing Association, £780; Infirmary for Children, £780; Eye and Ear Infirmary, £520; Consumption Hospital, £455. A sum of £2080 was also distributed among minor charities, making a grand total of £12,805.

July 31st.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

*Death of James Rodger, M.A., M.D. Aberd., of Aberdeen.*

LAST week Aberdeen lost one of its best known medical practitioners, Dr. James Roger. The deceased was born in 1841 in Aberdeen, where his father owned the Gilcomston tanworks in Rodger's-walk. Dr. Rodger had a distinguished university career. In 1865 he graduated M.B., C.M., both with highest honours; and from 1865 to 1867 and from 1868 to 1871 he was demonstrator of anatomy at Aberdeen University under the late Professor Sir John Struthers. During the interval (in 1867 and 1868) he studied at Paris, Berlin, and Vienna. He volunteered his professional services during the Franco-Prussian war, in recognition of which (including the organisation of the Saarbrucken hospital) he received from William I. of Germany the war medal for non-combatants, and on his return to Scotland in 1871 he was awarded a money gratuity by the International Society for Aid to the Sick and Wounded in War. He was physician to Aberdeen General Dispensary from 1870 to 1876, and from 1869 for about 17 years he was pathologist to Aberdeen Royal Infirmary, of which he was, further, assistant physician from 1886 to 1897, being thereafter honorary physician. In 1874 he was appointed one of the examiners in anatomy, pathology, and medicine at Aberdeen University. He also held various other public appointments in his native city, such as physician to Robert Gordon's College; secretary, treasurer, and president in succession of the Aberdeen Medico-Chirurgical Society; and surgeon-lieutenant-colonel of the 1st Aberdeen Volunteer Artillery. He had a large private practice, consultant and otherwise, and though somewhat abrupt in manner, his geniality, general cleverness, and professional ability were widely recognised. Dr. Rodger married a daughter of the late John Hill Burton, historiographer royal for Scotland, author of "The Scot Abroad," "The Book Hunter," &c.; and one of the last acts of his life was to offer as gifts to Marischal College, Aberdeen Free Library, Aberdeen Art Gallery, &c., replicas of a noted bronze bust of his father-in-law.

July 31st.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Water Supply.*

LITTLE is being done among the learned societies of Paris just now, for all the active members are reserving their most interesting communications for the great International Congress of Medicine which is on the point of being opened and which absorbs everything. The Academy of Medicine is the only one where there has been an important discussion, and in this case the subject considered was one of general interest at the present time, being no other than the state of the Paris water-supply, which attracts attention regularly every year during the hot weather. The temperature has now become milder, but it was exceptionally high during the last fortnight, on one of the days of which there was the highest temperature of the century in Paris. The consumption of water naturally increased at once and even commenced to exceed the anticipations of the engineers, who announced last spring that precautions had been taken and that in consequence of the opening up of new sources of supply and the construction of new filtering beds the Parisians would never again be in want of water, even with the most extravagant waste and with the increase of the population during the Exhibition. The quantity provided for each inhabitant of Paris is, in fact, 230 cubic metres (50,620 gallons). Nevertheless, it soon became insufficient, as had to be admitted by the water company itself, which promptly posted up throughout Paris the notices with which it favours the public every year, warning Parisians to limit their consumption in order to prevent an early failure of the supply. It is undeniable that owing to the hot weather there is an excessive consumption of water. For the purpose of saving a penny-worth of ice, people do not hesitate to let the water run for hours in order that it may be cool for drinking. The first water which comes after the turning of the tap is in fact quite hot, because the service pipes are generally outside the houses and are heated all day by the sun. Ineffectual attempts have been made to compel the use of water taps which remain open only so long as a hand is on them. Small metal nuts with an internal screw are sold which enable the taps to be kept always open. But from what has just been said it will be seen that with the usual rate of flow from a tap even if it was open all day long only a small portion of the allowance of each inhabitant would pass through it. It is the water company itself which is the real offender. If the spring water were reserved solely for human consumption the quantity supplied would be ten times more than the population required, but in actual fact the water company uses this spring water for all purposes, for lifts, street-watering, &c., in all the high-lying districts where the Seine water cannot be supplied under sufficient pressure by means of the company's pumping machinery. The remedy would be to use more powerful pumps and to fit up all the houses with a double set of service pipes, one for spring water and one for Seine water, but the company prefers not to incur the expense which would fall upon it alone. By its agreement with the city of Paris the water company is not required to provide pipes, mains, or machinery, the water being supplied to the company free of charge by the city, which undertakes the collecting of it and the construction of the means of conveyance. It is easy to understand that from motives of economy the company prefers to make general use of spring water which is delivered naturally at a sufficient pressure, rather than to erect costly machinery for raising Seine water to the requisite height and to provide a separate service for it in each house. This is the real difficulty of the question. At last the Academy of Medicine has intervened. The company having stopped the supply of water during the night in order to allow the reservoirs to become full everybody complained, especially the fire brigade—the latter on the ground that fires generally broke out at night and that the pressure of the water was insufficient for the fire engines. M. Laveran and M. Henriot opened a discussion in the Academy on this subject, and proposed the following motion which was passed unanimously:—

The Academy of Medicine feels itself compelled to call the attention of the public authorities to the state of the Paris water-supply which is at the present time quite inadequate. The Seine water not being at sufficient pressure is in certain localities replaced by spring water being used for washing purposes. If there was a proper supply of Seine water there would be no deficiency of spring water for human consumption.

The Academy also passed the following motion:—

A double service for spring water and for Seine water ought to be established everywhere, so that they may be kept quite separate from one another.

*The Prohibition of Spitting.*

Some days ago announcements to the following effect, printed on small white bills (the official colour), were to be seen on the walls of the public buildings everywhere in Paris:—

NOTICE.—In the interests of public health and with the view of checking the spread of tuberculosis persons are requested not to spit on the ground ("*par terre*").

This was the result of a resolution of the municipal council and of a discussion on a report presented by M. Fortin last March. As might be expected some journals complained, saying that spitting in omnibuses, tramcars, and railway carriages had been already prohibited, and asking where people might spit if they must not spit on the ground. The

object of the notice, however, was only to discourage spitting on the pavement ("*sur les trottoirs*") and not in the roadway.

July 31st.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

*Diseases of the Philippines.*

AN interesting paper was read recently before the Southern Idaho Medical Association by Dr. W. D. Springer of Boise in that State, who served as surgeon of the Idaho Regiment in the Philippines. He said that among the troops malaria, small-pox, typhoid fever, dysentery, tropical diarrhœa, intestinal parasites, and skin diseases were the most common maladies. Typhoid fever prevailed on an extensive scale, but amœbic dysentery was the most frequent and fatal disease. A complaint known as "Manila itch," "Dhobie itch," or "Filipino itch" was the most common of the skin affections. This is of parasitic origin and peculiar to the tropics. It spreads very rapidly during the hot, damp season. It attacks first the perineal region and the axilla. After the acute stage is over and the inflammation is somewhat subsided scales rub off and the inflammation gets down about the feet, where it spreads. The burning and itching are much worse at night, and cause much suffering. The patient unconsciously scratches the part affected, and this in many cases causes boils. The regions occupied by the disease always remain pigmented. This trouble was almost universal among the troops. Small-pox, Dr. Springer stated, prevailed all the year in Luzon and the troops suffered severely from it. The report of the Surgeon-General attributed over 200 deaths to this cause. Dr. Springer, however, drew attention to the fact that where vaccination was carefully practised and reliable lymph was used small-pox was absent, and he was of opinion that both its prevalence and its mortality were owing to the carelessness shown in performing the operation and the inferior quality of the vaccine lymph.

*Public Baths in the State of New York.*

There has been some difference of opinion recently as to who is entitled to the chief credit for the establishment of free public baths in the State of New York. This honour has been claimed in several journals by the Hon. Goodwin Brown. The *Medical Record*, however, took up the cudgels for Dr. Simon Baruch and proved fairly conclusively that this good work was first commenced on his suggestion. The *New York Herald* of October 25th, 1891, referring to the opening of some baths built by funds supplied by Baron Hirsch, says, "These rain baths are something entirely new for this country. Attention was first called to this system of baths in this country by Dr. Simon Baruch. Dr. Baruch spent six months in Europe studying the baths of all foreign nations. On his return he brought the subject before the Academy of Medicine and headed the rapidly-growing movement for public baths." The report of the committee on public baths appointed by the Mayor of New York, transmitted to the Legislature on March 25th, 1897, was that out of 480 houses visited only 17 had baths and only three houses of each 100 had bath-rooms and that there were only three public baths in the city of New York. The Bill, which became law in 1895 and for which the Hon. Goodwin Brown was mainly responsible, reads as follows: "All cities of the first and second class shall establish and maintain such number of free public baths as the local board of health may deem to be necessary." This is the first general legislation on the subject ever enacted in the United States and the first bath erected under its provisions was opened in Buffalo in January, 1897. It has a capacity of 1000 baths daily and cost $8000 (£1600). In Rochester a bath has been erected to all intents and purposes on similar lines to that of Buffalo at a cost of $5000 (£1000). In Albany the money has been appropriated, and plans prepared, for a bath in that town the cost of which will be $22 000 (£4400). In Greater New York the first public bath is nearing completion and is likely to be opened in the course of a month or so. It is situated on the water front in a crowded part of the city, and will cost $100 000 (£20,000). It will have a capacity of 3000 baths per day—one-third each for women, men, and boys. The United States is very many years behind most European countries so far as free public baths are concerned. The following cities contain public baths:—Boston, Chicago, Yonkers, New York, Brookline (Mass.), Providence, Philadelphia, Worcester, Buffalo, and Rochester. In a country, therefore, which contains upwards of 80,000,000 people, there are only about a dozen cities that provide bathing facilities. The health authorities seem to be becoming impressed with this lack and probably in the course of a few years the United States will be as well equipped with public baths as are countries on the other side of the Atlantic.

*The Disinfection of New York.*

An anti-germ crusade has recently been carried on by the active Board of Health in this city. An appropriation of $20,000 (£4000) was recently made to the Board of Health for the purpose of cleansing the unsavoury districts of New York. Probably the occurrences in the Chinese quarter of San Francisco impelled the authorities of New York to set their house in order and to run no risk of the plague or any other infectious disease gaining a foothold there. At any rate, be the cause of the action what it may, the proceeding can have none but good effects, and the activity of the New York Board of Health is a useful object-lesson to such bodies everywhere. The sanitary condition of New York, as proved by its vital statistics, has improved to a wonderful degree within the past few years. For this the chief credit is due to the Board of Health.

July 14th.

# Obituary.

## JOHN STUART STEVENSON, M.R.C.S. ENG., L.R.C.P. LOND.,

CAPTAIN, INDIAN MEDICAL SERVICE.

In THE LANCET of July 28th we announced the sudden death of Captain J. S. Stevenson of the Indian Medical Service. A further telegraphic message has now conveyed the news that this promising young officer fell a victim to heat apoplexy at Lucknow on Friday, July 20th.

John Stuart Stevenson was born at Benares on August 24th, 1872, where his father was stationed as the medical officer of a battery of Royal Artillery. He was educated at St. George's College, Croydon, matriculated at the London University, was entered as a student at St. Bartholomew's Hospital, and became a Member of the Royal College of Surgeons of England and a Licentiate of the Royal College of Physicians of London in 1895. In the spring of 1896 he took the fifth place among 17 selected candidates for the Indian Medical Service, and passing through the Army Medical School in the summer session of that year was duly gazetted as a Surgeon-Lieutenant on July 29th. Within three months of his arrival in India he was appointed to do duty on the railway as an examiner to prevent the spread of the plague in the north of India. Few men of his years had such opportunities of studying this disease, for he was subsequently sent to Bangalore on plague duty, and last year he was sent to Mauritius as "special plague officer," a position which he occupied with great credit for about a year. While at Mauritius he volunteered for active service in South Africa, but his services could not be spared. When the plague was stamped out in Mauritius and he returned to India he was appointed to the important post of deputy-sanitary-commissioner of the North-West Provinces—a post which he had held for a brief period when he so suddenly passed away. Captain Stevenson was a general favourite in society and won considerable reputation while in the Mauritius for the careful way in which he carried out the very important charge committed to him. He served on the North-West Frontier of India in 1897–98, when he was with the Tirah force and in the operations in the Mamund country, for which services he received the medal and clasp. He was duly promoted to be a captain on July 29th, 1899, and was considered to be one of the most rising young officers of the service. He was the only son of Surgeon-General W. F. Stevenson, now with Lord Roberts in the Transvaal, who at the opening of the war was taken from his appointment of professor of surgery in the Army Medical School, Netley, and sent out to South Africa as principal medical officer on the line of communications in Cape Colony and consulting surgeon to the forces. To him who in the midst of an arduous campaign has now to face this great sorrow and to the other members of the family we offer our heartfelt sympathy.

# THE BRITISH MEDICAL ASSOCIATION.

## MEETING AT IPSWICH.

THE sixty-eighth meeting of the British Medical Association was opened at Ipswich on Tuesday, July 31st, under the presidency of Dr. William Alfred Elliston, senior surgeon to the East Suffolk and Ipswich Hospital. This is the first occasion upon which the Association has met at Ipswich.

Ipswich, although it cannot lay claim to the ancient history and natural beauties of Edinburgh or to the naval and military importance of Portsmouth, has nevertheless peculiar interests of its own. It will always be remembered as being the birth-place of Cardinal Wolsey, of whose connexion with his native town a sad memorial remains in the crumbling Wolsey Gateway—all that is left of the demolished college with which Wolsey intended to endow Ipswich. Less fortunate than its founder's other great educational establishment at Oxford, it fell into the same rapacious hands which so nearly destroyed St. Bartholomew's Hospital.

The streets of Ipswich are narrow, yet they are singularly clean and well kept, while there still remain many beautiful examples of old domestic architecture. Perhaps the most notable is the "Ancient House," dating from 1567, though the ornamentation, we should fancy, was somewhat later, as it is distinctly Jacobean in style. Another striking building is the Neptune Inn. Christchurch Mansion, a fine old Elizabethan house, together with its park, now belongs to the town.

The systems of water-supply and drainage of Ipswich are worthy of note. The water is derived from chalk at some considerable depth and hence in quality is similar to that of the Kent Company's wells. At present there is practically little adopted in the way of actual purification of the sewage. What is done is that the sewage is screened at the outfall and after some attempt at precipitation is allowed to flow into the river Orwell without further treatment. The district, of course, is very flat and somewhat unfavourable to satisfactory sewage disposal. Indeed, the Stoke and Marsh districts are too low for connexion with the main drainage system which depends upon gravitation. Consequently recourse is had to the Shone pneumatic system which is applied in conjunction with the Hermite process of treating sewage with electrolysed salt water. The salt water of the estuary of the Orwell affords an abundant supply of material for this purpose. The streets of the town appear to be well kept and the reproach of being "smelly" which was at one time levelled against Ipswich and its thoroughfares has been removed.

Dr. William Alfred Elliston, the President-Elect, gave a dinner on Monday evening, July 30th, to the members of Council, the presidents of sections, and others. The following were among the guests: the Lord Bishop of Norwich, the Lord Lieutenant of Suffolk, the High Sheriff of Suffolk, the Mayor of Ipswich, Dr. Dawson Williams (the Editor of the *British Medical Journal*), and Dr. H. P. Cholmeley (representing THE LANCET). There were only two toasts, that of "Her Majesty the Queen" and that of "The Colonial Members." To the latter Professor T. G. Roddick of Montreal, whose name had been coupled with the toast, replied. On the afternoon of the same day Mrs. Elliston received, at Stoke Hall, the members of the Local Committees and such members of the Association as had arrived in Ipswich.

The space devoted to the Annual Museum was somewhat scattered, though this fact afforded an excellent opportunity of dividing the exhibits into distinct classes. What is known as the Public Hall in Westgate-street was set apart for the display of food and food products, drugs and mineral waters, while the old museum rooms close by were devoted to the exhibition of surgical instruments, hospital appliances, aseptic furniture, &c. The Public Hall admitted of a more artistic arrangement of the exhibitors' stalls than was possible in the Drill Hall at Portsmouth last year or at Edinburgh in the previous year. The exhibitors, indeed, must have found it a welcome change to have been able to place their exhibits in a structure having no glass roof with the hot sun's rays playing upon it and possessing some pretence at design instead of that rectangular precision of the average drill hall, which has been provided on previous occasions.

From the point of view of structure the Public Hall in Westgate-street may be regarded as resembling the Queen's Hall in London, having a gallery and orchestra-platform. At intervals a selection of music was provided. Despite the ample space afforded the Exhibition was decidedly on a small scale when compared with those of previous years. One very notable and commendable advance in the direction of accommodation was the provision of seats between the rows for the visitors and a smoking lounge. The stalls were on the whole tastefully arranged and were practically ready for inspection on Tuesday, though the attendance on that day was somewhat meagre. We may repeat what we said on the occasion of last year's meeting that the Organising Committee might make this feature of the annual meeting more attractive and interesting to the members by including amongst the exhibits a selection of a really scientific and instructive character. At present it may be said that demonstrations of the x rays are the only things laying claim to this description.

In another column will be found the first contribution of a special account of the exhibits at the annual museum, for which purpose the order of treatment adopted in previous years will be retained as being on the whole the most convenient. This is as follows:—1. Drugs. 2. Foods and food products. 3. Sanitary appliances, disinfectants, &c. 4. Surgical instruments and appliances. 5. Mineral waters and beverages. 6. Publications. 7. Miscellaneous.

St. Mary-le-Tower was appointed as the church for the opening service, and at 11 A.M. on Tuesday the edifice was filled with a congregation composed of the members of the Association and their friends, amongst whom were a great number of ladies. The order of service was appropriate to the occasion and the Lord Bishop of Norwich, the Right Rev. John Sheepshanks, delivered a somewhat long discourse, in which the peroration was the most impressive feature. The text was the oft used one from the uncanonical book of Ecclesiasticus (chap. xxxviii. verses 13 *et seq.*):

> "Honour the physician with the honour due unto him, for the use ye may have of him, for the Lord hath created him.
> For of the Most High cometh healing, and he shall receive honour of the king.
> The skill of the physician shall lift up his head, and in the sight of great men he shall be in admiration.
> The Lord hath created medicines out of the earth, and he that is wise shall not abhor them."

The musical service was admirably rendered as it was tastefully appointed. The offertory was, as on previous occasions, devoted to the British Medical Benevolent Fund and we learn that the proceeds amounted to 20 guineas.

The corporation of Ipswich was represented by the mayor, aldermen, and councillors who were present in state attended by the sword and mace bearers. The service formed a fitting and imposing prelude to the proceedings of the Association.

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On the afternoon of Tuesday, July 31st, Mr. D. Ford Goddard, M.P., gave a garden party to the members of the Association and their friends at Oak-hill. Many of the leading townspeople and local residents were invited to meet the Association, and in all about 500 were present. The weather was beautifully fine, music was provided by the Ipswich Town Band, and a most enjoyable afternoon was spent.

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In many ways the minds of all of us have been for nearly a year past exercised with affairs in South Africa. It therefore comes as a somewhat remarkable coincidence that a resolution which may have the most far-reaching effects upon the medical profession should have been carried at the second general meeting (held on August 1st), at the instance of a member from Cape Town—namely, Dr. C. F. K. Murray, President of the Cape Town Branch of the British Medical Association, who proposed the following motion:—

That this meeting resolves that the Council be requested to issue a circular to all branches of this Association inviting them to express an opinion and to submit proposals on the question of the "wage-limit" as applied to clubs, provident dispensaries, and societies, &c., with a view to suggesting a reasonable and fair working basis; furthermore, that it be an instruction to the Council to report and advise this Association thereon at its next annual meeting.

We have in these columns so frequently and so earnestly insisted upon the necessity of the wage-limit that it is a great pleasure to us to be able to record the passing of this resolution, and we congratulate both Dr. Murray and the Association upon the fact.

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Another most important decision arrived at at the same meeting was that agreeing to the appointment of a committee consisting of 24 members to consider and report upon the best means of re-organising the constitution of the Association, 12 members being nominated by the Council and 12 by the general meeting—the whole 24 members being eventually elected by the members assembled in general meeting. It was understood that the Council would submit the names of their nominees on the following day (Thursday) at the general meeting and that the full committee would likewise be settled on the same day.

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As it is proposed that the committee should report to the branches by Feb. 1st next, in order to present a complete scheme of re-organisation to the annual meeting at Cheltenham, there can be no question that much has to be accomplished in the small time at the disposal of the committee, and there can be few who are sanguine enough to expect the committee to attain its object and present a workable scheme within the period suggested. True, there is the now abandoned scheme of constitution presented by the Council to, and rejected by, the Exeter Hall meeting which should at least form a very substantial nucleus; but every well-wisher of the Association, and none more heartily than ourselves, must fervently hope that no attempt will be made to pass a hurriedly prepared scheme which may in the end not attain the desired result.

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At the invitation of the Gloucester Branch it has been decided to hold the next annual meeting of the Association at Cheltenham, and Dr. G. B. Ferguson has been appointed President-elect.

## THE GENERAL MEETINGS.

### THE FIRST GENERAL MEETING.

The first general meeting of the Association was held in the Central Hall of the Higher Grade School at 3 P.M. on Tuesday, July 31st, the Council being well represented on the platform, and some 150 members of the Association being present in the body of the hall.

Mr. WARD COUSINS, the retiring President, took the chair, and moved that the minutes of the last annual meeting be confirmed, which was agreed to.

The CHAIRMAN said that his first duty was a very sad one. Everyone present had no doubt heard of the very sudden death of the Duke of Saxe-Coburg Gotha, better known to us as the Duke of Edinburgh. He was sure that everyone present would sincerely join with him in the vote of sympathy which he was about to propose. The vote was couched in the following terms:—

That this meeting of the members of the British Medical Association, assembled at Ipswich, desire to express their deep sympathy with Her Most Gracious Majesty the Queen, H.R.H. the Duchess of Edinburgh, and all the members of the Royal Family at the sad and sudden death of H.R.H. the Duke of Edinburgh and Saxe-Coburg.

Mr. Ward Cousins then vacated the chair in favour of Dr. William Alfred Elliston, Senior Surgeon to the East Suffolk and Ipswich Hospital and President for 1900–1901.

Dr. ELLISTON took the chair amidst applause, and moved that His Royal Highness the Prince of Wales, K.G., Hon. F.R.C.P., Hon. F.R.C.S., be elected an honorary member of the Association. He said that His Royal Highness had kindly intimated that he would be pleased to become an honorary member.

Professor RODDICK of Montreal seconded the motion, and expressed the hope that at some future meeting the Prince would honour them with his company.

The motion was carried unanimously.

Sir WALTER FOSTER, M.P., moved a vote of thanks to the retiring President, Mr. Ward Cousins, for so ably presiding over the Association during the past 12 months, which was seconded by Dr. C. HOLMAN and agreed to unanimously and suitably acknowledged by Mr. WARD COUSINS.

The President of the Council, Dr. JOHN ROBERTS THOMSON, then moved that the annual report and statement of accounts be adopted. He said that he knew that the moving of the adoption of the report was considered an opportunity for members to speak upon various points and, therefore, he would not detain the meeting with any remarks of his own.

Mr. ANDREW CLARK, the treasurer of the Association, seconded the motion in a few words.

The first member to rise to speak was Lieutenant-Colonel INCE, I.M.S., who expressed dissatisfaction with the action of the Council on certain points but congratulated the editor upon the Journal of the Association.

The report contained among other matters a paragraph about the Coventry Provident Dispensary wherein it was noted that

At the last annual meeting the Council was requested to ascertain whether any of the present medical officers of the Coventry Provident Dispensary were members of the Association and if so that they should be called upon to explain why they still continued to give their services to that institution. In their report these gentlemen claimed to have obtained several reforms in the last few years and hoped to obtain more, and that further, many of the statements made with regard to the institution were inaccurate.

The following motion was passed:—

Resolved: That the Council is glad that the medical officers of the Coventry Provident Dispensary are still endeavouring to get the rules altered and strongly recommends them to continue their efforts to obtain a wage limit as expressed in their letter of Oct. 8th.

In reference to the above Mr. G. BROWN considered that some stronger steps should be taken in the matter of the medical officers of the Coventry Dispensary, who should be called upon either to mend their ways or to cease being members of the Association.

Dr. R. SAUNDBY said that he could not see why the Coventry Dispensary should be specially singled out for r probation. He held no special brief for the Coventry Dispensary, and it was true that it had no wage-limit, but neither had the friendly societies any wage-limit. Gentlemen who held the posts of medical officers to friendly societies came down here and howled (uproar and loud cries of "Withdraw") at the Coventry Dispensary because it had no wage-limit, which was not fair. Dr. Saundby was

"Annals of Ipswich," by Nathaniel Bacon; and "Old much interrupted in the course of his remarks, and the Chairman appealed for order.

Dr. E. PHILLIPS of Coventry said that the Coventry Dispensary was condemned in 1892, when 25,000 persons belonged to it. The medical officers of the dispensary said that since 1892 they had been endeavouring to obtain reforms in the matter of the wage-limit, and apparently they were still endeavouring. The dispensary was condemned alike by THE LANCET and the *British Medical Journal*, and its advertisements were refused insertion by both these journals.

Dr. F. M. POPE of Leicester said that they must either let these medical officers alone or else expel them. There was no middle course. A motion for expulsion in a meeting like that, always raised the worst possible feelings. He was sure that they did not desire to do that. Even supposing a medical man started a practice at penny fees he did not believe the Association would be willing to expel him.

Mr. R. B. ANDERSON took up the subject of the Council's report on the question of the Midwives Bill. The terms of the report did not satisfy him. He therefore proposed a very lengthy rider to the section of the report in question, upon which a long, and in many ways irrelevant, discussion arose, the principal speakers being Dr. BRASSEY BRIERLEY, who harked back to the Coventry Dispensary question, Dr. J. HADDON, Dr. A. COX of Gateshead, who seconded the addition of Mr. Anderson's rider and said that THE LANCET *plébiscite* showed plainly that the feeling of the profession was against the Midwives Bill, and Mr. D. O'SULLIVAN. Finally Mr. VICTOR HORSLEY pointed out the danger of correcting one inaccuracy by another inaccuracy, and portions of Mr. Anderson's rider were undoubtedly inaccurate.

Mr. ANDERSON said that as the accuracy of his statement had been called in question he would withdraw his rider.

Amid cries of "Vote" the whole of the rider was eventually withdrawn.

Another paragraph in the report referred to the new Articles of Association in the following terms:—

> Certain difficulties and legal questions on the Articles of Association as adopted when the Association was first incorporated in 1874, which articles had been mainly drawn on the basis of the regulations of the unincorporated Association, having arisen, the Council consulted eminent counsel on the matter, and was advised to adopt amended regulations, as the Association had outgrown the old constitution. New regulations and articles were prepared by your Council and submitted to a special meeting of the Association held in London, on July 18th, but the resolution was not carried by the requisite majority.

A discursive conversation—it could not with justice be called a debate—arose over the last 10 words. Remarks were made for some two hours by Dr. LORIMER HART, Mr. R. B. ANDERSON, Dr. J. HADDON, Dr. BERNARD O'CONNOR, Dr. BRASSEY BRIERLEY, and others, in the course of which it was seriously proposed that the discussion on the report should be commenced *de novo* paragraph by paragraph. Finally, Mr. G. BROWN proposed that the sentence should simply run, "but the resolution was lost," which was carried.

Mr. VICTOR HORSLEY then said that he wished to draw attention to a leading article which had appeared in the *British Medical Journal* previously to the Exeter Hall extraordinary meeting. He contended that this article was not only an instance of *suppressio veri* but also of *suggestio falsi*. The article had intimated that discussion of the new articles which were desired to codify certain conditions would be allowed. At the meeting no discussion took place, while the new articles did not codify the machinery of the Association in the sense of amalgamating and simplifying its working, but changed the constitution of the Association. Mr. Horsley also complained that the report of the meeting presented to the members in the *British Medical Journal* was very incomplete. He therefore moved as an amendment that the following paragraph be omitted from that section of the report which spoke of the *Journal*:—

> The Council has every reason to believe that the *Journal* has proved increasingly useful to members. The publication of the proceedings of the last annual meeting and of its sections was commenced immediately after the conclusion of the meeting, and was completed before the end of November.

Dr. DAWSON WILLIAMS, who rose for the first time to address an annual meeting of the Association, regretted that his remarks were not to be on a more pleasant topic, and said that he took the entire responsibility for what appeared in the *Journal* and did not desire to shield himself behind the Council. He wished to be quite frank and would say that when the particular leading article to which Mr. Horsley had referred was written he himself had no idea that discussion would not be allowed. With regard to the observation in the same leading article to the effect that the design of the new articles was to codify, amalgamate, and make simple the articles a charge of *suggestio falsi* was made, Dr. Dawson Williams did not allow that that was an inaccurate statement of what the intentions of the new articles were. The intention was that the by-laws should be amalgamated with the articles; the intention was that the articles and by-laws should be codified; for if the articles were looked at it would be found that there were special resolutions amending articles, and the intention was to make certain additions. He was, however, inclined to admit that in the article referred to it was not sufficiently clearly stated what it was these additions were. As to the report of the meeting he could only print what was supplied to him. He considered it necessary that the report should appear in the *Journal* for the week in which the meeting took place and owing to the *Journal* going to press upon the day following the meeting a *verbatim* report was not practicable.

Mr. VICTOR HORSLEY eventually consented to withdraw his amendment on condition that his speech and the reply of Dr. Dawson Williams should be printed *verbatim* in the *British Medical Journal*. The report was then agreed to as amended, and the meeting adjourned.

## THE (ADJOURNED) FIRST GENERAL MEETING.

The adjourned meeting was held on Tuesday evening in the Lyceum Theatre at 8.30 for the delivery of Dr. Elliston's presidential address. The attendance was good and amongst those present were the Mayor of Ipswich, Sir Charles Dalrymple, M.P., Mr. Alderman C. H. Cowell and Mr. Alderman S. R. Anness, together with several of the town councillors.

The MAYOR (Mr. W. A. Churchman) made a feeling reference to the deaths of the King of Italy and of the Duke of Edinburgh and moved:—

> That the President and members of the British Medical Association, assembled at their annual meeting, together with the townspeople of Ipswich, desire respectfully to express to Her Most Gracious Majesty their deep sorrow and sympathy at the severe loss Her Majesty has sustained in the sudden decease of the Duke of Edinburgh, and trusts the Almighty may afford to Her Majesty and the members of the Royal Family abundant consolation.

The resolution was unanimously agreed to.

The MAYOR then, in a few felicitous phrases, welcomed the members of the Association to Ipswich, and congratulated Dr. Elliston and the townspeople upon his selection as President, which they all looked upon as a very great honour.

Dr. ELLISTON rose amidst applause and thanked the Mayor for his kindly words. He then proceeded to read his presidential address as follows:

## THE PRESIDENT'S ADDRESS.

[Dr. Elliston took as the title of the address "Some Incidents in the Evolution of the Modern Physician," and commenced by welcoming most heartily to East Anglia the sixty-eighth annual meeting of the British Medical Association. After commenting upon the growth of the Association during the quarter of a century since its last meeting in East Anglia and after detailing the various literary and scientific reasons why Ipswich should prove an interesting place of reunion, he continued:—]

### *East Anglia and Medicine.*

It is 26 years ago since this great association met in East Anglia, in the city of Norwich, and it speaks for its ever-growing importance and utility that on that occasion there were some 6000 members only, and the scientific business of the meeting was conducted in four sections. On this occasion, the first meeting of the nineteen hundreds, the members have increased to over 18,000, of whom 4000 are members of our Colonial branches, and the scientific work needs 13 sections. The town in which we are assembled is one of much commercial importance. Manufacturers and merchants do a considerable business with many of our colonies. It is an ancient town, and there are many beautiful specimens of old houses, gateways, and corner posts. To those who desire a better acquaintance with its history I would refer them to "Round About Ipswich," by the late Dr. J. E. Taylor;

Corner Posts," by Mr. J. S. Corder, recently published. Great Englishmen have been associated with Ipswich in the past—Nicholas Bacon, the Lord Keeper, was a freeman of Ipswich; his son, the great Lord Bacon, represented Ipswich in two Parliaments, and in more recent times Lord Nelson was high steward. Thomas Gainsborough lived and painted here. Charles Dickens found Ipswich to be worthy of many scenes for his fertile pen; but the personal association which throws lustre upon Ipswich is the fact that the great Cardinal Wolsey was born here. It is still, I think, a standing reproach to Ipswich that there is no monument to his memory, except one that he built himself, and which is the sole remains of the great college he intended to have raised at Ipswich. Among the illustrious medical names associated with East Anglia are William Gilbert, Sir Thomas Browne, Edward Rigby, J. G. Crosse, Sir Astley Cooper, the Brothers Paget Sir Thomas Watson (educated at Bury St. Edmunds) Jeaffreson (ovariotomist), Sir William Gull, John Hilton, Sir George Humphry, and many others, while among those yet living are some of the foremost names in the science of medicine.

*The Development of British Medicine.*

The early history of medical science in this country is concurrent with the advance of all scientific knowledge. During the Dark Ages men of learning had spent their time in translating and repeating what the Greeks had taught, until at last they had come to believe that Ptolemy, Galen, and Aristotle had settled most of the scientific questions and that no one had any right to doubt their decisions. In the annals of British science there was one exception to the apathy of Englishmen—Roger Bacon, the Franciscan friar, who is stated to have been the first man in Europe to make gunpowder. Green speaks of him as living before his time, but the probability is that travelling and studying natural science, and particularly alchemy in Italy, he imbued ideas of scientific progress that were absolutely dormant in this country until 250 years later. The continuous progress of British science commenced with the return of Thomas Linacre to Oxford from the Italian universities, whence he came imbued with what was termed the "new learning," then recently introduced by the Greek professors who had been attracted to Italy. At this time the learned of all countries were profoundly impressed by the recent discovery of America, by the scientific discoveries of such men as Copernicus and Paracelsus. The printing press was changing the conditions of life, and literature became the common property of all. The great event in the sixteenth century, so far as medicine is concerned, was the success of Thomas Linacre in persuading the King to grant a charter to a small body of medical graduates, who were thenceforth called the Royal College of Physicians. He succeeded, it is said, principally through the great and powerful help of Cardinal Wolsey. The charter of the Royal College of Physicians was granted on Sept. 23rd, 1518. It gave them the sole power to license to practise physic in London or within seven miles radius, with other privileges which were confirmed by a statute of Henry VIII. and extended to the whole of England. Linacre was the first President, and he held office to the end of his life.

In 1540 the Barbers and Surgeons were united by Act of Parliament, 38 Henry VIII., cap. 42. They were incorporated as the "Masters or Governors of the Mysterie and Commonalitie of Barbers and Surgeons of London." Thomas Vicary, Serjeant Surgeon to Henry VIII., who had been previously Master of the Barbers' Company, was the first Master of the combined Companies. The Company employed Holbein to paint a picture with the King on his throne, who, with his two physicians, Sir William Butts and Dr. John Chantre, with his apothecary kneeling on his right, presents the Act, which is painted with a seal as if it were a charter, to Vicary, who, with 14 other barbers and surgeons, is on his knees. In 1543 the irregular practitioners of London were protected by Act, and became one of the corporations of the City, and both by royal charters and by Acts of Parliament exercised the power of granting licences to practise medicine. In 1505 the Royal College of Surgeons of Edinburgh was founded, and in 1599 the Faculty of Physicians and Surgeons of Glasgow.

*Scientific Medicine.*

Soon after the birth of the new learning the work of Vesalius, the brilliant young Belgian, aided by his contemporaries Fallopius and Eustachius, raised anatomy to a science based upon the dissection of the human body itself, in addition to that of animals.

It was at the very commencement of the seventeenth century that the original research of two great English physicians, Gilbert and Harvey, completely altered the position of our country in scientific advance. Hitherto there had been no contribution of importance; from this time, however, a complete change came over the scene, and from that day to this our countrymen have taken a conspicuous part in the solution of the many scientific problems and discoveries of the last three centuries. Our East Anglian county of Essex has the honour to be the birthplace of one of these illustrious physicians and the resting-place of both. William Gilbert was born and buried at Colchester, and at Holy Trinity Church there is a monument to his memory. He died unmarried, at the early age of 57 years, in 1603. William Harvey died in 1657 and was buried at Hempstead, in the same county, in his eightieth year.

William Gilbert—or Gilberd as it is spelt upon his mural tablet—was born in the same year that Vesalius was appointed professor of anatomy at Padua, in 1546. He was educated at Cambridge and became a Fellow of St. John's in 1561. In 1573 he settled in London and became subsequently physician to Queen Elizabeth and President of the Royal College of Physicians. His leisure hours were given to chemistry and magnetism. In 1600 he published his "De Magnete." He established the magnetic nature of the earth and he conjectured that terrestrial magnetism and electricity were two allied emanations of a single force. He was the first to use the terms "electric force" and "electric attraction" and to point out that amber is not the only substance which when rubbed attracts light objects, and he described how to measure the excited electricity by means of an iron needle moving freely on a point. He described the properties of the magnet and its attraction and its direction in the relation of the poles of the earth.

William Harvey, the discoverer of the circulation of the blood, was born at Folkestone, graduated at Cambridge, subsequently travelling through Germany and France, and enrolled himself as a student of the University of Padua. His name heads the list of what was called the Jurist University for the years from 1600 to 1602. Here he studied under the celebrated surgeon and anatomist Fabricius. Upon his return to London he joined the College of Physicians and was shortly after his commencement of practice appointed physician to St. Bartholomew's Hospital. In 1615 he was appointed Lumleian Lecturer, an appointment which he held with more or less interruption due to the political disturbances of the times until 1656. He was physician to James I. and Charles I. There are many evidences that his eminence was appreciated by his contemporaries. In 1620, for instance, he attended a conference with representatives of the College of Physicians to protest against the proceedings of the Surgeons, who were moving in Parliament in their own interests, but he failed to induce his own university to coöperate with the College of Physicians. During the Civil War he was in attendance upon the King, and while quartered with him at Oxford he was elected Master of Merton. The work of William Harvey which has immortalised his name in the annals of medicine was published in the year 1621 at Frankfort as "An Anatomical Treatise on the Movement of the Heart and Blood in Animals." Mr. D'Arcy Power, in his admirable contribution to the "Masters of Medicine," says, "Harvey chose Frankfort as the place for the publication of his book because the annual book fair held in the town enabled a knowledge of his work to be more rapidly spread than if it had been issued in England." His researches upon this subject had long occupied his attention, and had been referred to from time to time in his Lumleian Lectures from the year 1606 onwards. The bent of his mind and his method of departure are explained in his book, when he says, "I profess both to learn and to teach anatomy not from books, but from dissections; not from the position of philosopher, but from the fabric of Nature." The results of Harvey's observations are the more remarkable when we consider the scanty instruments and appliances then available, contrasted with our own time when the senses, the arts, and the sciences are all brought into requisition for the discovery and analysis of objective symptoms. The microscope was as yet undiscovered. The number of pulse-beats was not measured by a watch until nearly a century after Harvey's time. In his day, according to Dr.

Norman Moore, physicians contented themselves with estimating the character of the pulse rather than its precise rate. Specialism as now understood did not exist, and Harvey was a surgeon as well as a physician. He performed surgical operations to which he frequently refers. The brilliant work of Galileo, Gilbert, and Harvey, the awakening philosophy of Francis Bacon in this country and Descartes in France, gave an impetus to original research and the investigation of causes that was remarkable in upsetting ancient traditions, and little by little real observation and experiment took the place of mere authority.

*The Royal Society.*

It was about this time that a small body of students assembled at Oxford in 1645 who were later, in 1662, to be known as the Royal Society. It was established as an association of men interested in the development of mathematical and physical science. It is the oldest scientific society in Great Britain, and one of the oldest in Europe. Italy had already established two societies in the time of Galileo and Torricelli. In Germany the Imperial Academy of the Curious in Nature was founded in 1662. The famous French Academy of Science was legally established by the French Government in 1666. All these societies greatly influenced scientific research, and many men who were hitherto unable to publish now read papers at their meetings. Of our own Royal Society it is recorded in the first journal book of the society that these persons met together on Nov. 28th, 1660, to hear Mr. Wren (afterwards Sir Christopher Wren) lecture at Gresham College, London, mentioning twelve names, including three physicians, and that after the lecture they returned to converse and pass resolutions for future guidance. At one of their early meetings 52 was fixed as the number of the society, persons of the rank of Baron, Fellows of the Royal College of Physicians, public professors of mathematics, physics, and natural philosophy of both Universities being supernumeraries. In October, 1660, the King offered to be entered one of the society, and next year the society was incorporated under the name of "Royal Society," the charter of incorporation passing the Great Seal on July 15th, 1662. Soon after incorporation the Royal Society published papers by Malpighi, who by the microscope revealed the minute infinite particles of living bodies.

Somewhat earlier than this two of our countrymen—Boyle, son of Lord Cork, and John Mayow—did much for progressive research and anticipated some of the great discoveries in chemistry and physiology of a century later. Boyle proved that a candle could not burn or an animal breathe without what was afterwards proved to be oxygen gas. These observations were said to have been attentively listened to at the early Oxford meetings of Wilkins and his friends by a young physician, John Mayow, who died at the early age of 34 years, but not before he had proved that air was made up of two portions, the one heavy which supports flame and light, which he called "fire air," and which was subsequently discovered to be oxygen; the other light, useless for living and breathing, and this was the larger portion, which we now call "nitrogen."

*Practical Medicine.*

Practical medicine in Great Britain was developing in this century; a pharmacopœia had been issued, cinchona bark was introduced; and botanical gardens were established. The teachings of Francis, Lord Bacon, and subsequently of John Locke, influenced the direction of thought, while the learning and superb common sense of that great physician Sydenham gave effect to the general advance of this period.

In surgery the growth was slow, principally through the general want of knowledge of anatomy acquired by dissection; but two Englishmen had distinguished themselves in this branch—Nathaniel Highmore and Thomas Wharton—the former discovering the cavity in the superior maxillary bone which is still known by his name and Thomas Wharton discovering the duct of the maxillary gland which is still recognised as Wharton's duct. The diary of Mr. Samuel Pepys illustrates the primitive method of procedure at that time. He says that "on February 27th, 1663, he walked with Commissioner Pett to Chirurgeons' Hall, we being all invited thither and promised to dine there, where we were led into the theatre, and by-and-bye came the reader, Dr. Tearne, with the Master and Company, in a very handsome manner, and, all being settled, he commenced his lecture, and his discourse being ended, we had a fine dinner and good learned company, many doctors of physic, and we used with extraordinary great respect." He also speaks of the gilt cup the gift of Henry VIII., with bells hanging to it, which every man had to ring by shaking after he had drunk up the whole sup. There is also, he says, a very excellent piece of the King, by Holbein, that stands up in the hall, with the officer of the Court kneeling to him to receive the charter.

The man who of all others at the early part of the eighteenth century gave an impetus to medical education was the illustrious Boerhaave, who at the University of Leyden attracted students from all parts, and particularly from this country. He was elected lecturer in 1701 and a few years later occupied the chair of chemistry. He shares with Dr. Hales, the great English chemist, the honour of founding the science of organic chemistry. So highly was Boerhaave esteemed by his fellow-countrymen that upon his recovery from a serious illness in 1722 there was a general illumination of the town of Leyden.

At this time there was practically no systematic medical training in the British Isles, but there were isolated attempts at special instruction. A refugee surgeon, Brussière, settled in England in the time of Queen Anne, and for the first time gave lectures in anatomy in England. In 1711 Dr. Richard Mead lectured and continued his lectures for four years to the Barber Surgeons. In the same year Cheselden commenced a series of lectures which continued for 20 years. The first Munro opened a similar course at Edinburgh. John Rutherford settled in the same city in 1721. Speaking of him, his grandson, Sir Walter Scott, says: "He was one of those pupils of Boerhaave to whom the school of medicine in our northern metropolis owes its rise." Together with Sinclair, Purvis, and Innes he established a laboratory and taught the rudiments of chemistry and other branches of physics. In 1766 Rutherford was appointed Lecturer in Medicine and until 1785 he delivered the lectures in Latin. He founded clinical teaching in Edinburgh. The success was so great that the managers of the Royal Infirmary appointed a special ward for the exclusive use of Rutherford. This laid the foundation of that form of teaching in which Edinburgh has held proud pre-eminence.

*Increased Study of Anatomy.*

Speaking of the history of medicine in the eighteenth century Lecky says: "A still more important fact in the history of medicine was the increased study of anatomy. The popular prejudice against dissection which had for centuries paralysed and almost prevented this study still ran so high in England that in spite of the number of capital punishments it was only with great difficulty the civil power could accommodate surgeons with proper subjects, and all publicity was studiously avoided. With such a state of feeling it is not surprising that the English medical school in the beginning of the eighteenth century should have been far inferior to that which gathered round the chair of Boerhaave at Leyden." In London there was no concrete medical school until quite late in the century. William Hunter came to London and commenced to lecture in 1747; he became a member of the Corporation of Surgeons, and was appointed Obstetric Physician to the Middlesex Hospital in 1742. He is stated to have been an early riser and a man of untiring energies. He was undoubtedly the first great teacher of anatomy in London, and we owe his selection and advance to Dr. James Douglas, an anatomist and obstetrician whose name is associated to this day with modern anatomists as the discoverer of Douglas's pouch.

The advancement of medicine and the allied sciences in the eighteenth century commenced with the contributions of Boerhaave and Hales in organic chemistry, while Buffon taught natural history, and the Swede Linnæus patiently worked out the minute characters of animals and plants. In physics the Scotch physician Black proved the amount of heat dormant in water and steam, which Watt afterwards applied to the steam engine. Electricity was greatly advanced by Benjamin Franklin, the American, who attracted lightning from the sky and worked with it in his own laboratory. Galvani found the wonderful power hidden in the nerves of the frog, and Volta showed how powerful electricity could be produced by two metals placed in acid and water, and this could be carried along a wire of any length which touched the battery at both ends. In physiology great advances were made by Haller, Bonnet, and Spallanzani. John Hunter, by his untiring energy, industry, and perseverance founded the science of comparative anatomy, and as an anatomist and as a practical surgeon built himself an everlasting fame.

*Birth of Chemistry.*

The most remarkable scientific advance was undoubtedly

in the science of chemistry. Almost to the last quarter of the century the theory of "phlogiston" had confused and mystified the researches of the many great and distinguished scientists who had worked in this direction. The important part played by our countrymen in the elucidation of truth is highly satisfactory. The discovery of the gases which enter into the combination of air, water, and fire transferred the alchemy of old into the modern science of chemistry. It was the discoveries of Black, Priestley, and Cavendish, and the independent work on similar lines of the great Swedish chemist, Schiel—himself a practising apothecary—that enabled Lavoisier to recognise the value of the discoveries and proclaim their effects upon science in his "Elements of Chemistry." At the early age of 51 years this philosophical chemist was guillotined by his countrymen in 1794, during the French Revolution. Black discovered carbonic acid in 1756, Cavendish hydrogen in 1766, Rutherford nitrogen in 1772; and it was not until 1774 that Priestley—a Nonconformist minister at Leeds—discovered oxygen. It was also independently discovered by Schiel in 1775. They both deserve credit. Priestley's discovery was made with red oxide of mercury; he heated it, and found that a gas came off, which he collected, and he experimented with two mice and he found that they breathed it and lived much longer than in ordinary air; then he breathed it himself and found that he felt singularly light and easy for some time after. "Who can tell," he writes, "whether this pure air may not become a fashionable luxury. As yet, only two mice and myself have had the privilege of breathing it." It is only of recent years that the great value of the inhalation of oxygen gas has been recognised and utilised in the treatment of certain diseases of the heart and lungs. I think many of us could bear testimony to its life-saving properties in cases which appeared hopeless.

[After referring to the practical work done in the eighteenth and early nineteenth centuries by Jenner, by Dr. Richard Mead (who discovered the acarus scabiei), by Dr. J. Lind (who traced scurvy to dietetic errors), by the elder Heberden, by Dr. Robert James (the inventor of James's Powder), by Dr. Matthew Baillie, by the brothers Hunter, by Lettsom, Abernethy, Charles Bell, Cheselden, Astley Cooper, Pott, Hey, and many others, Dr. Elliston continued:—]

*Medical Legislation.*

The important legislation of the nineteenth century was the Apothecaries Act of 1815. This Act has been proved to be one of the greatest boons ever conferred upon the medical profession, and whatever may be the sentimental objection to a learned profession being connected with traders we are bound to remember that to those who sought the Act of 1815 we are indebted for a reform which has been far-reaching in its results. Previously to this Act the education of the medical practitioners of England and Wales was entirely optional on their part, and although many of them possessed degrees or licences of the Universities or Colleges the greater number possessed no such qualification and many of them were wholly illiterate or uneducated. About the year 1850 a preliminary examination in arts was instituted as a necessary and independent requirement before proceeding to the medical curriculum. In 1858 the Medical Act became law, and by this Act the L.S.A. of London was permitted to practise throughout Scotland or Ireland. The Apothecaries Amended Act passed into law in 1872. Women were admitted to practise in 1876. In 1878 the pharmaceutical chemists were licensed by Act. It is worthy of observation that the State has hitherto not interfered to prescribe the subject matter or the minimum standard of medical examination, although there has been at least one attempt by the Government of the day to establish a uniform minimum. Under the beneficent legislation of the century, and particularly by the establishment of the General Medical Council, jealousies between the different branches of the profession have mainly disappeared, and it is difficult now to realise that at the commencement of the present century it was far otherwise, thus, we find a young physician advanced by his College in 1803 as a reward for a pamphlet against the growing pretensions of army surgeons. The use of wise legislative enactments in the social influence and status of the profession soon became apparent, but of course its full effects were not evident until many years had elapsed. It is quite within my memory that the only qualification recorded in many instances in the annual "Medical Directory" was "in practice prior to 1815." It is not a little singular that the Apothecaries Act has gradually extinguished the apothecary as then understood. I can remember an apothecary's shop in this town. That has now become a thing of the past, as will be soon, I trust, what is called the open surgery of to-day. With the better education required and the institution of examinations a different class of students were attracted to medicine, and they were rarely satisfied with the apothecary's licence but sought further a surgeon's diploma.

*The Medical Press.*

The growth of the medical press and the influence it had upon the medical profession commenced with the efforts of William Sharman, M.D., who was born at Harwich in 1767. He commenced in 1810 to edit a periodical which was styled the *New Medical Physical Journal or Annals of Medicine, Natural History, and Chemistry*. It was in existence in 1815.

In 1815 Thomas Wakley was a student of the Borough Hospitals; the greater part of his medical education was acquired at the Grainger School. In 1817 he became a M.R.C.S. and commenced practice. Fortunately, perhaps, he did not altogether succeed and his great talents were turned in the direction of journalism. He founded THE LANCET in 1823 with the primary object of disseminating much needed information hitherto regarded as the exclusive property of members of the London hospitals and also with a view of exposing the family intrigues that influenced the appointments in the London hospitals and the medical corporations. For the first ten years of its existence THE LANCET provoked a succession of fierce encounters between the editor and the members of the privileged class in medicine. In the first number Wakley made a daring departure in commencing a series of shorthand reports of hospital lectures. On Dec. 10th, 1824, Mr. Abernethy applied to the Court of Chancery for an injunction to restrain THE LANCET from publishing his lectures. The injunction was refused by Lord Eldon, on the ground that official lectures in a public place for the public good had no copyright vested in them. Mr. Wakley then commenced a regular issue of hospital reports of cases and notable operations. The irritation at them was so great that his exclusion from St. Thomas's Hospital was ordered. He also carried on a campaign against the Royal College of Surgeons of England. Mr. Wakley and his successors have done work which has advanced the general interest of the profession by leaps and bounds, and during the long period of its usefulness THE LANCET has always availed itself of the best talent, and many of those who have achieved success in other departments have given their early work to the advancement of medical journalism. At the present time the influence of the press is enormous. Our own *Journal*, reflecting the opinions of this Association, shares with THE LANCET and many other medical periodicals in guiding the profession upon every question to the direct issues constantly occurring.

[Dr. Elliston here acknowledged the impossibility of giving anything more than quite a brief enumeration of the brilliant work of the British physicians and surgeons of the nineteenth century. He alluded especially to the work of Richard Bright, of Hodgkin, of Thomas Addison, and of Sir William Gull (all of whom were members of the staff of Guy's Hospital), of Sir William Jenner, of Graves, of Hughes Bennett, Marshall Hall, Elliotson, Stokes, Alison, Sir Thomas Watson, the Farrs, Sir J. Simpson, Tyler Smith, the Budds, Spencer Wells, Bucknill, Tuke, Bowman, Hilton, Sir B. Brodie, Aston Key, Sir W. Lawrance, Robert Liston, Syme, Sir W. Fergusson, Sir George Humphry, and many others living and dead.]

It is not, perhaps, Dr. Elliston continued, so generally known as it deserves to be that William Jeaffreson of Framlingham in the county of Suffolk, an East Anglian surgeon, was the first surgeon in England to perform the modern operation of ovariotomy by a small centre incision. The circumstance, as recorded in the Transactions of the Provincial Medical Association of 1837, are as follows: "Mr. Jeaffreson in 1833 lost a patient suffering from an abdominal tumour. She died from tuberculous disease of the lungs and, obtaining the consent of the friends, he made a post-mortem examination, which satisfied him that the tumour could have been removed, and but for the disease of her lungs her life might have been spared." In November of the same year Jeaffreson and his friend King attended together a lady in her confinement with a small tumour. They subsequently advised an operation and

in May, 1836, a central incision was made, about one and a half inches long, the cyst tapped, withdrawn, the pedicle secured by ligature, and the ends cut off short. The wound was adjusted by two sutures and napkins wrung out in the coldest water were constantly applied to the wound. Sulphate of magnesia was administered every four hours and all went well until the tenth day, when Jeaffreson was called to his patient at 3 A.M., to find her pulseless, with incessant vomiting and hiccough and griping pains in her body. A stimulating enema with two grains of opium gave her speedy relief and she recovered. His friend and neighbour King, at Saxmundham, Suffolk, about 10 miles away, operated a few weeks later with complete success, his incision being somewhat longer—about three inches. Two years subsequently a third East Anglian surgeon, Crisp of Harleston, who lived about 20 miles from Jeaffreson, was also successful with an incision of two inches in length. These three cases, which were performed by three surgeons in general practice in this county were the first in England in response to the doctrines of William and John Hunter and are the more remarkable when we consider that no operation of the kind was attempted in London until four years later and no ovariotomy was performed in a London hospital until 10 years after Jeaffreson's case.

*Antiseptics and Anæsthetics.*

The two great discoveries of the nineteenth century in connexion with both medicine and surgery are the antiseptic treatment (for which we are indebted to the genius of a living surgeon, Lord Lister) and the use of anæsthetics. The anæsthetics now in general use are nitrous oxide gas, discovered by Sir Humphry Davy in 1800; sulphuric ether, by Faraday; and chloroform, by Liebig. I shall not detain you by a history of the introduction of anæsthetics into surgical practice, but as we have still living in East Anglia a most distinguished surgeon (Mr. William Cadge), who was present on the occasion of the first operation in London under the influence of ether I thought it would be interesting to hear his record of the circumstances. Mr. Cadge says: "Robert Liston was the first surgeon in this country to use ether, and those who were present at University College Hospital on Dec. 21st, 1846, and witnessed the complete and perfect success of that first venture, will not easily forget the dramatic character of that scene. I was present and assisted at the operation—amputation of the thigh by the double flap method. Someone present timed the operation; it took 30 seconds; the few arteries were tied and all signs of blood cleared away. A towel was then thrown over the stump and we watched anxiously for the patient to show that he was not dead; he presently woke up, and when asked once or twice if he could stand the pain of the operation, he accused us of cruelly trifling with his feelings, and when the towel was removed and he saw the naked stump he burst into tears, and I thought Liston would do the same."

[Dr. Elliston concluded an interesting address by a *résumé* of the various Acts of Parliament recently passed having for their object the maintenance and improvement of public health.]

At the conclusion of the address, which was listened to with close attention,

Mr. HOWARD MARSH proposed a vote of thanks to the President for his address, which was marked by great research, clear statements, and a due appreciation of the great truths passed in review.

Dr. I. H. CAMERON (Toronto) seconded the motion and expressed the pleasure with which they had all listened to a survey of 500 years of the history of medical and surgical art.

The motion was passed *nem. con.*, and the PRESIDENT briefly replied.

Mr. WARD COUSINS, on behalf of the Council, offered a hearty welcome to the foreign and colonial representatives, to which Professor RODDICK of Montreal and Professor NICOLAYSEN of Christiania replied.

The meeting then terminated.

## SECOND GENERAL MEETING.

The second general meeting was held in the Central Hall of the Higher Grade School on Wednesday afternoon, the room being well filled.

The President of the Council, Dr. ROBERTS THOMSON, declared the names of those not returned to the Council and also the names of the newly-elected members. He also announced that an invitation had been received from the Gloucester branch asking the Council to hold the meeting of the Association in 1891 at Cheltenham and that the Council recommended that the invitation be accepted. This was agreed to and Dr. G. B. FERGUSON was appointed President elect.

The PRESIDENT then called upon Dr. Pye-Smith to deliver the address in medicine which will be found at p. 309.

At the conclusion of the address Dr. SAUNDBY moved, and Colonel KENNETH MACLEOD, I.M.S., seconded, a vote of thanks to Dr. Pye-Smith. This was carried unanimously, and Dr. PYE-SMITH returned thanks.

The PRESIDENT then said that it was his very pleasant duty to award the Middlemore Prize for 1900 to Dr. Ernest Maddox of Bournemouth. This prize is of the value of £50, and was awarded this year for researches in ophthalmology.

The report of the Parliamentary Bills Committee was then taken, and Mr. R. B. ANDERSON made a personal explanation with reference to some remarks which he had made in moving a rider to the sections of the report dealing with the Midwives Bill upon the previous day, the accuracy of which had been called in question by Mr. Victor Horsley.

On the report of the Scientific Grants Committee, Professor BYERS urged that the distribution of the grants was too much centralised. The grants should, in his opinion, be spread more over the country. He also objected to the giving of grants to rich London hospitals.

Dr. HUDSON moved—

That the scientific grants be discontinued and the money devoted as prizes to work already done.

At present he considered that the money was frittered away.

As, however, no seconder came forward the motion dropped.

On the report of the General Practitioners and Ethical Committee Dr. C. F. K. MURRAY, president of the Cape Town Branch, spoke of the growing difficulty at the Cape of dealing with friendly societies and clubs on the matter of a wage-limit. The medical practitioners in South Africa looked to the Council for guidance in this matter and he suggested that those at home who had had experience of the difficulty of the question should help their brethren abroad in a practical manner by expressing their opinion, and to this end he submitted the following motion:—

That this meeting resolves that the Council be requested to issue a circular to all branches of this Association inviting them to express an opinion and to submit proposals on the question of the "wage limit" as applied to clubs, provident dispensaries, and societies, &c., with a view to suggesting a reasonable and fair working basis; furthermore that it be an instruction to the Council to report and advise this Association thereon at its next annual meeting.

The motion was seconded by Mr. G. H. BROADBENT, who thought it shocking to hear that such a state of things existed in South Africa. He considered that as the question had been before the Council for eight years it was quite time that something was done by them in the matter.

The motion was then agreed to, with one dissentient.

The PRESIDENT then called upon Mr. Victor Horsley to submit his motion, which stood in the following terms:—

That a committee be appointed to consider and report upon the best means of reorganising the constitution of the British Medical Association, such committee to furnish a provisional report to the branches by March 1st, 1901.

Mr. HORSLEY sketched his idea of what the reformed constitution of the Association should embrace. He referred specially to the creation of delegates from the branches to the Council and deprecated the view so commonly held that a delegate must be in a subservient position. He also referred to the establishment of a medico-political bureau and of an information bureau. He concluded by suggesting that the proposed committee should consist of 23 members, and if his resolution were accepted he would read the names which he proposed to submit to the meeting.

Dr. BRASSEY BRIERLEY in seconding the motion said that as Mr. Victor Horsley's motion covered most of the points with which he had dealt in his notices of motion he would withdraw them all except one, which he would bring forward later.

Mr. T. J. VERRALL, a member of the Council, then rose in support of the motion.

Dr. A. COX wished to move a rider dealing with the principle of delegation. It was, however, ruled by the PRESIDENT

that the rider was out of order. It could, however, be put as an amendment.

Dr. COX, however, withdrew it at the suggestion of the PRESIDENT, intimating his intention of bringing it up as a fresh motion if Mr. Horsley's proposal were accepted.

Mr. R. BRUMMITT asked Mr. Horsley if he would fix an earlier date than March 1st, as the Australasian branches would thereby have an opportunity of expressing their opinion on the subject.

Mr. HORSLEY agreeing to this the date was altered to Feb. 1st, and his motion was thereupon put and carried unanimously.

Mr. HORSLEY then read out the names he proposed for the committee, upon which a long discussion ensued, it being eventually agreed that the committee should consist of 24 persons, of whom one-half should be nominated by the Council and their names would be handed in to the general meeting which was to take place on the following day. The other 12 members were to be nominated by the general meeting, with whom also the final selection of the whole committee was to rest.

Dr. A. COX again brought forward his original rider to Mr. Horsley's resolution as a new motion, which, after some discussion, was lost, it being felt that the hands of the new committee appointed to consider the alterations in the constitution of the Association should not be tied in advance.

The meeting then adjourned.

## THE SECTIONS.

### MEDICINE.

WEDNESDAY, AUGUST 1ST.

The President, Dr. T. BUZZARD (London), stated that he had been requested not to give a formal introductory address.

*Influenza as it Affects the Nervous System.*

Dr. JUDSON S. BURY (Manchester) opened this discussion. He referred to the diversity of symptoms of influenza in different epidemics and in different persons which made it very difficult to construct a scheme of symptoms which could be said to represent a typical case of the disease. Four types of the disease could be recognised, distinguished by the organ chiefly affected; (1) affecting the mucous membranes; (2) the gastro-intestinal tract; (3) the heart; and (4) when the nervous system was exclusively attacked. In all these forms and in nearly every case the nervous system was profoundly affected, as evidenced by the pain in the head and the back, which was seldom absent, hyperæsthesia, delirium, and depression, all symptoms which were the result of the action of a toxin on the nervous system. In cases where the more ordinary nervous symptoms appeared to be absent careful observation would show others, such as undue dyspnœa in pneumonic cases and tachy- and brady-cardia in cardiac cases which were essentially nervous in nature. At the same time he was not prepared to say that in every case the influence of the toxin on the organ was exerted solely through the nerve. He recognised two chief groups of nervous affections following the disease—those developing during the febrile stage such as meningitis and encephalitis where the brain tissue was directly affected, and those arising later, due probably to a less virulent toxin, and in which while visible degeneration of nervous matter might be discovered in a proportion yet in many nothing of the kind could be seen. In the first group, again, he distinguished a comatose and a delirious type. The former was a very serious state, often ending fatally, and he quoted at length one or two cases. Post mortem a condition of hæmorrhagic meningo-encephalitis was found and a drawing of the condition in the pia-arachnoid was exhibited, showing endarteritis apparently of recent origin with thrombi in the diseased vessels. Pfeiffer's bacillus, though difficult to demonstrate, had been found, and cases of meningitis were also due to this as well as sometimes secondary to otitis media or nasal suppuration. Other results of influenza were cerebral embolism, thrombosis, and abscess. The delirious type was common in children. The spinal cord might be attacked together with the brain or independently. Generally it was affected after the initial attack but sometimes during it. The enumeration of every form of nervous disease that had been reported as following influenza would be merely the enumeration of every known form of nervous affection of brain, spinal cord, or peripheral nerves. The peculiarity of the influenza toxin as distinguished from that of diphtheria was that it affected nervous tissues haphazard and not so much in groups. He related a series of cases illustrative of his remarks, referring particularly to the various forms of multiple neuritis, and asked for the opinion of members as to whether in their experience the nerves affected were most frequently the sensory or motor, and also if anyone present had seen cases where the respiratory muscles were paralysed. In conclusion, he said that it was possible that multiple neuritis might be due to bacilli as yet unknown and not to Pfeiffer's or the Klebs-Lœffler bacillus, these being merely predisposing agents.

Sir WILLIAM BROADBENT (London) distinguished between the results of influenza due to toxins and those due to the bacilli of the disease. He thought the poison generally attacked the weak spot. He related a case of acute dementia following influenza. He thought that in the neurasthenic, neuralgic, and similar cases they had the effect of the toxin, while Dr. Bury's acute comatose type was probably similar in character to those cerebral attacks in malignant malaria where the vessels were found choked with parasites and leucocytes. He had seen a most acute case of the kind during an epidemic of influenza on board a training ship. Five boys became comatose and two died. The chaplain who had visited the boys was seized with the disease. Coma came on very rapidly. There were muscular rigidity and inability to empty the bladder, the temperature was 103° to 104° F., and the patient, though rallying after large doses of quinine hypodermically administered, died in a week. Another patient had meningitis, some paraplegia, and very extensive herpes round the loins. Another had unilateral convulsions of great severity, accompanied by no paralysis. This patient made a complete recovery which was retarded somewhat by long-continued sleeplessness. In a case which he considered to be due to thrombosis of the vessels of the right cerebral hemisphere the patient had left hemiplegia of slow and gradual onset. It was 10 years ago and he had continued to show progressive improvement ever since, and was now nearly well. He had seen a case of universal multiple neuritis which eventually proved fatal by implication of the respiratory muscles.

Sir PETER EADE (Norwich) thought the fact worthy of notice that the section was still discussing influenza ten years after its reappearance as an epidemic, whereas as far as they knew previous epidemics had disappeared much more rapidly. He could not agree with Sir W. Gowers that the incidence of the influenza poison was chiefly on the motor nerves. He thought that the medulla oblongata bore the brunt of the attack of the disease, and that this accounted for the frequency of heart disturbance. He thought that all these nervous symptoms were not true sequelæ but continuations of conditions which had existed during the primary attack. He related some cases of sleepy condition with bradycardia.

Professor CLIFFORD ALLBUTT (Cambridge), who said that he had not intended to take part in the discussion, insisted on the importance of correct diagnosis. He thought they ought to be extremely careful before asserting that any particular condition was the result of influenza, and that in many reported cases it was merely a matter of remote inference that such was the case. As an assistance in diagnosis he considered suddenness of attack a very valuable sign and instanced the case of a man who was seized while riding on horseback. With regard to the parts of the body most frequently attacked he agreed with the opener of the discussion that the anterior part of the brain was most frequently the seat of influenzal lesions and described a case under his own care where there had been very slight paralytic symptoms which disappeared but the patient remained aphasic, not when speaking slowly and deliberately but whenever he tried to talk fast. If there were certain areas preferentially attacked by the disease they ought to be ascertained. He doubted if it attacked weak points. He recommended lumbar puncture in meningo-encephalitic cases and bacterial diagnosis. He confessed that he was a pessimist in regard to prognosis in most of the cases under discussion.

Dr. NEWTON PITT (London) said that many cases of meningitis occurred in the early days of the influenza epidemic, but he was not sure that they were all due to the influenza bacillus. In one or two cases when it followed distension of the nasal sinus and antrum, &c., the bacillus had been found. In another a bacillus thought to be the diplococcus of Fraenkel was discovered but he would not like to say now that it might not have been the diplococcus intracellularis meningitidis. He referred to cases of influenza

which were quickly followed by enteric fever, and while thinking that the diagnosis was probably in many cases correct considered that the cases of meningitis were not more likely to be due to Pfeiffer's bacillus than these cases of enteric fever were. As a point in diagnosis he thought that in multiple neuritis due to influenza facial paralysis was more common than in others. He considered the affections of the heart to be due to disease of the nerves and not of the myocardium. He also thought that in many cases the irregularity of the heart's action was secondary and due to dilatation of the stomach produced by the original disease.

Dr. J. MACCORMAC (Belfast) doubted whether diphtheria was a specific infectious disease.

Dr. FRANK M. POPE (Leicester) related a case of the comatose type of encephalopathy in a boy in a large industrial school, and thought that in some cases injury might determine the point of incidence of the disease. In anosmia, where the nervous mechanism of the special sense affected was very close to the nasal mucous membrane where the poison entered, recovery was not likely unless it began early. He found that most of the cases following influenza that he had seen were in connection with the earliest epidemic, and thought the reason was that the people whose nervous system were likely to be affected were attacked on the first occasion and the less liable only remained, among whom, of course, in subsequent epidemics not so many cases were likely to occur.

Dr. S. K. MULLICK (London) thought motor nerves were more usually affected than sensory.

Mr. S. E. SOLLY (Colorado) related a case of hemiplegia in a young woman with aphasia which was almost certainly of influenzal origin and which ended in recovery.

Dr. R. SAUNDBY (Birmingham) considered that diabetes after influenza was a similar condition to diabetes occurring after any other acute disease and he regarded influenza as a fairly typical infectious process. As to the way in which the diabetes was produced he thought some cases might be due to a chronic interstitial pancreatitis.

Mrs. GARRETT ANDERSON asked that diagnosis should be very carefully made. They were too ready to call everything influenza. Diagnosis, however, did not much help treatment in these cases. She inquired into the conditions which might intensify the poison of influenza, thought that such a series of cases as Sir William Broadbent had mentioned as having occurred on a training-ship showed that overcrowding intensified the poison, and had seen similar instances among crowded communities, such as schools and nurses' and servants' quarters. Prognosis must in most cases be based on the recovery rate.

Dr. W. EWART (London) spoke of the different aspects which such so-called system diseases as locomotor ataxia, Friedreich's disease, and spastic paraplegia presented when they were the effect of influenza as contrasted with their usual appearances. Instead of beginning gradually and increasing in severity the first influenzal forms began acutely and progressed, at all events for a time, towards recovery. He gave instances of several of such cases. He hoped that from that discussion they might learn something of how toxins affect the spinal cord and brain, and inquired whether in cases where nervous diseases come on some time after the initial disease there are not some bacteria still living and producing their toxin somewhere in the organism, nasal mucous membrane, or elsewhere, and suggested that an efficient cleaning was necessary here, as after diphtheria, lest the convalescent should be a disseminator of disease for some time after apparent recovery.

Sir J. W. MOORE called attention to the psychical state of influenza patients which makes them believe that they are the subjects of organic lesions and thought that many cases of post-influenzal nervous disorder were purely subjective. He agreed that most cardiac symptoms were of nervous origin and not myocardial.

Dr. ST. CLAIR THOMSON (London) agreed that anosmia was frequently curable. He doubted whether it was possible to apply stringent antiseptic proceedings to the nasal mucous membrane. It was naturally aseptic but he agreed that cleansing might be done.

Dr. W. CALWELL (Belfast) asked for statistics with regard to deaths during chloroform inhalation of persons who had recently had influenza.

The PRESIDENT considered the discussion suggestive and valuable. On the broad question he had no doubt that influenza was capable of producing and often produced the gravest changes in the nervous system. It might act in two ways. There was a class of disease which was revealed by influenza—i.e., the disease brought to light some flaw unsuspected previously. He quoted a case of tabes made worse by the disease. In the same way he believed that cases of melancholia and mania were due to the displaying of flaws in the mental apparatus. After all, this was only a small part of the question. They had to deal with the direct effects of a virulent poison on the nervous system. One point he thought had not been touched on which he considered an evidence of the toxæmic origin of the diseases mentioned. In early days he had written on syphilitic disease of the nervous system and had pointed out the bizarre arrangements of the symptoms of these diseases. They might see one leg paralysed together with the opposite arm, one eye and the opposite leg, and other such arrangements which they did not see in ordinary cases of disease from such causes as senile internal change or the like. Now this sign had been generally recognised as a sign of disease produced by toxins. Dr. Medin of Stockholm had reported an epidemic of anterior poliomyelitis where, together with the changes resulting from diseases in the anterior corneal cells, there were facial pain, hemiplegia, affections of the lateral columns, and other symptoms. Again, Dr. W. Pasteur had brought before the Clinical Society a similar epidemic and had asked if he was justified in regarding these cases as anterior poliomyelitis as other and remote structures were involved. Dr. Buzzard then quoted the case of a strong working man who, as the result of influenza, had double optic neuritis with complete optic atrophy, nystagmus, and paralysis of all four extremities, intentional tremor of one upper extremity, and loss of knee-jerks, showing that the toxin had affected widely separated motor and sensory neurons. Two similar cases were also given, in the latter of which a post-mortem examination had shown marked change in the vessels and ground substance in the floor of the fourth ventricle. He thought such anomalous conglomeration of symptoms pointed most strongly to the toxæmic nature of these affections. They could not cramp and confine the grave nervous diseases of influenza into ordinary terms. They must either largely increase their nervous terminology or else not use it in this respect. Systems of motor and sensory neurons must form the basis of their new nomenclature. The diseases of the nervous system due to toxins had largely increased in late years and they were not all due to influenza, there being a great many unlabeled toxins at work, but many had still the disease for their cause.

Dr. JUDSON BURY replied, and as an instance of the value of such a discussion he said that it was dogmatically stated in Leichtenstein's work on influenza, perhaps the best up to date, that the respiratory muscles were never affected in post-influenzal multiple neuritis, yet two such cases had been related in that room that day.

## SURGERY.

### WEDNESDAY, AUGUST 1ST.

*The Presidential Address.*

Mr. HOWARD MARSH, F.R.C.S., surgeon and lecturer on surgery at St. Bartholomew's Hospital, opened the work of the section with the following speech:—

It has been agreed that there shall be no formal addresses at the opening of the various sections. I think members will endorse this arrangement. It may be possible to make such addresses interesting and perhaps even instructive; but they are in no way a necessary part of your proceedings and they would encroach materially on the very limited time which is at your disposal for the proper business of the meeting—the reading and adequate discussion of clinical papers. A very few remarks, however, which have a direct reference to the work of the section may be really useful. On some previous occasions so many papers have been accepted for reading that many valuable contributions could only be hurried through in abstract and no discussion was possible. This was unsatisfactory to all concerned. On the present occasion the object has been to cut the garment according to the cloth; in other words, to adjust the number of papers to the time that is available, so that each may have a fair hearing and be fully discussed. I anticipate that all who are present will regard this as the proper method. Two set discussions have been arranged on subjects both of which I feel certain members will regard as well worthy of their attention. Subdiaphragmatic abscess is no doubt a somewhat

rare condition, yet it may occur in the practice of anyone. It is highly dangerous to life, and both in regard to diagnosis and treatment it presents difficulties of a very grave and embarrassing order. As the subject will be introduced by Mr. Godlee, and discussed by those whose names are a guarantee of their knowledge and sound judgment, I am sure that valuable information will be forthcoming. The subject of fractures belongs to a different order. It is so old and familiar that it may appear at first sight to be too hackneyed and barren to be worthy of your notice. On second thoughts, however, I believe that it will be felt that the opposite is really the case. Long a mere matter of routine, the treatment of fractures has lately felt the influence of modern advance in other departments of surgery. The Roentgen process secures an accuracy of diagnosis which formerly was often impossible. The aseptic method makes operative interference safe, so that when necessary it can be adopted without hesitation, and it has become obvious that to secure the best results treatment must be applied not only to the fractured bone itself, but to the neighbouring joint and the muscles and other structures of the limb. All these are points that present themselves, and I feel certain that Mr. Bennett's paper, on which I know he has expended considerable time and labour, and the ensuing discussion will be attended with practical results of very material value which will establish and disseminate methods of treatment which will largely promote the welfare of patients and the credit of this department of surgery. As to papers to be read I will merely venture upon one or two brief and, as I may term them, official remarks. The time allowed to each paper is 15 minutes, and to the discussion 10 minutes for each speaker. We must, as I have said before, cut our garment according to our cloth, and if one member of the section takes up more than his share of the cloth, those who follow him must go short, so that conciseness, which must not of course impair clearness of statement and completeness of argument, will be a blessing which we shall all thoroughly appreciate and greatly applaud, while as your humble servant I shall be spared the distress of curtailing remarks which, however weighty and to the point, are materially overstepping the allotted time.

### *Subdiaphragmatic Abscess.*

A discussion followed on Subdiaphragmatic Abscess which was introduced by Mr. RICKMAN J. GODLEE (London), who pointed out that though the condition was rare yet it had lately been made the subject of a lengthy monograph by Prag. He mentioned that Maydl had classified the causes of subphrenic abscess under many heads, and he intended on the whole to follow the classification. In itself subdiaphragmatic abscess was not a disease but merely a by-product of some other disease. It was usual to speak of two varieties, an extra-peritoneal and an intra-peritoneal, but these two conditions presented very different symptoms and were associated with very different dangers. The best definition of a subdiaphragmatic abscess was "a collection of pus, with or without gas, between the diaphragm and the structures in contact with it." Mr. Godlee proceeded to give an elaborate and exact account of the anatomy of the under-surface of the diaphragm, detailing the relations of it with the contiguous viscera. He pointed out that the diaphragm should be regarded not as a single dome but as two domes, to a great extent separated by the projecting bodies of the vertebræ. It was also important to remember that a large portion of the under-surface of the diaphragm was not covered by peritoneum, but in immediate contact with the liver, stomach, spleen, pancreas, suprarenals, and kidneys. As to the symptoms of the disease there were none which could be described as pathognomonic. In the early stages there might be hiccough, a stitch in the side as in pleurisy, and friction. He considered that much benefit in diagnosis might be derived from the careful use of the stethoscope. The abscess might give rise to dulness at the lower part of the chest and might be accompanied by displacement of the heart. It might be diagnosed from pleurisy by the fact that the movements of the chest were not impaired, that the upper limit of the dulness was not so well defined as in a pleuritic effusion, and that the breath sounds might be heard below the upper level of dulness. Mr. Godlee mentioned that in emaciated persons it was frequently possible to see through the intact chest wall the lower border of the right lung ascending and descending during respiration. This sign, if present, would be quite against the presence of a pleurisy or pleuritic adhesions. If gas was present in the abscess (the so-called subdiaphragmatic pneumo-thorax) the bell sound might be readily elicited. The tympanitic note might reach upwards even as far as the second rib, and yet the respiratory movement of the chest was not interfered with. He proceeded to consider in turn the causes of the abscess. 1. *Stomach.*—If a gastric ulcer ruptured the pus might be localised, even though it had been poured out into the peritoneal cavity. In other cases the rupture might occur into the small sac. The symptoms in such a case would be very different from those met with in a case in which the perforation of the ulcer proceeded very slowly, so that the stomach had time to become adherent to adjacent viscera. These chronic abscesses burrowed greatly, and when accompanied by serous effusion into the pleura were likely to be mistaken for cases of empyema. 2. *Intestine.*—In these cases the abscess resulted from the rupture of a duodenal ulcer or an ulcer of the transverse colon. Pus and gas collected, pushing the diaphragm upwards, sometimes to a very great degree. There might be no dulness when the patient was lying down, but a tympanitic note; yet if the patient stood erect some dulness was evident at the lower part. In operating on these cases mere drainage might be sufficient, but sometimes it might be possible to close the opening in the bowel. 3. *Cæcum and appendix.*—When a subdiaphragmatic abscess followed on disease of the cæcum or appendix the original inguinal swelling might become less obvious. The abscess was usually on the right side, but it might occur on the left. The pleura might be perforated and an empyema might form. 4. *Hydatid.*—Suppuration of a hydatid cyst of the liver or spleen might simulate an empyema. 5. *Liver and bile passages.*—Many abscesses of the liver were really perihepatic and might perforate the diaphragm. 6. *Kidney.*—A perinephral abscess might be a true subphrenic abscess, and occasionally a greatly enlarged pyonephrosis might extend so far upwards as to simulate a subdiaphragmatic abscess. 7. *Subcutaneous injuries.*—The abscess sometimes followed a blow without a wound of the skin; in this case the blow had probably caused the rupture of a previously existing ulcer, just as the removal of a breast had been followed by perforation of a gastric ulcer. 8. *Wounds* might give rise to the abscess by the introduction of septic material. 9. *Metastases.*—Mr. Godlee thought it was a little difficult to be sure what Maydl meant by this class. 10. *Ribs.*—Caries or necrosis of the ribs might cause this form of abscess. In these cases the suppuration was really in the substance of the muscle, and might give rise to numerous sinuses. 11. Collections of pus in the thorax might make their way downwards, so that caries of the dorsal spine and inflammation of the mediastinum might cause a subphrenic abscess. 12. Under the last heading Maydl put "Various causes." One of these was actinomycosis; it progressed very slowly, and it hardly gave rise to true pus. It was probably a much more common cause than was usually imagined. Surgical treatment was unsatisfactory. Tuberculosis, peritonitis, and disease of the pancreas were also rare causes.

Mr. BRUCE CLARKE (London) said it was difficult to lay down general rules for diagnosis. In some cases the diagnosis could only be made by recognising that the patient was suffering from some obscure illness and by excluding other conditions. He was inclined to believe that an ulcer of the stomach or intestine was by far the commonest cause. In the treatment of these cases much help was obtained by inserting one hand through a laparotomy wound; thus the exact relations of the abscess could be made out and the best position for an incision could be found. A case illustrating this point was related. He objected to "metastasis" being given as a cause; the expression "a septic condition" was much better.

Mr. L. A. BIDWELL (London) had had six cases. In four of these a diagnosis of empyema was made, and of these four cases three were caused by an ulcer of the stomach and the fourth by an ulcer of the colon. He considered that the pus in a subdiaphragmatic abscess had a peculiarly offensive odour by which it could be distinguished from an empyema.

MIS. STANLEY BOYD (London) read the notes of a case of subphrenic abscess which had commenced with vague gastric symptoms and for some weeks an exact diagnosis was not possible. Ultimately a correct diagnosis was made and the abscess was opened and drained and, so far as the abscess was concerned, the patient improved, but died a little later from ulcerative endocarditis.

Mr. FULLER (Cape Town) urged the importance of a

bacteriological examination of the pus removed from the abscess by an exploring syringe, for if the bacterium coli were found it would be greatly in favour of a subphrenic abscess and opposed to an empyema.

Professor CAMERON (Canada) related a case in which a subdiaphragmatic abscess burst into the general peritoneal cavity. Incidentally he mentioned that it would be desirable to have a word more philologically correct than "appendicitis."

Mr. FIRMIN CUTHBERT (Gloucester) mentioned a case in which a subphrenic abscess was drained. The patient had had the symptoms of gastric ulcer five years previously. In that case the hyper-resonance over the abscess was well marked.

Mr. R. C. CHICKEN (Nottingham) described two very interesting cases in which dulness in the left hypochondrium was caused by extreme thickening of the pericardium. In one of these there was an abscess under the diaphragm with a very tortuous sinus.

Professor LENNANDER (Upsala) mentioned a case of a man who received a severe blow on the right side from a carriage. The liver was pushed down by a liquid collection between the diaphragm and the liver; this was evacuated by an incision in the loin and it was found that the liver was torn. The fluid was found to be a mixture of blood, pus, and bile. The man recovered.

Mr. NOBLE SMITH (London) described two cases in which the subdiaphragmatic abscess was the result of caries of the spine.

Mr. GODLEE, in reply, expressed the opinion that many cases of so-called metastasis were really cases of direct extension of sepsis. He doubted the value of the smell in the diagnosis of these abscesses.

## OBSTETRICS AND GYNÆCOLOGY.

### WEDNESDAY, AUGUST 1ST.

After a few introductory remarks by the President of the Section, Dr. W. S. A. GRIFFITH (London), the first discussion on

*Puerperal Fever in Relation to Notification*

was opened by Dr. BERRY HART (Edinburgh). He recognised three forms of puerperal fever—viz. (1) the acute form associated usually either with serious laceration or ruptures of the genital tract, or with retention of portions of the placenta or membranes; (2) the lymphatic form; and (3) the venous form. As to the first form the difficulties of the labour would probably put the medical attendant on his guard. The second form was the most frequent, presenting the characteristic features of rigors and rapid pulse, high temperature, and in short the typical picture of sapræmia. The third or venous form was the most difficult to diagnose, inasmuch as it was simulated by typhoid fever, drain infection, &c. As to the "drain poison" so ably advocated by Dr. Playfair as a cause of puerperal pyrexia, he could only regard it as "not proven." Cases should be notified as puerperal fever where they had the clinical features of a general or threatened general pyæmia; sapræmic conditions, and localised septic pelvic conditions need not be notified. These definitions would, he hoped, meet the first of the objections made to notification—viz., the difficulty of definition of puerperal fever. Two other objections were met with—viz., the risk of misleading statistics due to errors in diagnosis, and the supposed unwillingness of practitioners to notify cases likely to end fatally. Of the first of these little was to be said, but as to the last there was no doubt that the notification of puerperal fever was always disagreeable to the practitioner, and yet on looking over the statistics of large towns, like Sheffield, London, and Leeds, he felt sure that notification was conscientiously carried out, since the notified cases considerably exceeded the number of actual deaths. The advantages of notification were, first, that it supplied information as to the frequency of this condition and of its tendency to increase or decrease; secondly, that it would help in prevention by putting the medical officer on the track of careless midwives or nurses. But notification was of little value unless accompanied by provision of hospital accommodation and isolation for bad cases. Proper laboratory equipment of such a hospital would be essential.

Dr. W. J. SMYLY (Dublin) said that it would be very important to know the extent of the mortality from puerperal fever in private practice; but this was a matter of great difficulty. As a matter of fact, the total returns of mortality in childbirth were of more scientific importance than the cases notified as "puerperal fever," for the latter returns were apt to be vitiated by variations in definition. In the Registrar-General's returns there were three classes of deaths reported: (*a*) deaths from metria; (*b*) deaths from accidents in childbirth; and (*c*) deaths due to causes not directly connected with childbirth. The greatest difference of opinion would be found in relation to the third group, because cases reported as due to rheumatic fever, typhoid fever,, scarlet fever, &c., after parturition might well be considered as being really, in some instances, cases of puerperal fever. The term puerperal fever was an anachronism; there was no such thing as a specific "puerperal fever," since fever after childbirth was merely a form of sepsis. The great difficulty was to know which cases should be notified. Dr. Berry Hart had said that cases of general infection should be notified but that it was not necessary in the case of local infection. But why not? Was not local infection also apt to be dangerous as a source of infection? And then why should they stop at puerperal sepsis? Why not notify all cases of sepsis occurring after surgical operations. As a matter of scientific value notification did not promise much, but as a matter of prevention of puerperal fever it might be of some value by inducing greater care and acting as a check. The popular view of puerperal fever was very different from the scientific one. According to the former it consisted in a kind of malign influence which became attached to a medical man, causing him to carry infection to every woman he attended; consequently notification would in many cases mean great injury to medical practitioners, if the words "puerperal fever" were used. It would be better to use the simple word "septicæmia."

Dr. JOHN CAMPBELL (Belfast) also thought that notification of puerperal fever as such would, in the present state of public opinion, lead medical men into great trouble with their patients and their friends, for the popular view was that puerperal fever was due to the fault of the medical man or the nurse. Consequently, while notification would be a good measure some means should be taken to safeguard the practitioners. His own view was that medical men were responsible for puerperal fever in only a small proportion of cases; the infection being generally conveyed by midwives. He knew of a case where a medical man attended a woman, using all possible precautions, yet she contracted puerperal fever. Three months later the medical man found that the daughter of the midwife was suffering from gonorrhœal ophthalmia, and that at the time of the confinement the midwife, who had made several examinations of the patient, was douching her daughter for gonorrhœal vaginitis. He believed that in a fair proportion of cases puerperal fever was due to antecedent conditions in the patient herself—e.g., gonorrhœa contracted before delivery. One important point in connexion with notification would be greater control of midwives and the education of the public.

Dr. ROBERT BOXALL (London) joined issue with Dr. Campbell in regarding the disease as at all likely to arise from disease pre-existing in the patient herself. This at least was the conviction forced upon him by the results at the General Lying-in Hospital where no case of sepsis had arisen during the last 12 years. Owing to the difficulty in deciding what should or should not be included under the term "puerperal fever" he agreed with Dr. Smyly that all cases of septicæmia, whether local or general, should be notified, for a mild form in one patient might be quite capable of setting up a violent form in another.

Dr. A. V. MACAN (Dublin) said that public notification of puerperal fever appeared to him to be out of the question until it became the rule of the profession to tell the patient and her friends when the case was one of puerperal fever. It was well known that at present this was usually not done. The use of notification generally was either for the good of the patient herself or to prevent the spread of the disease to others. The first object could hardly be hoped for in the case of puerperal fever, for unless the patient were removed from the charge of her medical attendant, no change could be made in the treatment or surroundings. As to the second object, if the practitioner were acquainted with modern antiseptics, he would not require notification to prevent the spread of the disease, and unless they had compulsory powers over midwives they could not compel them to cease practice. The great *desideratum* at present

was the better training of midwives. He believed that at the present time it was the rarest thing to find a trained midwife in country workhouses and country districts in general. As to auto-infection, while quite believing in its occurrence, he regarded it as so exceedingly rare as to have no practical influence on the percentage of puerperal mortality. In his opinion the first step should be to train both medical men and midwives more thoroughly, and not to adopt compulsory notification.

Professor J. W. BYERS (Belfast) pointed out that the great argument in favour of notification was that by its means the prevention of the disease might be hoped for. The definition of puerperal fever was a very difficult matter; but on the whole Dr. Berry Hart's broad definition might be accepted. Bacteriological examination was of great value in forming a diagnosis. Dr. Campbell had said that cases of auto-infection formed a large proportion of cases, but this was not his own view; on the contrary, he thought that they were of comparatively rare occurrence. as was shown by the statistics of lying-in hospitals and by the fact that the majority of cases of puerperal fever were met with in primiparæ, and that patients who were not examined vaginally hardly ever contracted puerperal fever. The mortality from this disease might be diminished, first, by teaching students and midwives the importance of abdominal examination; secondly, notification, for this would teach all concerned, on reflection, that in the great majority of cases the disease could be prevented.

Mr. JAMES GREEN (Portsmouth) asked what degree of pyrexia and what period of its onset after delivery would mark a case as a suitable one for notification. His own view was that a temperature under 100° F. would not need certifying, nor would a case coming on a week or more after delivery. As to personal asepsis on the part of the medical attendant, he found absolute certainty very difficult to secure.

Dr. R. BRUMMITT (South Australia) spoke of the conditions that existed in that colony, where the responsibility of notification rested with the medical attendant. Any statistics of cases of notification were of little value because of the differences of opinion as to what constituted puerperal fever.

Mr. J. H. TARGETT (London) thought that the object of notification should be the provision of proper nursing and treatment of the affected case, and if necessary its removal to an infirmary when the circumstances of the patient required it. In his teaching of the students he always impressed upon them the importance of the medical attendant taking upon himself the responsibility in every case of puerperal fever.

Dr. MICHAEL BEVERLEY (Norwich) considered that the main reason for the notification of puerperal fever was that it was a preventable disease and that notification would be the best means of stamping it out.

Dr. ARTHUR HELME (Manchester) took exception to Mr. Targett's attitude in instructing the students that when puerperal fever developed the student and the nurse were responsible. It had been so persistently explained to the public that in the matter of puerperal fever the practitioner was the sole and blameworthy cause that at the present moment in many districts to tell the friends that the patient had puerperal fever would permanently injure the practitioner. Whilst it was true that in most cases puerperal fever was due to infection from without it was equally true that in a large number of cases the source of infection was within the patient herself, hence if notification was to be adopted it was important that the erroneous popular view that in every case of puerperal fever the practitioner in attendance was practically a criminal should be combated.

Dr. HENRY BRIGGS (Liverpool) pointed out that puerperal fever should be regarded as surgical fever and that the modes of prevention of the one and of the other were identical. Much in the success of treatment depended upon early diagnosis, and if this were attended to notification was unnecessary. He advocated the provision of isolation wards as a supplement to notification.

The PRESIDENT considered that in the matter of puerperal fever, the only course open to the medical practitioner was to be candid with the patient's friends. He could not suppose that, as some of the speakers apprehended, the practice of the medical attendant would be seriously affected by such a course; every man who had done his work conscientiously would surely receive sufficient support from his patients to avert such dire consequences of a single unfortunate case. He read an extract from a communication from the Local Government Board pointing out that "the object to be attained in so far as preventive medicine is concerned, is to bring to the knowledge of the sanitary authority all those conditions which, supervening upon parturition, are communicable from one parturient woman to another. He also quoted the statement of a medical officer of health that his experience of notification had been disappointing, inasmuch as the deaths from puerperal fever in one or two years had been in excess of the notifications in his district; and that except for disinfection of bedding at the end of a case, the intervention of the medical officer of health was seldom necessary.

After a brief reply by Dr. BERRY HART, the following motion was proposed by Dr. BOXALL, seconded by Dr. BEVERLEY, and carried *nem. con.*

That it be a recommendation to Council that in the opinion of this meeting it is desirable that notification of puerperal fever (septicæmia) should be adopted generally.

## STATE MEDICINE.

### WEDNESDAY, AUGUST 1ST.

Dr. J. C. THRESH, medical officer of health to the Essex County Council and Lecturer on Public Health at the London Hospital Medical College, delivered a

*Presidential Address*

entitled Some Problems in Rural Sanitation. He said: One of the most interesting problems which has engaged the attention of scientists during recent years is that of the period for which man will continue to live upon this earth. There is a general consensus of opinion that a time will come when the earth will cease to be habitable, but there is a wide divergency with reference to the length of the period which will elapse before the human race disappears. There are those who think that some great catastrophe may terminate our existence at an early period, others calculate that we are using up the available oxygen in the atmosphere so rapidly that in the course of two or three centuries there will not be sufficient left to support life. At the opposite extreme we have those who teach that man may continue to inhabit the earth for the millions of years which will elapse before the cooling process solidifies all the water on the globe. These speculations, however interesting, have little bearing upon public health, but there are other questions somewhat analogous in character which sanitarians will have seriously to consider. One of the most important is the continued increase of population, an increase almost exclusively confined to towns and cities. The effect of over-population is well exemplified in the two countries in which the population has attained its maximum density, India and China. The result is periodic famines, generally associated with pestilence in some form, affecting wide areas and millions of people. The earth's population is increasing steadily and in certain countries with great and continuously increasing rapidity. The production of food cannot for any very lengthened period keep pace with the increase of population, and it may be that famine and disease will more and more frequently occur and keep down the population within the limit of the available food supply. The growth of the large manufacturing centres with the influx of rural labourers into towns, and the general neglect of purely agricultural pursuits, must in this country produce some marked effect. That this effect will conduce neither to increased health nor to longevity can scarcely be denied; hence it is a result which we must deplore. The country has already reached a condition in which the population far exceeds that which can be fed by its produce, and the condition is being aggravated year by year by the increasing population and continuous neglect of agriculture, and I am afraid will continue until we receive a rude awakening, an awakening which in all probability will stagger humanity.

Our purely rural population is slowly decreasing, our urban population is rapidly increasing; therefore year by year the feeding problem becomes more serious. This is a fact so well recognised that its very familiarity is producing contempt. It is well, however, that we should from time to time be reminded of the fate upon which we appear to be almost blindly rushing. Sanitary improvements unfortunately tend only to aggravate the evil and hasten on the day of reckoning. So much attention has been devoted to urban sanitation that the town dweller enjoys now many

advantages not possessed by those who remain in the country, advantages which tend to prolong life, increase health, and, generally speaking, make life better worth living. For example, in most of our towns every house is efficiently drained and abundantly supplied with pure water, rendering it possible, with the minimum of trouble, to keep a house and its surroundings sweet and clean and therefore healthy. In our villages and rural districts nuisances from the improper disposal of filth abound on every side and the water-supplies too often are unsatisfactory in quality as well as in quantity. Land is going out of cultivation and decreasing in value, yet it is often impossible to obtain a small quantity to effect sanitary improvements. Let a plot be required in order to provide cottages with ground upon which to dispose of the slops and house refuse, or for the erection of better houses for the labourer, or for the erection of an isolation hospital, and it is often almost impossible to obtain it. Land-owners refuse to sell small areas for such purposes, yet, in my county at least, farms are sold at ridiculously low prices and the speculator who purchases, recognising the demand for small plots, promptly cuts up the farms and sells the land at an enormous profit. The dog-in-the-manger policy so common amongst land-owners and their agents I cannot account for, but it is a fact which is well recognised and deplored. How to bring back people to the land is one of the greatest problems of the age. It is far too large a subject for me to dwell upon, but I am convinced that one of the chief requirements for restoring prosperity to our rural districts is increased facilities for acquiring small areas of land for sanitary improvements. With a sufficiency of land adjoining or near each house the necessity for sewers in most of our rural districts would be avoided, though in compact villages urban in character drains and sewers will still remain a necessity. The supply of water to our cottages is even a greater difficulty. Sanitary authorities are not only averse to the expenditure necessary to provide a public supply, but too often also averse to causing landlords to provide such a supply when it can be done at what is defined by Act of Parliament as a reasonable rate. Another very important requirement, I might almost say the vitally important requirement, is decent cottages for our rural labourers. Many Acts of Parliament have been passed having for their object the better housing of the working classes. Their utility in rural districts has been practically *nil*. We shall welcome the discussion on this subject, which will be opened by my friend Dr. Tew at one of the meetings of this section. The effect of the present defective accommodation upon the mental, physical, and moral well-being of the inhabitants is too well known to need repetition. The housing problem is of importance not only to the rural labourer but to the whole country, and should be treated as a national problem. My apology, if any is needed, for touching upon these questions relating to rural sanitation in my opening address is that we are meeting in a large agricultural centre, in the centre of a group of rural counties in which these subjects are of the deepest interest, and that I, as medical officer of health of one of these counties, am myself more particularly interested in their study and am desirous of doing what little I can towards improving their sanitary condition and bringing about a new era of prosperity.

*Rate-supported Sanatoria for Consumption.*

Dr. NATHAN RAW (Liverpool) read a paper on this subject in which he dealt specially with household infection. Phthisis was essentially a chronic disease that could not be stamped out by legislative action. The education of the public was a necessary preliminary. From the facts of the case the consumptive poor would have to be cared for at the expense of the rates. Existing Poor-law institutions were unfitted for the treatment of such cases. The Liverpool and Toxteth Unions formed a joint tuberculosis committee and secured a site upon the Dee at an elevation of 650 feet to be used for early curative cases only. Fresh air and sun were the only cures known at present. Notification and free disinfection were desirable. The erection of public sanatoria was mainly one of municipal enterprise. Within a few years it would probably be difficult for a consumptive to obtain employment.

Dr. COOPER PATTIN (Norwich), Dr. ALFRED HILL (Birmingham), Dr. D. OLDFIELD (London), Dr. J. GROVES (Carisbrooke), Dr. H. PECK (Chesterfield), Dr. GRÜNBAUM (Liverpool) Dr. C. MACFIE (Bolton), and Dr. THRESH (Chelmsford) discussed the paper, and Dr. RAW replied.

## PSYCHOLOGY.

WEDNESDAY, AUGUST 1ST.

Dr. PERCY SMITH (London) in his Presidential Address, referred to the subject of the Prevention of the Causes of Insanity. These comprised the marriage of the neuropathic and hereditary transmission, alcoholism, and syphilis. He pointed out the ways and means of prevention that should be brought into operation so that the recent and alarming increase of insanity should be checked.

A vote of thanks was proposed by Dr. MACDOWALL, seconded by Dr. SOUTAR, and carried unanimously.

Dr. MACNAUGHTON-JONES (London) opened a discussion on the Correlations between Insanity, Vice, and Crime, and pointed out the importance of coöperation between the alienist and the gynæcologist. The discussion was continued by Dr. SOUTAR, Dr. BERNARD O'CONNOR (London), Dr. WYNN WESTCOTT (London), Dr. PERCY SMITH, Dr. SEYMOUR TUKE (London), and Mr. CARDEW.—Dr. MACNAUGHTON-JONES then replied.

Dr. E. S. PASSMORE (London County Asylum, Banstead), read a paper on Epileptoid Mania or Psychic Mania, and instanced cases in support of the view that many cases regarded as recurrent non-epileptic mania were really epileptic in character.

The paper was discussed by Dr. OLDFIELD, Dr. LLOYD ANDRIEZEN (London), Dr. MACNAUGHTON-JONES, Dr. PERCY SMITH, Dr. SOUTAR, and Dr. MACDOWALL, and Dr. PASSMORE replied.

The meeting then adjourned till the next day.

## PHYSIOLOGY.

WEDNESDAY, AUGUST 1ST.

The proceedings of this section opened with a debate initiated by the President, Dr. W. D. HALLIBURTON (London) upon the Formation and Excretion of Uric Acid in Health and Disease.

Dr. A. HAIG (London), Dr. T. H. MILROY (Edinburgh), Dr. F. G. HOPKINS (London), Dr. W. J. SMITH JEROME (Oxford), Dr. J. HADDON (Denholm), Dr. HARRY CAMPBELL (London), and Dr. R. J. ANDERSON (Galway), took part in the discussion.

Papers were then read by Dr. J. HERBERT PARSONS (London) upon the Dilatation of the Pupil from Cortical Stimulation, and by Professor F. WACE CARLIER (Edinburgh) upon Changes occurring in the Cells of the Newt's Stomach during and after Secretion.

## PATHOLOGY.

WEDNESDAY, AUGUST 1ST.

Dr. E. E. KLEIN, Lecturer on General Anatomy and Physiology at the Medical School, St. Bartholomew's Hospital, delivered the following short

*Presidential Address.*

Pathology in its analysis of the nature of the tissue changes has been influenced, it is admitted, to a not inconsiderable degree by the progress made in bacteriology within the last two or three decades. Pathology no less than, and in no way different from, other biological sciences, intent on answering the "what," as also the "why," asks not merely what is the intimate nature of a particular change and aberration of a tissue or organ from its normal or physiological state, but also, and in a higher degree, why this change, and what its cause? Why a particular alteration in one, another in another instance? Microscopical and experimental analysis have both been active in discovering some fundamental facts, but have left numerous gaps in this study, and it is by the aid of bacteriology—since it became, thanks to the foundations laid by Koch, an exact science—that these gaps are being closed up, or at any rate that the manner and method are indicated by which these gaps may, and probably will, be filled up. The time at my disposal does not permit of more than illustrating these propositions by a few of the more striking examples.

1. *Inflammation.*—For more than a century inflammation, by the aid of the improved microscope and by experimental work which had occupied a host of active minds and of great experimentalists, was being analysed in all its elements—the part that the vascular system, that the tissues, that the nervous mechanism play in establishing the peculiar alterations constituting the phenomena of inflammation, suppuration, and

their sequelæ; thereby an enormous number of facts were brought to light, by which the understanding of these particular aberrations from, and return to, the normal conditions became clearer, or were believed to have become well understood. It is now admitted, however, that with the exception of traumatic, thermic, and chemical agencies, the chief, if not the sole, cause of the changes of the vascular apparatus and the surrounding tissues constituting inflammation, inclusive, of course, of suppuration, are micro-organisms, which either by their chemical activity—producing substances which exert a toxic action on the vascular system or the tissues, or both—or by the toxic nature of the protoplasm of the microbes themselves lead to the abnormal interaction between the vessels and the tissues, manifesting itself in the exudation of fluid and formed elements of the blood and the progressive or retrogressive changes of the tissue elements themselves. It is one of the best-proved acquisitions in bacteriology that many microbes, either when growing and multiplying outside or within the tissues, produce toxins which in the tissues set up the phenomena of inflammation either locally or generally. This applies not only to those microbes which are specially and in the narrower sense connected with suppuration and abscess—for example, various species of pyogenic staphylococci, streptococci, and bacilli—but also to other specific pathogenic microbes like the diphtheria bacillus, the tubercle bacillus, tetanus bacillus, and typhoid bacillus. Koch's tuberculin, the diphtheria toxin, and the toxins of many other microbes produced in the test tube and then injected into the tissues produce typical inflammation. The same has been shown of the dead protoplasm of many microbes—for example, tubercle bacillus, cholera vibrio, bacillus pestis, and others, as also of some ordinary saprophytes—namely, that the dead bodies of these microbes contain pyrogenic and pyogenic substances capable of producing typical inflammation. Another set of phenomena of which an explanation is supplied by bacteriology is one well known in the study of inflammation—that is, the greater or lesser number of leucocytes in some inflammatory foci. It is well known that while some inflammations are characterised by copious transudations with few leucocytes, others, on the other hand, are associated with copious accumulation of leucocytes, as in suppuration. The phenomenon of chemotaxis seems to offer a good explanation for these differences; that is to say, while some microbes or their toxins powerfully attract leucocytes from the blood and connective tissues, others have no such effect or possess even the reverse—namely, negative chemotaxis. In a similar manner Pfeiffer first classified the effects of chemical substances on lower organisms.

2. *Necrosis.*—The most valuable and earliest observations were those of Roux and Yersin, showing that the toxin produced by the diphtheria bacilli has a powerful necrotic action on the tissues. The further demonstration of the actual presence of the toxin in the diphtheritic membrane supplied at once the simplest and most feasible explanation of the necrotic condition of the mucous membrane in diphtheria—namely, the multiplication of the diphtheria bacilli at a particular locality—be it the fauces or larynx, or trachea or bronchi, or any other membrane—causes the production of the toxin, which in its turn causes the inflammation, and further the necrosis, of the membrane. But this action—namely, localised inflammations leading to gradually progressing necrosis of the tissue elements—is not peculiar to the diphtheria bacilli and their toxins, for it is almost a common character of many, if not most, pathogenic microbes; it is observed in connexion with almost all hitherto known pathogenic bacteria, tubercle, glanders, leprosy, pseudo-tubercle, pathogenic cocci, and bacilli of various kinds. It is this progressive necrosis of the tissue following the typical symptoms of inflammation—congestion, stasis, diapedesis, and emigration of leucocytes—which is observed, granted the necessary number and virulence, as the effect of the action of many pathogenic microbes; inasmuch as at a particular locality primary as well as secondary foci are found, so long as their multiplication proceeds and their toxins are being produced, and thus the necrosis of the tissue spreads into larger and larger areas. In non-microbic inflammations, on the other hand, this necrosis is local and circumscribed, being due to the direct action of the noxious agent—thermic, chemical, or traumatic—and its action is limited to the part actually attacked or its immediate surrounding. The necrosis itself appears in both series, however, of the same essential character—namely, coagulation of the protoplasm of the tissue cells, inclusive of the vessels themselves, and a gradual disintegration and destruction of the cells as also of the intercellular ground substance. These phenomena have been well observed in the case of a number of pathogenic microbes. Another not less important set of appearances associated with the necrotic change caused by bacteria is the secondary leucocytosis and suppuration; and for this the chemotactic action that the necrosed tissue exerts on leucocytes, attracting these for one reason or another, probably as scavengers and removers, offers a ready explanation.

3. *Specificity of cell secretions.*—Until recent years it was generally considered that a specificity of cell secretions was one of the fundamental phenomena of the physiological or normal tissues. Behring, Kitasato, Brieger, Roux, Ehrlich, and many others have, however, shown that under the activity of many pathogenic bacteria and their toxins in an affected body a curious and important series of secretions on the part of the cells of the tissues takes place which is as specific as those others associated with the normal life—I mean the production of specific antitoxins and the production of specific agglutinins. It was further shown that not only under the stimulation of the cells by bacteria and their toxins are those specific antitoxins secreted, but that organic substances like abrin, ricin, and venin are capable of stimulating the cells to a like production of specific antitoxin. Moreover, quite recently a further highly interesting series of facts have been brought to light—namely, that particular tissue taken from one animal body and introduced into another causes a specific reaction, showing itself in this, that the living cells of the latter produce under the particular stimulation substances specifically acting on the particular tissue that has caused the stimulation.

A discussion was then introduced by Dr. F. W. ANDREWES (London) upon

*The Pathological Distribution of Bacillus Diphtheriæ and the Bacteriological Diagnosis of Diphtherial Infection.*

Dr. ANDREWES pointed out that the bacteriological diagnosis of diphtheria was required for two purposes—for the purpose of clinical diagnosis and for strictly scientific purposes, such as the demonstration of the diphtheria bacillus in the throats of healthy persons. In the latter case a rather prolonged investigation, extending perhaps over many days, might be required before the identity of the bacillus could be satisfactorily established. For clinical purposes a diagnosis was required within 24 hours, and for his report the bacteriologist had to rely mainly on the microscopic appearance of the culture. This was not sufficient by itself for the positive identification of the bacillus, and the report sent to the physician merely meant that a bacillus morphologically resembling the diphtheria bacillus was present in the patient's throat. With that additional fact in his possession the physician must then consider the clinical features of the case and form his own diagnosis. Under the conditions in which the diagnosis was required it was impossible to place the onus of making a diagnosis on the bacteriologist without affording him sufficient time to complete his investigation.

In the discussion which followed the PRESIDENT, Professor MUIR, Mr. W. M. CROWFOOT (Beccles), Dr. LISTER, Dr. LAZARUS-BARLOW (London), took part, and the conclusions formulated by Dr. Andrewes were accepted by all the speakers.

Professor MUIR read a paper On a Case of Serious Anæmia and Purpura Associated with Great Deficiency in the Red Bone Marrow.

Mr. ROGER WILLIAMS (Clifton) read a paper On the Pathogenesis of Myoma of the Uterus, and Dr. JOHN EYRE read a communication On Nutrient Media of Standard Reaction.

The proceedings of the section were adjourned until the following day.

## OPHTHALMOLOGY.

WEDNESDAY, AUGUST 1ST.

An opening address was delivered by the President of the Section, Dr. W. A. BRAILEY (London), upon the subject of Ocular Headaches, after which a paper was read by Mr. RICHARDSON CROSS (Bristol) upon the Treatment of Chronic Glaucoma, when a debate ensued in which Dr. J. HERN (Darlington), Mr. WORK DODD (London), Dr. K. A. GROSSMANN (Liverpool), Mr. G. A. BERRY (Edinburgh), and Mr. DEVEREUX MARSHALL (London) took part.

## DISEASES OF CHILDREN.

WEDNESDAY, AUGUST 1ST.

The proceedings in this section were well attended. After a few brief introductory words from Dr. F. TAYLOR (London), the President, the first subject for debate, the Nature and Varieties of Pneumonia in Children, was introduced by Dr. NESTOR TIRARD (London). Dr. LORIMER HART (London), Dr. NICOLAYSEN (Christiania), and Dr. A. M. GOSSAGE (London), took part in an interesting debate which followed.

## PHARMACOLOGY AND THERAPEUTICS.

WEDNESDAY, AUGUST 1ST.

Dr. WALTER G. SMITH, King's Professor of Materia Medica School of Physic, Trinity College, Dublin, and Physician to Sir P. Dun's Hospital, gave a short

*Presidential Address*

on the subject of the Teaching of Pharmacology. The rise and growth of the science of pharmacology, he said, which was founded by Bichat and Magendie early in the century, has made it plain that all correct appreciation of the mode of action of drugs must be based upon physiology and pathology. The new departure has gradually leavened our conceptions of therapeutics and renders the teaching of this branch alike more intelligible to the student and more satisfactory to the teacher. I well remember the time when attendance upon materia medica lectures was a dreary enough obligation, and the course was to students perhaps the least popular in the entire curriculum. Comparing the teaching of materia medica and therapeutics 30 years ago with the present time three features stand out prominently: (1) the retrogression of descriptive materia medica in its restricted meaning; (2) the establishment of special courses in practical pharmacy at the medical schools, conducted in suitable laboratories; and (3) the development of pharmacology in its present acceptation—that is, the scientific investigation of the modes of action of drugs. In regard to the place of pharmacology in the medical curriculum and the best mode of teaching medical students I heartily join with Dr. J. B. Bradbury (Address to Section of Pharmacology and Therapeutics, Portsmouth, 1899) in protesting against undue neglect of what may be termed old-fashioned materia medica—that is, description of the *essential* properties and chemical nature of drugs—so far as these elucidate the action of the remedy or its relations to prescribing. A modern course of lectures on materia medica should most certainly be founded on the bed-rock of pharmacology—that is, physiology; but there is still room—nay, I think, necessity—for practical demonstration of the physico-chemical properties of drugs, and we need not even be ashamed of inculcating the utility of some familiarity at least with the pages of the British Pharmacopœia which it is the fashion of some to despise or decry.

Thanks to the labours of physiologists and pharmacologists on the one hand and of organic chemists on the other hand, it is now possible, and even comparatively easy, to give an interesting and practically useful course of lectures on materia medica and therapeutics to medical students, but not earlier than their third year. I venture to affirm that it is entirely the fault of the lecturer and not of his subject if he does not succeed in quickening the dry bones of materia medica and in awakening and maintaining the lively attention of his class. With a little thought and trouble numerous simple experiments, chiefly chemical, can be shown in illustration of the more important physiological and therapeutical properties of drugs. General principles can be laid down, alliances pointed out, and broad features sketched which connect together large numbers of drugs, into the individual details of which it would be wearisome and a waste of time to enter. Take, for example, antipyretics and their mode of action; or the local action of astringents and caustics, experimentally illustrated by the reactions of various acids and metallic salts upon solution of albumin. Or, again, the group of "aromatic compounds" where it is possible to give a brief but comprehensive survey of the general chemical and physiological relations of the subdivisions of this great group—namely, hydrocarbons, phenolic compounds, acids, and nitrogen derivates (alkaloids, &c.). And in this aromatic group, which includes the antipyretic drugs, there is abundant opportunity for drawing attention to many interesting points in illustration of the connexion between physiological action and chemical constitution.

Since the properties and motions of molecules which determine physical properties depend upon the motions and properties of atoms which determine chemical reactions, the same common laws must govern both physical and chemical phenomena; and no one can doubt that the properties of the most complex compounds depend upon, and are intimately correlated with, the properties and configurations of the atoms and molecules of which the aggregates are built up. This fascinating subject, which received its impetus in Great Britain from the labours of Crum Brown and Fraser, has not escaped the attention of former speakers at meetings of this Association, for at the Brighton meeting of 1886 Sir T. Lauder Brunton delivered an attractive address on the Connexion between Chemical Constitution and Physiological Action; and Sir W. Broadbent upon more than one occasion (in 1890 and again in 1895) has likewise referred to this topic which he rightly esteems as one of fundamental significance. Bit by bit—here a little, there a little—we are gathering the kind of material which can best help us to gain insight into the principles of therapeutics. True, we may have to wait a good while before a stately edifice can be built up, but none the less does it hold true that the problems of therapeutics, and for that matter of all biology, are, at the root of things, essentially chemical or physico-chemical, in so far as we are at all able to interpret them or refer them to general laws. Within the last 15 years the remarkable and daring theories of Van't Hoff and his followers upon the nature of dilute solutions, based upon certain physical data—namely, osmotic pressure, alterations of the boiling-point and freezing-point—together with Arrhenius's hypothesis of ionic dissociation have largely engaged the attention of physicists and chemists. Nor have they failed to make their impress upon pharmacological investigations. The earliest reference I have noted in pharmacological work to Van't Hoff's important researches is contained in a paper by Hofmeister.[1] In the same journal[2] is a suggestive paper by Dreser, "Ueber Diurese und ihre Beeinflussung durch pharmakologische Mittel."

One word in conclusion. The flood tide of discovery of new synthetic chemical remedies has, together with a few treasures which have risen on its crest, also washed on shore much rubbish of a pseudo-scientific sort. Are we not daily worried with samples and with advertisements and circulars from eagerly competing firms announcing new drugs or novel combinations which I fancy are used chiefly by those who do not know how to employ the old ones? Scarcely are they advertised once before they are elbowed away by importunate new-comers. The advertisement is headed with an enigmatical name, standing over an appalling chemical formula, and probably ornamented with a structural or graphic diagram. All this is backed up by a plausible show of original experimental work and ends with a "full literature." In a pamphlet lately issued about some new-fangled preparations of iron 62 literary references were appended and a well-known and reputable drug firm advertised in a recent number of the *British Medical Journal* more than twenty of its special preparations, some of which probably most of us never heard of. And not only are we plagued with innumerable circulars which choke our waste-paper baskets, but we are tormented during our consulting hours at home by the visits of smooth-tongued touting agents of many of the large firms. This most objectionable practice is on the increase. It should, in my humble opinion, be stamped out by the medical profession, and I avail myself of this public opportunity to protest against it. For some time past I have made it an invariable rule, and given directions accordingly, that I will not receive or interview the agent or representative of any drug firm, no matter how famous. If by chance or sheer audacity one of these gentry does find his way into my consulting room he very speedily finds his way out again.

## LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, AUGUST 1ST.

*Presidential Address.*

The President of this section, Dr. SCANES SPICER, in his opening address, after welcoming those attending the

[1] Zur Lehre von der Wirkung der Salze, Archiv für Experimentell Pathologie und Pharmakologie, Band xxv., 1889.
[2] Band xxix., 1892.

section and thanking those who had undertaken to introduce the discussions and offer papers for consideration, went on to say:—

Again, in 1900, we have a combined Section of Laryngology and Otology, in which arrangement, I think, the Council of the Association have acted wisely. Except when we meet in the largest centres, or on special occasions like international congresses, it is not easy to secure a sufficiently large attendance to make two sections profitable. Then, nearly all the present generation of specialists in throat, nose, and ear diseases practise all divisions, and there can be no doubt that the field of work and the chief questions of interest are the same to us all. Further, it appears to me that the sections of the British Medical Association annual meeting are intended not only for specialists but for the much larger number of practitioners who feel attracted to our subjects, and that we shall more effectually secure the diffusion of knowledge and interest by the consideration of broad questions common to both branches rather than of minute and unsettled problems peculiar to either laryngology or otology, more appropriately dealt with at the special societies and larger congresses.

In comparing the status of the specialist in the past with that of the specialist of to-day the President remarked upon the startling rapidity with which the evolution of the special study of diseases of the throat, nose, and ear had taken place, and predicted that it would not be long now before laryngology and otology would take full rank in all university and qualifying tests. He reminded his listeners that on the Continent and in America the universities had given to this specialty and its professors a recognition equal to that of any other branch of medicine or surgery. He then briefly reviewed the reasons for regarding nasal stenosis, obstruction, or insufficiency as a pre-eminent factor in the etiology of catarrhal processes of the throat, nose, and ear, and continuing, said:—

That the results of nasal obstruction are being gradually recognised is evidenced by the fact that it is now no uncommon thing to have cases of obstruction of the most diverse character sent for the adenoid operation in which the post-nasal adenoid hyperplasia element is absent or insignificant. This implies that the symptoms of obstruction as seen in one of its commonest forms are by some erroneously supposed to be due only to adenoids. It is by no means derogating from the claims of William Meyer to our gratitude if I suggest that in most cases of adenoids the post-nasal adenoid hyperplasia is only a part, and often a small part, in the pathological condition of the so-called adenoid child; that fractured and deflected bones and cartilages, turbinal enlargements, hypertrophied tonsils pushing up and growing up behind the soft palate, stunted nostrils, and even vaulted palate are often far more important features in the case at the time of examination than the post-nasal adenoid hyperplasia. The failure to recognise this or to act upon it is the cause of the unsatisfactory results which sometimes ensue if the practitioner has undertaken to bring about a cure by simply removing the adenoids. Hence the discredit and suspicion which have often surrounded the question of adenoid operations and an explanation, at the same time, of the most common factor in a recurrence. I believe the truth to be this: In many children with nasal obstruction no formal adenoid operation need be done with an anæsthetic—and its risks are not *négligeable* unless under special circumstances—if the other factors in the obstruction are attended to. I have no hesitation in estimating that many hundreds of adenoid operations are done unnecessarily in this country every year when adenoids are not present, or if present are only an insignificant element in the obstruction which depends mainly on other causes. The result of this is a complete absence of relief of the symptoms of obstruction or only a slight and temporary improvement by the adenoid operation. The question which we should put to ourselves is this: Is it the mere presence of the adenoids or the impeded breathing which leads to the arrested evolution evidenced by the so-called "adenoid physiognomy," the alar collapse, the stunted nostrils (persistence of infantile condition), the vaulted palate and crowded teeth, the "drawn" eyes, and the deformed chest? The answer can only be—the impeded respiration. This leads to imperfect use or disuse of the nasal channels, the structures adjacent have not the normal stimulus to grow excited by functional activity, and it is in the use or disuse of structures during growth and evolution that we shall find the master key to explain the normal or arrested evolution of the surrounding organs and structures. Hence child breathing is just as important as child feeding to bring about normal growth, and with insufficient supply of air through stenosed nostrils, or improperly prepared supply through the mouth come lessened vigour and weak breathing in addition to the developmental arrest.

It often happens that an operation for adenoids or nasal obstruction is regarded as the termination of the case and that it should be unnecessary to take any more special trouble. This idea should be most strongly combated. The operation is only the first step towards the child getting back into the right road. The track being clear it has now to be used and developed. Well-considered developmental and respiratory exercises for the expansion of the chest and the restoration of respiratory vigour, for the removal of articulation and resonance defects, hearing drill, correction of ocular defects, regulation of vaulted palate and crowded teeth, and numerous other defects may require careful attention if the child is to catch up his more fortunate companion who has not been hampered by years of obstruction. The operation removes the obstruction, but he has to overcome, often with difficulty, many of the results of the previous deficiency. In laying such stress on the influence of obstruction in producing hypertrophic or hyperplastic processes, it is not my wish even apparently to ignore other factors in the pathogeny of adenoids such as unresolved catarrhs, specific fevers, syphilis, struma, soil, climate, atmosphere, rickets, feeble breathing, and low vitality; but it is my deliberate opinion that if perfect nasal respiration be restored, in many cases, if the child is put under ordinary favourable hygienic conditions, almost miraculous improvement will follow; but all the care and attention directed against the other factors will prove unsatisfactory or fruitless if the nasal obstruction is ignored. Not that all cases of obstruction by any means require a formal operation if taken early. But it is far better to operate too early or for minimal obstruction than too late or not at all; but in order to prevent a long-standing obstruction during growth from imprinting itself indelibly upon the frame and features we must always have in view not only the removal of adenoids, but ensure the complete functional efficiency of the nasal channels as a whole.

In conclusion, I would remind you that prevention is better than cure, and that if in our field of work, as in others, we have knowledge of causative factors of disease, we can in many cases eliminate and prevent them. Just as in general medicine and surgery the highest achievement is the prevention of disease and deformity, so in our special areas of work we should aim at developing the prophylactic aspect of our subject and in diffusing the knowledge thereof broadcast. In this way, when a morbid process has been originated and detected, it can be corrected at an early stage. In this connexion I firmly believe that the greater recognition of the influence of nasal obstruction, in its earlier and slighter forms, in producing those catarrhal changes which extend to the ear, is destined to play a great part in the future in the prevention and arrest of deafness and other disorders in an early stage. As the constant dropping of water wears away the stone, though imperceptibly, so does the constant action of fall of air tension in a stenosed nostril make its result evident sooner or later. Physical laws are no more suspended in our field of work than in any other. It behoves us resolutely and firmly to apply scientific facts, and to concern ourselves no less with the beginnings of disease and its prevention than with the highest developments of special technique.

## TROPICAL DISEASES.

### WEDNESDAY, AUGUST 1ST.

*Presidential Address.*

Colonel KENNETH MACLEOD, I.M.S. (ret.), Professor of Clinical and Military Medicine at the Army Medical School, Netley, President of the section, gave an address defining the Scope and Aim of the Section's Work. He said: Since the last meeting of this section events have occurred which have emphasised the significance and enhanced the importance of its work. The war in South Africa has stimulated into vivid reality the unity and solidarity of the British Empire. The imperial idea implies not only a community of interests—social, commercial, and political—between the mother country and her colonies and dependencies, but also a community of suffering; and as tropical conditions and tropical diseases prevail in Greater Britain to such a large extent

the study of these, as they affect both the governing and the governed, has come to be recognised as a matter of vital and cardinal necessity. This has been fully acknowledged by the able Minister who presides over the colonies and who has realised more clearly than any of his predecessors the immense importance of inquiry and education as regards tropical pathology and hygiene. The Government of India has also awakened from its torpor and taken thought and action in the same direction by encouraging research, training men in bacteriological methods, establishing laboratories, appointing commissions, and promoting special investigations. A knowledge of the pathology and pathogenesis of disease must obviously precede and guide preventive and curative effort, and it cannot be too loudly proclaimed that this knowledge can only be obtained by systematic scientific research. The days of casual and statistical observations and dissertations have gone and it is now universally understood that nothing will avail for the solution of pathological problems except the undistracted work of trained agents provided with ample opportunities and appliances. The South African war has forced into prominent and painful attention two diseases which, although they cannot be called tropical diseases, manifest themselves with special severity as regards incidence and fatality under tropical conditions—namely, enteric fever and dysentery. That enteric fever existed in South Africa and was apt to prevail in South African towns and cantonments during the summer months was well known and its appearance among the troops engaged in this war was fully anticipated, but the excessive prevalence of the disease in a country and climate with a reputation for exceptional healthiness has come as an unpleasant surprise. No doubt the circumstances and exigencies of warfare are mainly responsible for the heavy tribute of sickness and death which enteric fever has levied. War shares with famine the malignant powers of enhancing the susceptibility to whatever infection happens to be present at the place and time. Enteric fever has been in grim evidence during recent wars on the Indian frontier and in the Egyptian Soudan; but malaria, cholera, yellow fever, and dysentery have on other occasions been stimulated into disastrous activity by war. So with famine: malarious disease, small-pox, diarrhœa, dysentery, and relapsing fever have attended or followed it, and at the present time cholera and plague are raging among the famine-stricken in India. The infection of enteric fever seems to be ubiquitous, portable, and peculiarly facile and subtle; and perhaps the most urgent question of the hour is how to mitigate its prevalence in the British army, in which in times of peace it causes one-third of the total mortality. It is important to note that a very marked contrast exists between the ordinary incidence and mortality of the disease in temperate and tropical or subtropical countries—in England and Canada on the one hand and in India and Egypt on the other. A similar contrast appears in the French army stationed in France and in Northern Africa. How much of this great excess is due to tropical conditions, topical and climatic, and how much to remediable sanitary defects, it is not easy to say, but side by side with the excessive suffering of the army in India we are confronted with the remarkable fact of the immunity of the native population. Whether a similar immunity exists among indigenous races and habitual residents in South Africa is an interesting question. Evidence seems to indicate that it is so. The native immunity in India, though not absolute, is undoubted; its cause has not been satisfactorily ascertained. It has been attributed to habituation to minute doses of the contagium, to protection conferred by attack during infancy and childhood, and to racial resistance acquired in the course of generations through both these influences. Some experiments by Freyer and others indicate that natives give positive reactions to Widal's test, but more extended and exact investigations on this point are desirable. It is quite certain that the immunity of natives is not due to superior sanitary conditions. Whether a similar immunity, temporary or permanent, can be engendered in European subjects by a process of inoculation such as has been devised by Professor Wright of Netley, and practised on a large scale among soldiers proceeding to the seat of war, is a question the reply to which is awaited with eager anxiety. Some figures obtained from Ladysmith have been published by Professor Wright which seem to show that some immunity is conferred by these inoculations, but though encouraging they are by no means demonstrative. Similar procedures for creating an immunity against cholera and plague initiated by Professor Haffkine have in India been attended with satisfactory results. But although a certain measure of preventive success has been obtained by these inoculations the employment of them appears at present to be practicable and useful only as an emergent expedient in the presence of a serious outbreak, and the prevention of cholera, plague, and enteric fever on a large scale must apparently be essayed on other lines and by other methods. Dysentery has been very rife in the South African army, but the disease has exhibited mostly a mild type and has been amenable to treatment. The persistence of plague in India and the appearance of the disease for the first time south of the equator—in Mauritius, South Africa, South America, and Australia—are events deserving of special notice. The disease has during its present prevalence confined itself mostly to warm and hot countries, and, though not exclusively a tropical disease, or apt in the tropics to be at its worst when conditions are most typically tropical, it appears to find in tropical countries and circumstances the most favouring environment. It is curious to remark that while in India natives appear to be readily susceptible to the infection of plague, Europeans, though not absolutely insusceptible, exhibit a comparative immunity—the reverse of what happens as regards enteric fever. This immunity is doubtless what I venture to call a sanitary immunity, due to a purer personal domestic and social life and perhaps to circumstances and habits rendering admission of infection less easy.

I trust that I have succeeded by these discursive observations in showing that recent events have expanded the scope and aim of our work in this section, and it seems to me fitting that we should at the commencement of our sectional labours remind ourselves of what these are. Our concern is not only with exclusively tropical diseases, many of them strangely named and imperfectly investigated and understood, which may be encountered and contracted in hot places where Europeans are compelled to reside for purposes of protection, administration, or commerce, and are not as a rule met with outside the tropics. More important are those diseases, originally or essentially tropical, which may be disseminated by intercourse with the tropics and may prevail for a time in extra-tropical localities in which they are not habitually present; and, finally, there are the diseases which are not specially tropical but which are liable to be aggravated in prevalence or severity by tropical conditions. These three classes represent a wide field of research, and, in addition, interesting questions arise as regards diseases which, common elsewhere, are rare or unknown in tropical countries. The field of study thus presented has its scientific and humanitarian aspects, and its cultivation has become an essential part of the business of imperial administration. It embraces not only acute infections and the sequelæ or constitutional incapacities resulting therefrom, but includes also those conditions affecting health and life which are vaguely designated as climatic, remediable only by adaptation, or which arise from sanitary defects or neglects capable of more easy amelioration. Hygienic improvements, personal, domestic, and social, have undoubtedly raised the standard of health and the value of life in the tropics, and residence and service in hot countries offer fewer and less formidable risks than they did in times past, but behind the question of individual impunity looms the question of colonisation or the continued vigour and vitality of the race when transplanted from temperate to torrid zones. The solution of these weighty problems constitutes the reason and purpose of our distinct sectional existence.

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## THE NAVY, ARMY, AND AMBULANCE.

### WEDNESDAY, AUGUST 1ST.

*Presidential Address.*

Inspector-General BELGRAVE NINNIS, M.D., R.N., took as the subject of his Presidential Address the Treatment of Wounded at Sea. It appears to me, he said, a happy omen that the inauguration of the Navy, Army, and Ambulance Section should take place at a time like the present, when the great war—now we trust nearly at an end—has directed special attention to its three sub-divisions—namely, medicine and surgery, in relation to the services, and ambulance in connexion with both, and likewise with civil life, particularly in large towns. A goodly supply of papers on these and kindred subjects will claim your attention, but I notice with

regret the absence of one on a subject which I consider would be well worth the trouble of writing—namely, on the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action. Now, before I enter upon this subject, I should like to make a few remarks on the light in which the naval medical officer is regarded by his fellows in civil life. Experience of the medical press, extending over a somewhat lengthened period, has left the impression on my mind that there is a belief amongst our brethren in civil life that the naval medical officers, taken as a class, are either behind the times professionally or are credited (from lack of zeal) with neglecting to avail themselves of modern discoveries, both in medicine and surgery, and that this is due in great measure to absence for lengthened periods from the schools. If I have rightly interpreted the meaning conveyed in the medical press, I trust that you will believe me when I state that you do us an injustice. It is true that from the very nature of his calling the naval medical officer is away at times for a period of three or four years; but, on the other hand, it should be borne in mind that there are sick in other countries besides Great Britain; and studying familiar diseases under different climatic conditions, or cholera, yellow fever, plague, and other diseases in countries where they are endemic, with the methods of treatment adopted by those who have lived the whole of their professional life in their midst, and modifications in some ordinary operations and substitution of new ones amongst the profession abroad, is surely worth something. Operations at foreign hospitals can always be attended, and practitioners and hospital surgeons are, in my experience, ever willing to answer questions and to show you their cases where possible. I have not said anything about his own patients, which, if his ship is a large one, supply him with a heterogeneous practice in addition to a capital operation occasionally. From what I have said it should be seen that the naval medical officer need not of necessity get rusty. I have not mentioned that in addition he has the medical press, foreign as well as English, or that on his return home provision has been made for seniors and juniors alike to pass through a post-graduate course at the metropolitan hospitals of Great Britain and Ireland.

Now let us return to the question of the means at the disposal of the naval medical officer for the treatment of the injured on board a man-of-war, more especially during an action. To grasp the situation fully it must be borne in mind that the essentials of a fighting ship may be said to comprise the largest percentage of armament, offensive and defensive, combined with capability of rapid motion and a steady platform. So far as our present knowledge goes these conditions can only be obtained at the expense of space; or, in other words, the more effective a fighting machine the ship is the less space is available for quarters and accommodation for the sick. Necessary as light and fresh air are to all of us, in the case of the sick on board ship it will easily be understood that this necessity is more urgent. But light and fresh air can only be obtained in sufficient quantity above the water-line, and to place the sick-quarters above the water-line, amidst the hurly-burly of a sea fight, traversed by projectiles and wrecked by exploding shells, is of course out of the question, even supposing that sufficient space could be spared. The alternative is treating the sick and injured below—which means a limited amount of fresh air and that almost invariably supplied by mechanical means—artificial light, rapidly deteriorating atmosphere, and the by no means unlikely intrusion of a torpedo or of the ram of a neighbouring ship. It will doubtless be said that this condition exists only during war-time and that under ordinary circumstances plenty of space could be found on deck. Sufficient accommodation is, as a matter of fact, already set apart for the treatment of the sick, with ample light and fresh air, cots, and other fittings of recent and constantly improving designs, and in some cases electric light; but it must be remembered that for the reasons previously mentioned these peace arrangements must be vacated in war-time. As permanent quarters for the sick on board a fighting ship, situated in such a position as to be freely supplied with fresh air and light, are practically an impossibility, it follows that the fitting up of apparatus and the means of utilising modern inventions are likewise practically impossible, and therefore the naval medical officer cannot avail himself of their use.

In fact, the naval medical officer is not to be judged by the ordinary standard. He works under great disadvantages. Take an ordinary operation. A moving patient on a moving table, a moving operator standing on a floor changing its slope laterally and fore and aft, assistants automatically altering their positions in relation to the patient in retaining the upright position or their equilibrium; tracheotomy by the light of a candle or lamp, the patient being in a cot, or possibly in a hammock; hernia to be operated on, possibly during bad weather, for it is the nature of things that on board ship accidents should most frequently occur when there is most motion and the decks are wet and slippery; fractures to be retained in position under the same adverse circumstances. As for lack of zeal a collection of the novel splints and appliances to be found on board ships on return from out-of-the-way foreign stations would testify not only to the zeal of the naval medical officer, but also to his resourcefulness, for, be it remembered, he cannot send into the next street for a second opinion or to the instrument-maker for special appliances.

In bringing these remarks to an end I may add that it is, I believe, intended in the future to supplement fleets and squadrons in war-time with hospital cruisers, not merely transports for the injured but veritable floating hospitals with steam power and fittings and appliances up to date. During an action these ships would keep out of range but sufficiently close to collect the wounded when the fight was over, and sailing under the regulations of the Geneva Convention would be free from molestation or capture.

## THE ANNUAL MUSEUM.

Little fault could be found in regard to the space placed this year at the disposal of the exhibitors. Indeed, there was space enough left for a smoking-lounge, and seating accommodation was also provided between the stalls. The Public Hall in Westgate-street proved to be well adapted for the display of foods and food products, drugs, mineral waters, &c., and those thousand-and-one accessories with which the exhibitor decorates his stall with consummate effect and in a manner calculated best to attract the visitor's attention. Surgical appliances, aseptic furniture, and miscellaneous articles of more or less interest to medical men were assigned a place in the old museum rooms a few doors away from the Public Hall, and here, again, the exhibitors contrived to decorate the rooms in an artistic and striking fashion. The section relating to foods and drugs was decidedly on a smaller scale than the same section in the annual museum at Portsmouth last year; but there was enough to keep the practitioner's interest maintained from start to finish. The trade aspect of this section is unavoidable, but the museum sub-committee are to be congratulated on having selected only those subjects for exhibition which are strictly of medical interest. We cannot help thinking, however, that a considerable improvement would be effected and a certain substantial attraction added if a few demonstrations of a strictly scientific character could be held at the same time and in the same place. It is decidedly irksome to be constantly urged on all sides to consider new formulæ, to handle new contrivances, or to taste new food products. The round of inspection again would be much more comfortable to the visitor if the exhibitors were less pressing in urging the claims and merits of the various exhibits which sometimes is done in such a way as to come very close to the method of the tout. There is always a great deal to interest the medical man on the stalls of this annual exhibition, and he can soon become acquainted with the important advances in the preparation and style of drugs, in the elaboration of special foods, &c., without much assistance from the exhibitor, who is tempted too often to volunteer voluble information of a quite superfluous kind.

As on previous occasions we shall adopt the following classification of the exhibits, emphasising as far as possible those subjects of special novelty or which possess a special interest:—I., Drugs; II., Foods and Food Products; III., Sanitary Appliances, Disinfectants, &c.; IV., Surgical Instruments and Appliances; V., Mineral Waters, Beverages, &c.; VI., Publications; and VII., Miscellaneous.

### I.—DRUGS.

In taking a general view of this important section of the museum two facts were noticeable—(1) that the tide of synthetics is steadily abating, and (2) that apparently little further departure has been made in regard to new administrative forms of medicaments. Certain organo-metallic preparations seem now to occupy the

position of novelty which some years ago was held by the coal-tar synthetics. It is easy enough for the organic chemist to elaborate new organic compounds, so abundant and suggestive are the materials at his beck and call; but some check, perhaps, has been placed on the successive production of these compounds by the action of the profession. Whilst recognising the value of many synthetics physicians have not failed to discountenance the indiscriminate placing upon the market of scores of complicated organic preparations the very multiplicity of which operates against determining their pharmacological value with that exactness which in the true interest of therapeutics is desirable. Some interesting derivatives of certain alkaloids were shown by exhibitors here and there, which are claimed to possess decided advantages over the original alkaloid. As examples we may quote the ethyl carbonate of quinine known as euquinine, and heroin the diacetic derivative of morphine. Again, there were some excellent illustrations of improvements in the pharmaceutical preparation of extracts and in the isolation from their respective plants of more or less definite and therapeutically active bodies which may be called "resinoids." A considerable amount of research has been undertaken in this direction in the "Merrell" laboratories of the Wm. S. Merrell Chemical Company, Cincinnati, Ohio (47, Wilson-street, Finsbury-square, London, E.C.), with encouraging results. Attention has been chiefly directed to retaining the active properties of the drugs and eliminating the inert or often injurious principles. Amongst these preparations we may mention podophyllin resin and the resin of rattle root or black cohosh known as macrotin and a much more efficient preparation than cimicifugin. The same firm showed some excellent hydrastia preparations and some pure specimens of salicylic acid crystals made from oil of winter-green. The crystals thus prepared are perfectly definite and well formed, a fact which in a measure testifies to the purity of the acid. An interesting derivative of oil of winter-green occurs in the form of "iodozen"—a true iodine compound of the oil of winter-green which possesses powerful antiseptic properties, rendering it an agreeable and effective substitute for iodoform. A very interesting collection of pharmaceutical chemicals was presented to view on the stall of Mr. E. Merck of Darmstadt (16, Jewry-street, London, E.C.). This firm has recently come prominently forward in the manufacture of perfectly pure preparations, including the alkaloids and the salts of organic acids, and the active principles of plant extracts and certain other rare principles. Perhaps the best examples of the interesting series of organo-metallic preparations which have been recently introduced into medicine occurred amongst the exhibits of Messrs. Burgoyne, Burbidges, and Company of 12 and 16, Coleman-street, London, E.C. We have already dealt with them in our analytical columns. Collargolum, for example, is described as a water-soluble metallic silver, and hyrgolum as water-soluble metallic hydrargyrum, both of which are more effective than the better-known salts of these respective metals. The exhibit also included citrate of silver, which is said to have been used with marked success in the treatment of wounds, and likewise lactate of silver. Messrs. C. J. Hewlett and Son, of 35 to 42, Charlotte-street, London, E.C., had a very well-arranged and attractive display of their special preparations. Worthy of mention as comparative novelties are bromipin, described as an organic compound of oil of sesame, and containing 10 per cent. of bromine, though there is no evidence of the presence of this element according to taste and smell. It appears to afford a means of administering bromine without giving rise to unpleasant effects. Naftalan has already been described in our analytical columns, but we may repeat that it is a product of the fractional distillation of Armenian naphtha and has been used as an analgesic and parasiticide. Cases are recorded of eczema and other skin diseases which have been benefited by the application of this interesting substance. Attention has recently been drawn to monsonia, the drug derived from *Monsonia ovata*, as a remedy for dysentery, and the seeds of the *Plantago isphagul* have been used for the same purpose. Preparations of these vegetable products are made by this firm. Their exhibit included also many excellent antiseptic preparations and a useful series of test-cabinets for clinical use. The introduction of "cacodyls" into medicine marks an interesting and important departure in the safe and effective administration of arsenic. Sodium cacodylate appears to be the best form for the purpose. It has been administered continuously in large doses in the treatment of phthisis and in diabetes. It favourably influences the processes of nutrition. Messrs. Gilbert, Kimpton, and Company of 19, St. Dunstan's-hill, London, E.C., showed examples both of the acid and of the sodium salt. Glass bulbs are made containing five-sixths of a grain and the so-called "arsycodile" pills 0·025 milligramme of sodium cacodylate. An iron cacodylate is also prepared especially for the treatment of chlorosis and anæmia. This interesting non-toxic organic salt of arsenic serves as a remarkable example of the therapeutic difference determined by molecular structure. The same acid and its sodium salt were exhibited on the well-stocked and attractive stall of Mr. W. Martindale of 10, New Cavendish-street, London, W. An interesting series of glass capsules was a feature of this exhibit, containing respectively amyl-nitrite, carbonised amyl-nitrite, chloroform, ethyl bromide and iodide, and isobutyl nitrite. Again should be mentioned the conveniently designed test-cases for clinical work. These included the portable urine test-case and a case containing bacteriological reagents necessary for the detection of tubercle bacilli, diphtheria bacilli, typhoid bacilli, and other micro-organisms. An interesting novelty on the stall of Messrs. Oppenheimer, Son, and Company, Limited, of 179, Queen Victoria-street, London, E.C., consisted of "cerettes." These are flexible tubes containing ointments and medicated soaps, each cerette holding sufficient for one application. The contents may be easily expressed from a cerette after the manner of a collapsible metal tube. While the cerette provides against the deterioration of its contents through contact with air, it avoids the possibility of metallic impurity. Ointments and soaps may thus be preserved unchanged and, moreover, are clean for the purpose of application. The exhibit included also some interesting applications of the palatinoids. Amongst these may be mentioned, as instances of the particular advantage of this administrative form of drug, palatinoids containing animal substances, palatinoids of liquids and of tinctures. Foremost amongst the pharmaceutical products shown on the stall of Messrs. Zimmer and Company, Frankfort-on-Maine, was a splendid specimen, in needle-shaped crystals, of euquinine. This is ethyl carbonate of quinine, behaving chemically as quinine, and pharmacologically also, with the advantage, it is stated, of being free from so many of the objectionable effects of quinine. Side by side with this interesting quinine substitute was eunatrol, a chemically pure oleate of sodium contained in chocolate-coated pills. This substance has been used with advantage in hepatic disorder and is said to stimulate the flow of bile and to assist the elimination of gall-stones. Another interesting compound shown by this firm was urosine, a quinate of lithia which is said to have a solvent effect upon uric acid concretions. It is used also favourably in gout. Validol (by the same firm) is a liquid compound of menthol and valerianic acid in which the objectionable properties of each constituent disappear. It has been employed as a restorative, stomachic, and anti-neuralgic, and has been prescribed also in hysteria with advantage. The Bayer Company, Limited, of 19, St. Dunstan's-hill, London, and Ebberfeld, have been very active during recent years in introducing new organic salts, and on the present occasion an excellent collection of skilfully prepared specimens were presented to view, which included trional, a hypnotic of some value, tannigen and tannopine, both intestinal astringents, salophen, valuable in the pyrexia of influenza, aspirin, the acetic ester of salicylic acid, giving all the therapeutic advantages of the acid without the disadvantages, heroin, the diacetic ester of morphia and its soluble salt, the hydrochloride, substituted with advantage for morphia. Lastly the interesting compound of protein with silver known as protargol is worthy of mention as an excellent substitute for nitrate of silver in diseases of the eye and for application as an antiseptic in gonorrhœa. It is easily soluble in water. Messrs. Parke, Davis, and Company of 111, Queen Victoria-street, London, E.C., exhibited such a complete series of their special preparations as to necessitate the occupation of two stalls. Amongst the drugs introduced comparatively recently should be mentioned chloretone, a hypnotic, antiseptic, and local anæsthetic which we have already described in our analytical columns. The exhibit included also standard serums, animal extracts, and a variety of drugs standardised by physiological tests upon animals and others standardised by chemical assay. "Kelpion" is the name of new stainless, non-irritant iodine ointment; the oil basis

is emollient and rapidly absorbs carrying with it the iodine. A few minutes after application the presence of iodine may be easily recognised in the saliva. It provides an excellent means of applying iodine in its well-known forms without producing objectionable effects. The preparation is exhibited by the Kelpion Company of Norgrove-buildings, 59A, Bishopsgate-street, London, E.C. Specimens of the pure oil of mustard were shown by Messrs. J. and J. Colman, Limited, of Norwich and 108, Cannon-street, London, E.C. The oil is well known as an application in the relief of rheumatic affections. Specially prepared sinapisms were also submitted to inspection, as was also a special mustard bran for use in poultices. A very tastefully displayed stall was that of Messrs. Wyleys, Limited, of Coventry. It contained a number of excellent administrative forms, powders, pellets, capsules, and cachets, whilst special drugs were contained in gelatin-coated pills which were oval in shape. This firm is evidently alive to the requirements of modern medicine. Kutnow's Improved Effervescent Carlsbad Powder has been approved by experience as one of the best preparations for the treatment of chronic constipation. It is identical in composition with the salts of the Carlsbad spring. It keeps well on account of having been carefully desiccated. The exhibit included an anti-asthmatic powder and cigarettes, the fumes from which are said to give relief and to have no objectionable action upon the heart, as is sometimes the case with lobelia and datura tatula.

# Medical News.

**VICTORIA UNIVERSITY.**—At examinations held in July the following candidates were successful in the subjects indicated:—

SECOND EXAMINATION.

*A. Anatomy and Physiology.*—P. W. Ashmore, Yorkshire; C. H. Bromhall, Owens; Stanley Brown, University; Thomas Brown, Yorkshire; W. J. Cox, University College, Sheffield; J. A. Davenport, Owens; R. T. Dobson, University; W. P. Grant, Owens; H. S. Harling, Yorkshire; Rowland Heathcote, E. W. Henstock, Benjamin Herald, and G. R. Hitchin, Owens; E. F. Hoare, University; C. H. Hopwood and G. H. Leigh, Owens; Hugh McManus and William Rotheram, University; J. A. C. Roy, S. H. Ryan, W. F. Shaw, and J. M. Skinner, Owens; J. N. M. Sykes, I. C. Thorburn, and G. F. C. Walker, University; and M. S. Wood, Owens.

*B. Materia Medica and Pharmacy.*—R. A. H. Atkinson, J. B. Barnes, John Battersby, and A. N. Benson, Owens; J. P. Bligh, University; Alexander Boothroyd, Owens; Alan Boyle and W. E. Brierley, Yorkshire; Howard Buck and Laurence Clay, Owens; Richard Coates, Yorkshire; Reginald Collier and Thomas Coogan, Owens; Edward Cundall, Yorkshire; J. L. Falconer and J. P. Garlick, Owens; Ernest Gibson, University; Tom Glover, J. W. Hartley, and H. D. Haworth, Owens; S. L. Heald, Yorkshire; J. P. Henderson and Arthur Hendry, University; Benjamin Herald, Owens; W. E. Hewitt, University; Hubert Hodge and F. C. Hudson, Owens; C. A. Hughes, University; A. D. Hunt, Yorkshire; H. R. Hurter, University; Hamilton Irving, J. M. A. Jones, and W. H. Judson, Owens; E. W. Kemp, Yorkshire; George Laurence and J. T. Lloyd, University; T. W. Lonsdale, Owens; J. F. McCann, University; J. de V. Mather, Stuart Murray, R. T. A. Patchett, F. G. Pell-Ilderton, and Frank Robinson, Owens; William Rotheram, University; W. E. Rothwell, Owens; F. H. Salisbury, University; J. L. Schilling and W. G. Scott, Yorkshire; Harold Simms, J. M. Skinner, R. T. Slinger, and J. C. Smyth, Owens; J. W. Sowerbutts and Bertram Sluggitt, Yorkshire; R. H. Swindells, A. F. Thompson, A. M. Walker, Douglas Wardleworth, and E. M. Wilkins, Owens; Henry Woods, University; and A. R. Wright and William Wright, Owens.

FINAL EXAMINATION.

*Part I.*—E. M. Ashcroft, and F. H. S. Ashworth, Owens; Herbert Bates, University; S. W. Battle, Yorkshire; S. B. Brentnall, Owens; Henry Brown, Yorkshire; C. W. Budden, University; J. B. Cook, J. F. Corson, J. M. Cort, Alexander Cran, and E. N. Cunliffe, Owens; S. W. Davies, University; Tom Bastham, F. S. Fletcher, and Mercier Gamble, Owens; G. W. Gelderd, and V. J. Glover, University; P. H. Green, and J. W. Greenwood, Owens; Frederick Griffith, University; F. W. Harrowell, Yorkshire; A. G. Jackson, and R. E. Kelly, University; C. P. Lapage, H. F. Lee, and Charles Mackey, Owens; J. C. Mann, University; S. B. Mehta, Owens; J. S. W. Nuttall, and T. F. Pugh, University; P. A. H. Radcliffe, Yorkshire; H. H. Rayner, F. M. Rogers, F. R. Sawdon, and G. H. Shaw, Owens; Robert Smalles, Yorkshire; H. G. Tansley, Owens; A. R. Thompson, Yorkshire; George Unsworth, and H. C. Waterhouse, Owens; S. C. Wilkinson, Yorkshire; R. D. Willcocks, University; and B. M. Wilson, and J. G. Woolnam, Owens.

*Part II.*—Arthur Anderson, Owens; E. W. Anderton, Yorkshire; D. A. Ashton, Owens; Philip Benington and J. H. Billing, University; A. G. S. Broughton, Yorkshire; J. P. Brown, Owens; Robert Burnet, University; A. H. Capamagian, Daniel Cowin, and C. W. Crawshaw, Owens; J. L. Dimond,† University; F. H. Flack and C. R. Hall,* Owens; A. E. Horsfall, Yorkshire; E. C. Hulme, Owens; A. R. Jackson† and L. C. Johnson, University; Reginald Lawrence and C. H. Lee, Owens; S. F. Linton, University; B. C. Middleton and R. S. Nichol, Owens; A. S. Parkinson, Yorkshire; William Rigby, H. W. Russell, C. R. Schofield Herbert Terry, and A. G. Wilkins,† Owens; C. R. Willans, Yorkshire; and P. G. Williamson and W. A. B. Young, Owens.

* Awarded first-class honours. † Awarded second-class honours.

*Diploma in Public Health.*—J. J. Butterworth, M.B., Ch.B; F. J. H. Coutts, M.D.; A. S. Grunbaum; C. A. Hill; and W. F. Moore.

*Sanitary Inspection Certificates.*—W. Butler, Manchester Technical School; J. J. L. Clark, University; and A. Herringshaw, F. Wilkinson, and R. W. Willan, Manchester Technical School.

**UNIVERSITY OF EDINBURGH.**—On July 28th the following degrees were conferred:—

*Degree of Doctor of Medicine.*—Charles Crawford Aitken, Scotland, M.B., C.M.; Charles James Hill Aitken, Scotland, M.B., C.M.; ‡Hugh Llewellyn Apthorp, England, M.B., C.M.; ‡James Andrew Blair, Scotland, D.Sc., M.B., C.M.; ‡John Macdonald Brown, Scotland, M.B., C.M.; Alexander Brownlie, Scotland, M.B., C.M.; *Walter William Chipman, Canada, B.A., M.B., C.M. (*in absentiâ*); Frank; Herbert Aylen Clayton, England, M.B., C.M.; Frederick William Collinson, England, M.B., C.M.; ‡Horace Crankanthorp Colman, England, M.B., C.M.; William Craig, Scotland, M.B., C.M.; ‡Herbert William Crosse, England, M.B., C.M.; Arthur Dickson, Scotland, M.B., C.M.; †Charles Cromhall Easterbrook, England, M.A., M.B., C.M.; ‡Alexander Edington, Scotland, M.B., C.M. (*in absentiâ*); William Ernest Lloyd Elliott, Wales, M.B., C.M.; *David James Galloway, Scotland, M.B., C.M. (*in absentiâ*); William Alexander Gibb, Scotland, M.B., C.M.; Wilfred Ernest Gibbons, England, M.B., C.M.; ‡James Andrew Gibson, Scotland, M.B., C.M.; †Robert M'Lean Gibson, Scotland, M.B., C.M. (*in absentiâ*); Robert Wilson Gibson, England, M.B., C.M.; Thomas Gibson, Scotland, M.B., C.M.; ‡Harry Grey, Scotland, M.B., C.M.; George Pouncey Henderson, England, M.B., C.M.; †Thomas Alfred Hird, England, M.B., C.M.; Guy Bertram Hollings, England, M.B., Ch.B.; Edward Siddall Jackson, England, M.B., C.M.; Arthur Septimus Lawrence, South Africa, M.B., C.M. (*in absentiâ*); ‡William Duncan Lawrie England, M.B., C.M.; Henry James Ley, England, M.B., C.M.; ‡Peter Burden M'Nicol, Scotland, M.B., C.M.; ‡James Sackville Martin, Ireland, M.B., C.M.; George Victor Miller, England, M.B., C.M.; Ahmed Mirza, India, B.Sc., M.B., C.M. (*in absentiâ*); ‡Owen St. John Moses, Armenia, M.B., C.M.; ‡Bernard Ehrenfried Myers, New Zealand, M.B., C.M.; ‡James Nicoll, Scotland, M.B., C.M.; Harold Nuttall, England, M.A., M.B., C.M.; Ernest Stanley Nutting, England, M.B., C.M.; ‡Edward Lloyd Owen, Wales, M.B., C.M.; George Peterkin, England, M.B., C.M.; ‡James Coubro Potter, England, M.B., C.M.; Frank Grégoire Proudfoot, Scotland, M.A., M.B., C.M.; †Francis White Hope Robson, England, M.B., C.M.; David Richard Rowlands, Wales, M.B., C.M.; Gerald Alick Southwell Sander, France, M.B., C.M.; ‡James Duncan Slight, Scotland, M.A., M.B., Ch.B.; Alexander Campbell Smith, Scotland, M.B., C.M.; ‡John Nigel Stark, Scotland, M.B., C.M.; John Edward Thomas, Wales, M.B., C.M.; †Peter George Leeb-du Toit, South Africa, M.B., Ch.B.; and *David Waterson, Scotland, M.A., M.B., C.M.

* Awarded gold medal for thesis. † Highly commended for thesis.
‡ Commended for thesis.

*Degrees of Bachelor in Medicine and Master in Surgery.*—Maung Ba-Ket, Burma; John Brodie Boyd, Scotland; Oswald Arnold Gee, England; John Thomas Hurst, England; John Malcolm Jeffrey, Scotland; Robert Alexander MacKenzie Macleod, Scotland; §John Charles Mitchell, D.Sc., Scotland; Archibald Duncan Nimmo, Scotland; Robert Owen, Wales; and Miles Charles Carreston Seton, Scotland.

§ Passed with second-class honours.

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Robert Cunningham Affleck, Scotland; Henry Alexander, Ireland; Thomas Hood Wilson Alexander, Scotland; Eliza Matthew Anderson, Scotland; Mary Scott Anderson, Scotland; Henry Ernest Arbuckle, Natal; Robert Andrew Jacomb Asbury, England; Bernard Hugh Stanley Aylward, England; Albert Augustus Ayton, Jamaica; Alexander James Baird, M.A., Scotland; Harvey Baird, Scotland; Simon Alexander Ballantyne, Scotland; Leonard Dieckmann Hamilton Baugh, Jamaica; John Henderson Bell, Scotland; Joseph Mitchell Benson, England; Hubert Bishop, Trinidad; ¶Arthur Branfoot Black, Scotland; John Southey Bostock, England; ¶Orlando Charnock Bradley, England; Laurence Percival Brassey, England; James M'Culloch Leigh Brown, M.A., Scotland; Launcelot Bruce, Scotland; Adam Brydon, Scotland; George Farnie Buist, Scotland; George Berkeley Butt, Ireland; John Profeit Campbell, Scotland; Malcolm Campbell, M.A., Scotland; Samuel Marcus Dill Campbell, Ireland; ‖George Scott Carmichael, Scotland; Violet Alice Penrose Coghill, Ireland; John Craig, Scotland; Leonard Crossley, England; Horatius Bonar Dodds, Scotland; John Primrose Douglas, Scotland; Cyril Hartley Durrant, West Indies; William Eadie, England; Robert Sidney Ellis, Scotland; Cecil Henry Elmes, Ireland; Johannes Stefanus Enslin, South Africa; David Robert Evans, Wales; ¶Edward Ewart, Scotland; Drummond James Fergusson, England; Andrew Fleming, Scotland; Bernard Gilpin Forman, Scotland; Catherine Fraser, Scotland; Charles Fraser, M.A., Scotland; Alexander Frew, Scotland; ‖William Ernest Frost, Ireland; Yoshinobu Fukuda, Japan; James Stewart Geikie, Scotland; William Girdwood, South Africa; Arthur Evelyn Goldie, Jamaica; George Watson Guthrie, Scotland; George Henry Hanna, Jamaica; Frederick Hardie, Scotland; Norman Ernest Jasper Harding, England; Herbert Harris, England; Thomson Henderson, Scotland; Davis Heron, Ireland; Eleanor Hodson, England; Katie Welton Hogg, B.A., Australia; Henry John Hoile, M.A., Scotland; Lionel John Hood, Australia; William Hutchison, England; Francis Field Cunningham Jagger, England; Edward Bald Jamieson, Scotland; ¶James George Silver Jamieson, M.A., Scotland; James Crawford Kennedy, Scotland; Francis Kenneth Kerr, Scotland; Herbert Christian Keun, Straits Settlements; Servase Meyer de Kock, South Africa; George Ross Laing, Scotland; ¶Langworthy Laurie, England; Robert Gerald Leach, England;

Charles George Stretton Leeds, England; George Herbert Lewis, Wales; Robert John M'Clelland, Ireland; Christopher Birdwood M'Conaghy, Ireland; ¶John Gordon M'Dougall, Scotland; Sara Lyle M'Elderry, Ireland; Elizabeth M'Elney, Ireland; Alexander Campbell Nicholson M'Hattie, Scotland; James Herbert M'Kee, Ireland; Alexander John MacKenzie, Scotland; Dundas Simpson MacKnight, Scotland; Robert Clephane Maclachlan, New Zealand; Harriet Joanna Campbell Maclaren, M.A., Scotland; Henry John M'Lean, New Zealand; Duncan Mackay MacLeod, Scotland; John M'Callum Anderson Macmillan, M.A., Scotland; Elizabeth Macrory, Ireland; ¶Arthur Anderson Martin, New Zealand; Harry Mason, England; Frederick Crichton Matthew, M.A., Scotland; Mary Jenny Menzies, England; Hugh Crichton Miller, M.A., Scotland; John Brownlee Milne, Scotland; Robert Macfarlane Mitchell, Scotland; Janet Ainslie Shiells Mouat, Scotland; James Munro, Scotland; Florizel de Lorme Myers, Jamaica; Horace Clulow Nixon, England; Caroline Elizabeth O'Connor, Ireland; James Cuthbertson Parker, Scotland; Norman Patterson, Scotland; Cuthbert Balfour Paul, Scotland; ‖John Pender, Scotland; Mary Churchill Pepper, England; John Boyd Primmer, Scotland; John Rowlands Prytherch, Wales; Samuel Rattray, Scotland; Percy Chambers Rayner, England; John Lawrence Rentoul, Ireland; Owen Lewellin Rhys, Wales; Catherine Mary Richardson, England; Lionel Charles Peel Ritchie, Scotland; Thomas Robert Robertson, Scotland; William Rogers, Wales (*in absentiâ*); Robert Ainslie Ross, South Africa; William Charles Ross, Scotland; Arthur John Ryle, Wales; Laura Stewart Sandeman, Scotland; Richard Akiwande Savage, West Africa; Thomas Boyle Hill Scott, Ireland; William Sibbald Scott, Scotland; Alexander Kenneth Smith Shand, Scotland; Hubert Dunbar Shepherd, England; ¶Thomas Scott Shepherd, England; Samuel Ramsay Sibbald, Scotland; Frederic David Simpson, Scotland; William Sloss, Australia; Harry Oswald Smith, Scotland; Charles Buchanan Snow, B.A., B.Sc., New Zealand; Charles Edward Southon, India; Hugh Meredith Speirs, England; Arthur Dunbar Spence, Scotland; Eleanor Rosina Sproull, Ireland; Thomas Grainger Stewart, Scotland; Clement Percival Strong, India; Frederic Troughton Thompson, Scotland; John Thornhill, Ireland; John Hardwick Thornley, England; ¶Alexander Trotter, Scotland; George Reynolds Turner, England; Karl Hermann Heinrich Uffmann, India; ¶William Wallace, England; Andrew Gordon Watson, Scotland; Allan Stewart Watson, England; Norman Septimus Wells, Burma; George Duncan Whyte, England; Frank Morewood Wigg, Australia; Alexander Jeans Williamson, Scotland; Tasman John George Wilson, Tasmania; Albert Edward Bathurst Wood, England; ‖Arthur Murray Wood, Scotland; ¶Garnett Wright, England; John Harold Wrightson, England; and Johannes Cornelius Zuidmeer, Cape Colony.

‖ Passed with first-class honours. ¶ Passed with second-class honours.

The following scholarships, prizes, &c., have been awarded:—

Ettles Scholarship, Robert Ainslie Ross, M.B., Ch.B.; Beaney Prize in Anatomy and Surgery, George Scott Carmichael, M.B., Ch.B.; Freeland-Barbour Fellowship in Anatomy, Physiology, and Pathology, John Pender, M.B., Ch.B.; Allan Fellowship in Clinical Medicine and Clinical Surgery, George Scott Carmichael, M.B., Ch.B.; Mouat Scholarship in Practice of Physic, Edward Ewart, M.B., Ch.B.; Stark Scholarship in Clinical Medicine, George Lyon, M.B., Ch.B.; Gunning Victoria Jubilee Prize in Materia Medica, Ernest Francis Bashford, M.B., Ch.B.; Gunning Victoria Jubilee Prize in Obstetrics, Alfred Charles Sandstein, M.B., Ch.B.; Buchanan Scholarship in Gynæcology, Frederic David Simpson, M.B., Ch.B.; James Scott Scholarship in Midwifery, William Ernest Frost, M.B., Ch.B.; M'Cosh Graduates and Medical Bursaries, John Charles Mitchell, D.Sc., M.B., C.M.; and the Anderson Henry Prize in Botany, Cameron Robertson Gibson. The Cameron Prize in Therapeutics has been awarded to W. M. Haffkine, C.I.E., for his work in preventive inoculation for plague.

**FOREIGN UNIVERSITY INTELLIGENCE.**—*Breslau:* Dr. R. Stern has been promoted to an Extraordinary Professorship of Internal Medicine. Dr. Paul Jensen has been recognised as *privat-docent* of Physiology.—*Chicago* (*Rush Medical College*): Dr. J. Loeb has been appointed Professor of Physiology in succession to Dr. Dodson.—*Freiburg* (*Baden*): Dr. Nagel, assistant to Professor Kries, has been recognised as *privat-docent* of Physiology.—*Greifswald:* Dr. Philipp Jung has been recognised as *privat-docent* of Midwifery and Gynæcology.—*Heidelberg:* Dr. C. Jung, Professor of Odontology, has resigned. Dr. Karl Gegenbaur, Professor of Anatomy, is retiring.—*Kiel:* Dr. Hans Hensen has been recognised as *privat-docent* of Internal Medicine.—*Leipsic:* Dr. Sandor Kaestner, *privat-docent* of Anatomy, has been promoted to an Extraordinary Professorship.—*Munich:* Dr. Oscar Eversbusch of Erlangen has been offered the Professorship of Ophthalmology as successor to Dr. von Rothmund, who is retiring.—*Philadelphia* (*Polyclinic*): Dr. James Thorington has been appointed Professor of Ophthalmology.—*New York* (*Post-Graduate School*): Dr. Charles W. Allen has been appointed Assistant Professor of Dermatology.—*Strasburg:* Dr. Martin Benno, *privat-docent* of Pathology and Pathological Anatomy, and Dr. Dietrich Gerhardt—son of the well-known Professor Gerhardt—*privat-docent* of Internal Medicine, have been appointed Extraordinary Professors.—*Tubingen:* Dr. Ernst Schwalbe of Berlin has been recognised as *privat-docent* of Physiology. Dr. Sarwey, Assistant Physician in the Female Clinic has been accorded the rank and title of Extraordinary Professor.—*Würzburg:* Dr. Ludwig Medicus has been appointed to the Chair of Pharmacy and Pharmaceutical Chemistry.

**SOUTH WALES AND MONMOUTHSHIRE SANITARY INSPECTORS' ASSOCIATION.**—A meeting of this association was held at Cardiff on July 26th, under the presidency of Dr. W. Williams. Dr. Walford read an interesting paper upon the Work of Port Sanitary Authorities.

**SUPERANNUATION ALLOWANCE.**—On the resignation of Mr. George Rigden, M.R.C.S. Eng., after 63 years' service as surgeon to the Canterbury Dispensary, he has been granted by the committee an annuity of £200 per annum.

**MEDICAL MAGISTRATES.**—Mr. H. G. Button, M.R.C.S. Eng., of Junee, Mr. A. E. Cox, M.B. Edin., of Forbes, Mr. W. J. Munro, M.B., Ch.M. Edin., M.R.C.S. Eng., of Glebe, and Mr. H. Chesson, L.R.C.P. Lond., M.R.C.S. Eng., of Pittsworth, have been appointed Justices of the Peace for New South Wales or Queensland as the case may be.

**PRESENTATIONS TO A MEDICAL MAN.**—Mr. Frank A. Arnold, M.B. Lond., late resident surgeon of the Memorial Hospital, Buluwayo, on the occasion of his leaving the hospital, was presented by the nurses with a clock as a token of their high esteem and respect.—Dr. Arnold was also the recipient of a travelling toilet case from the orderlies of the hospital.

**THE HOSPITALS OF ONTARIO.**—The thirtieth annual report of the hospitals of the province of Ontario shows that there are now in operation in this province of 2,000,000 people 50 hospitals directly receiving Governmental aid annually from the revenues of the province. The number of sick treated in these various institutions during the past hospital year numbered 26,825, exclusive of the thousands known as outdoor patients who receive advice and medicine from time to time. The total expenditure for the year has approached 500,000 dols. Of this amount the Government contributes a little over one-quarter. In addition to this there are some 40 houses of refuge in the province, 31 orphan asylums, 4 homes for incurables, 3 convalescent homes, 18 county homes for the poor, and 2 Magdalen hospitals, having an aggregate of 10,000 inmates. A glance over the report shows the number of certain diseases treated in these hospitals; for instance, there were 527 cases of appendicitis, 321 being male and 206 female; hysteria, 47 males and 224 females; locomotor ataxia, 28 males and 3 females; glaucoma, 17 males and 17 females; gall-stones, 41 males and 43 females; diabetes mellitus, 42 males and 14 females; epithelial cancer, 112 males and 83 females; goitre, 7 males and 36 females. The Toronto General Hospital admitted 2986 patients during the year; 3388 were treated during the year, of whom 206 died. The revenue of this hospital was $76,633.13 and the expenditure $79,911.61.

**METROPOLITAN HOSPITAL SUNDAY FUND.**—A meeting of the Council of this Fund was held at the Mansion House on Monday, July 30th, Sir Sydney Waterlow being in the chair. The report of the committee of distribution for 1900, which stated that this year 199 institutions had made applications for grants from the funds at the Council's disposal and that the distribution of £46,492 to 140 hospitals, &c., and to 54 dispensaries was recommended, was adopted. For the second time Mr. George Herring has given £10,000 to the Fund. Sir Savile Crossley has made a donation of £500. The only matter of unusual interest upon which discussion took place was a reference to the state of affairs at the National Hospital for the Paralysed and Epileptic, Queen-square, a matter which we deal with elsewhere. Extraordinary pressure on our columns prevents us from detailing the awards this week.—The following were among the principal amounts received on July 31st at the Mansion House in aid of the Metropolitan Hospital Sunday Fund: Sir Savile Crossley, Bart., a further £500 (tenth donation); Westminster Abbey, £161; St. Stephen, Westbourne-park, £138; Willesden Presbyterian Church, £48; St. Matthew, Forest-gate, £20; Wanstead Friends' Meeting, £38; Catholic Apostolic Church, Chelsea, £40; St. Margaret's, Lee, and Boone's Chapel, £51; St. Margaret, Barking, £38; Barnes Parish Church, £25; All Saints', St. John's Wood, £40; St. Barnabas, Clapham-common, £32; Camden-road Baptist Chapel, £20; St. John's, Lensford, £22; St. Matthew, Ealing, £33. The total now

exceeds £49,500. This year's awards will probably be paid on or about August 10th.

THE LATE MR. W. L. HUGHES.—Mr. William Lewis Hughes died at his residence, Carmarthen, on July 17th, in his forty-eighth year. Mr. Hughes was the son of the late Mr. Hughes of Trebersed. He was educated at Llandovery Grammar School and received his medical education at the London Hospital Medical School, qualifying as M.R.C.S. Eng. and L.S.A. in 1875 and 1874 respectively. After filling resident hospital appointments in London he commenced practice in Carmarthen and held for several years the appointments of surgeon to the Carmarthen Infirmary and to Carmarthen Prison; he was also district medical officer to the Carmarthen Union and surgeon to the 1st Volunteer Battalion the Welsh Regiment. At the time of his death Mr. Hughes was consulting surgeon to the Carmarthen Infirmary and medical officer of health of the town. Mr. Hughes, who was very popular in Carmarthen, will be much missed there, and by his early death a familiar figure in the district has been removed.

# Parliamentary Intelligence.

## HOUSE OF COMMONS.

THURSDAY, JULY 26TH.

*Arsenic Poisoning.*

MR. TENNANT asked the Home Secretary whether an inquiry was held in 1899 into the nature of employment in the extraction of arsenic; whether he had received a report upon the subject and, if so, whether it would be laid upon the table of the House; and whether it was proposed to amend the existing special rules relating to this employment.—Sir MATTHEW WHITE RIDLEY replied: I instituted an inquiry last year with regard to the health of the persons employed in certain works for the reduction of arsenic in Devon and Cornwall. I have not yet received the final report on this inquiry, but I gather from an interim report made some time ago that it is not likely that the establishment of any new special rules in these works will be necessary.

*The Local Government Board Vaccine Lymph.*

Mr. THOMAS BAYLEY asked the President of the Local Government Board (1) whether he had received information of the bacterial impurity of the vaccine lymph now or recently supplied for vaccination; (2) whether he was aware that certain brands of lymph, including that supplied by the Local Government Board, had developed colonies of germs, rendering their use improper for vaccination; and (3) whether he would prohibit the use of such lymphs in vaccination until freedom from contamination by them might be ensured.—Mr. CHAPLIN: In reply to the first paragraph, I have received no information as to the bacterial impurity of the vaccine lymph now or recently supplied by the Local Government Board which renders its use improper for vaccination. The answer to the second and third paragraphs is in the negative.

*The Use of Preservatives in Food.*

Mr. LAMBERT asked the President of the Local Government Board if he could state when the Departmental Committee on the use of preservatives in food might be expected to report; whether he was aware that summonses were being now issued by local authorities for adding to Devonshire clotted cream a small quantity of boric acid solely as a preservative; and whether he would communicate to such local authorities the undesirability of proceeding with prosecutions on this point until the report of the Departmental Committee had been issued.—Mr. CHAPLIN replied: I am informed that some delay has been occasioned by a series of experiments the issue of which will not be known for some months yet, but the Committee hope to complete their report by the end of this year. I understand that some local authorities have recently instituted proceedings in cases such as those referred to in the question. The Local Government Board, however, have no power to prevent such proceedings being taken, and they could not undertake to interfere with the discretion of local authorities in the matter.

*Famine Administration in India.*

In introducing the Indian Budget, Lord GEORGE HAMILTON made a long and interesting statement on the famine and the steps which were taken by the Indian Government to alleviate its consequences. He explained that the affected area in this case is greater than in 1876 or in 1896. In the former year the affected area was 205,000 square miles with a population of 36,000,000 and in the latter 275,000 square miles with a population of 52,000,000, while this year the area is 420,000 square miles with a population of 62,000,000. On the subject of administration Lord GEORGE HAMILTON said: The conclusion at which I have arrived from a careful study of the famine of 1896-97 and from my previous experience of the famine of 1874 is that the first essential of successful famine administration is to get the people to come in early, when they are still in good physical condition. If that is done then it is easy enough, but if, on the other hand, from various reasons, the people will not come on the relief works until the last stage of exhaustion and inanition, their vitality is so low that it is almost beyond the powers of the authorities to revive them. They bring with them the germs of disease which they communicate to healthy persons. Almost all the criticisms which have been hostile to the administration of famine relief have been devoted to the conduct of famine affairs in the province of Gujarat, and the province has not been afflicted by famine or drought for nearly 100 years. The mortality in Gujarat has been exceptionally high. It has been a source of the greatest solicitude both to myself and the Viceroy. I have been in constant communication on the subject, but it is exceedingly difficult to put your finger on any error which has been made. The expenditure per unit there on relief is higher than in any other part of Bombay. The works there are more numerous, and the number of additional officers drafted there is higher than in any other part of Bombay. The collection of the land revenue has been almost infinitesimal. Undoubtedly the result, so far as mortality is concerned, is not satisfactory. Whenever operations are over it has been the practice to appoint a commission of inquiry to investigate the various methods adopted. We shall have recourse to this procedure when the famine is over, and I hope that the collection of facts and the expression of opinions may be of use to the officials of the locality in dealing with subsequent outbreaks.

FRIDAY, JULY 27TH.

*Preservatives in Food.*

Mr. LAMBERT asked the Attorney-General whether, as a Departmental Committee was now scientifically investigating the question of adding preservatives to food, and would report by the end of the year, he would send an intimation to all judicial authorities before whom any cases of adding preservatives to Devonshire cream might be brought, that it would be expedient to adjourn the proceedings until after the Departmental Committee has given its decision.—The ATTORNEY-GENERAL replied: I have no authority to interfere with the discretion of the judicial authorities in the way suggested in the question, and it would be most improper for me to attempt to do so.

*Enteric Fever at Bloemfontein.*

Sir WALTER FOSTER asked the First Lord of the Treasury if the South African Commission would be able to inquire into the insanitary conditions which led to the outbreak of enteric fever and the consequent overcrowding of the hospitals at Bloemfontein.—Mr. BALFOUR replied: It will rest with the Commission themselves to determine the scope of their reference, but my own impression is that if the insanitary condition was due to the neglect of the Medical Department it would undoubtedly come under the cognisance of the Commission. If, on the other hand, it was due to military necessities—as, for instance, to the insanitary condition of the camp following on Paardeberg—I imagine it would not come under the survey of the Commission; but that is my own personal impression. The Commission have full liberty to determine their own reference.

*The Army Medical Department.*

This department was discussed at considerable length while the House was in Committee of Supply on certain supplementary army estimates.—Sir WALTER FOSTER spoke of the establishment being dangerously low. He said that the Royal Army Medical Corps was so diminished in number and so starved as regards medical equipment that if a division were to be sent to China now, and a German division of the same strength went out, it would be found that the German force had probably 50 per cent. more medical officers than our force—a state of things which, he said, would be discreditable to this country. In Africa many hundreds of brave fellows had been lost from the want of proper medical appliances. In China they had the danger of a disease more serious and loathsome than enteric fever. Plague was prevalent in that empire at the present time, and our troops would be exposed to sanitary dangers of the gravest kind. He hoped, therefore, that the War Office would be wise enough to take precautions against an outbreak of plague, or, at all events, would endeavour to minimise its effects as much as possible. He urged the War Office to consider the establishment of a reserve medical corps. It would not be difficult, he said, to get a large number of young medical men to hold themselves in readiness under very easy conditions to accept service in case of national necessity. Another point urged by Sir Walter Foster was that the War Office, in addition to sending out civil surgeons to South Africa, ought to have sent out civil physicians, men of experience in connexion with the fever hospitals of this country and others.—Mr. BURDETT-COUTTS complained of the Army Medical Department having no transport of its own and in this connexion called attention to the important services rendered by the Irish Hospital and the New South Wales Field Hospital, both of which, he said, have their own transport. He insisted that the Royal Army Medical Corps had been undermanned in medical officers, orderlies, and nurses, and said this was the explanation of the sick and wounded not receiving proper attention. On the subject of nursing Mr. Burdett-Coutts said the objection of the department at home to female nurses ought to be overcome.—Sir JAMES FERGUSSON said he had good reason to believe that often there had been a deficiency of articles of first necessity in the field hospitals because the medical officers were afraid to demand the things they wanted, and he submitted that such a thing would not happen if medical officers had now, as they used to have, a settled position from which they could not be removed except for some grave failure of duty.—Dr. FARQUHARSON emphasised the need for sufficient transport for the department.—Mr. GEORGE WYNDHAM, in his reply for the War Office, spoke of the recent changes in the Royal Army Medical Corps. The present Secretary of State, he said, had proposed an establishment higher than had ever previously existed, and had not been able to obtain the number of officers he required. It was said that was because the rewards offered were not sufficient, but, acting on the advice of his military advisers, he had offered inducements to tempt young physicians to enter the Royal Army Medical Corps, and was it fair, when it was matter of common knowledge that the great medical colleges had boycotted the corps for years in order to exact concessions as to rank—was it fair, when their wishes had been met to attract competent physicians, to attack the Secretary of State because he had not sufficient officers to meet the situation? He would not dwell upon this, for the point had already been threshed out, and what was to be said on either side was well known to the Committee. In view of the efforts made to increase the Royal Army Medical Corps, in view of the fact that the establishment voted had not been reached, he was convinced that it was a question of organisation that demanded most careful attention and most strenuous effort at the end of the war. But they could not do this now. It was his belief that no increase of pay, no exaltation of rank could be expected in times of peace to attract a sufficient number of young, keen, and ambitious men to fill up the places that must be

filled up in time of war. A young medical man did not care to bury himself at Colchester or any other military centre to attend to a few hundred men suffering from the customary ailments of this country; he was ready to work for little or no remuneration in the slums of a great city or in the wards of a great hospital; he wanted the practice and experience necessary for a successful career. Therefore he had himself come to the conclusion that instead of striving to expand the Royal Army Medical Corps in time of peace to be adequate for the time of war, it would be necessary to make application to the great hospitals throughout the country to know in time of peace what men would be ready for service in time of war, or when there was large concentration of troops what men would be ready to come forward and work for the army as they would work in a great city in time of pestilence.

MONDAY, JULY 30TH.

*Specialists for Invalided Officers.*

Mr. BAINBRIDGE asked the Under Secretary of State for War whether, if an officer invalided home from the seat of war required the attention of specialists while in a military hospital in England, it was the rule that such advice had to be obtained and paid for by the officer himself or his relatives.—Mr. WYNDHAM replied: If the medical officer in charge of a patient is of opinion that the assistance of a specialist is required the cost would be borne by War Department funds.

*Post-Graduate Course of Naval Medical Officers.*

Dr. TANNER asked the First Lord of the Admiralty if the long-promised concession in favour of naval medical officers which was stated some months ago to be settled for immediate working, viz., giving medical officers the opportunity of visiting and studying at metropolitan hospitals for a period of from three to six months on their return from a long term of foreign service on full pay was now working; and, if so, how many officers have availed themselves of the concession.—Mr. GOSCHEN replied: Naval medical officers have for many years past been permitted to pass through a post-graduate course at metropolitan hospitals. The number allowed has by the regulations of Nov. 1st last been increased from seven to 20 annually, but owing to the despatch of a considerable number of naval medical officers to the Cape and China it has not yet been found possible to allow this increase to take effect.

WEDNESDAY, AUGUST 1ST.

*Medical Acts Amendment Bill.*

The Bill framed by the General Medical Council to strengthen it disciplinary powers and to enable the universities and other medical licensing bodies to withdraw their diplomas from practitioners whose names had been removed from the Medical Register for misconduct, was at this sitting of the House withdrawn. It was withdrawn presumably because there was no chance of getting it passed.

## THE SOUTH AFRICAN COMMISSION.

Lord Justice Romer (President of the Commission), Dr. W. S. Church (President of the Royal College of Physicians of London), Professor D. J. Cunningham (Trinity College, Dublin), Mr. Frederick Harrison (General Manager of the London and North Western Railway), Sir David Richmond (ex-Lord Provost of Glasgow), and Major Tennant (secretary), commenced their labours on July 24th, when a statement (a summary of which was printed in our issue of July 28th) referring to the terms of reference and to the course to be adopted in taking evidence was made by the President. The Commission sat at Burlington Gardens.

Among the first witnesses called on were a number of departmental officials who detailed the routine followed in equipping the army. Surgeon-General JAMESON, Director-General of the Army Medical Department, said that immediately on the outbreak of war it was found that the medical *personnel* for two army corps and a cavalry brigade were exhausted. The number of medical officers in South Africa on Sept. 1st, 1899, was 32. During September 19 were sent out; in October, 138; in November, 102; in December, 38; in January, 1900, 44; in February, 48; in March, 50; in April, 10; in May, eight; and in June, 19; making a total of 508. This month 20 more were being sent out. The figures did not include the medical officers of colonial contingents.

Lieutenant-Colonel Johnston, Assistant Director A.M.S., and Major W. G. Macpherson, Deputy Assistant Director A.M.S., were also examined.

Lieutenant-Colonel J. S. COWANS, Deputy-Assistant Quartermaster-General, said that every requisition for extra medical men had been complied with.

General Sir HENRY BRACKENBURY, Director-General of Ordnance, said that in every case in which the goods were requisitioned they had been supplied, but they were dependent entirely on the trade for supplies and there was great difficulty in obtaining them in sufficient quantities. There had been no complaints of delay.

Colonel STEEVENS, Principal Ordnance Officer, and Sir RALPH KNOX, Permanent Under-Secretary, having given evidence, Colonel STIRLING RYERSON, Canadian A.M.S., British Red Cross Commissioner, said he had gone round the hospitals every morning to see what was needed and to distribute medical comforts. No complaints had been made to him. He thought that the abolition of the office of sanitary officer had had much to do with the enteric fever epidemic.

WEDNESDAY, JULY 25TH.

The first witness called was the Rev. W. H. OFORD who was in Bloemfontein from the entrance of the British troops until Lord Roberts left for the north. The hospital to which for two months he was attached, he said, was one of the worst in the district, because it was an old building. Everything was done to make it as comfortable as possible and there was no overcrowding. It was true that patients were lying on stretchers and mattresses and in some cases patients were not undressed for a fortnight. The patients in the hospital numbered 60, and the nursing was done by orderlies whom the men did not obey as they would female nurses. Everything was improved after the hospital had been in use a fortnight. In reply to a question with reference to other hospitals he said that he had never seen men lying in the mud.

Sir HOWARD VINCENT, M.P., described his visits to the hospitals in South Africa and expressed his belief that there was no real cause for complaint. There were some deficiencies but he could not speak too highly of the general arrangements.

Mr. WATSON CHEYNE, F.R.C.S. Eng., said that of course there had been over-crowding in the field hospitals, but that was the fault of equipment. He did not think the medical service was cut down to the same extent as the ordinary transport. At Paardeberg men were put under trees because there were few tents. Being out in the open did not affect the patients at all, for it was a beautiful time of the year. Personally he preferred being out in the open. The supply of dressings was rather short. The number of wounded was greater than expected or the ambulance service would not have been cut down, but the medical comforts were to be obtained. The only hardship was the long distance the men had to be sent back in ox wagons. The St. John Ambulance men were not good as orderlies owing to their want of training. At Driefontein it was quite impossible to collect the wounded for several hours owing to lack of ambulance accommodation. He was at Bloemfontein from March 13th till April 20th or 21st, during the greater part of which time the enteric fever epidemic was at its worst. He believed there were more cases in May. Within five days of reaching Bloemfontein Dr. Stevenson had arranged accommodation for 500 or 600 sick. There was a lack of beds but there was no particular fault to find with the houses used. Those who had no beds were accommodated on tressels. About April 20th they had had over 300 deaths in a 50-bed hospital. He thought there was a point which the medical members of the Commission might consider—namely, how far this epidemic was one of typhoid fever. The great majority of cases recovered in 10 days or a fortnight, and there were other characteristics which made him think that it was not typhoid fever. He had never heard that there were any men, sick or wounded, left without any covering at Bloemfontein, neither had he any reason to believe that men did not get the rations prescribed for them. The hospital accommodation at Kroonstad was bad. The orderlies tried to do their best, but many were untrained men, and if their best was not good that was another matter. No neglect of the sick and wounded came under his notice in any way. He was of opinion that an unnecessary amount of the time of the medical staff was taken up in administrative and clerical work.

A trooper in the City Imperial Volunteer Mounted Infantry was examined and said he fell sick at Sanna's Post and was treated with every possible kindness at Bloemfontein. The only discomfort he experienced was a ride in an ox wagon.

The Commission then adjourned its sittings in London till Monday, July 30th.

On Friday, July 27th, the Commissioners visited Netley and took the evidence of wounded and invalided soldiers from the front.

MONDAY, JULY 30TH.

The Special Commission appointed to inquire into the care and treatment of the sick and wounded during the South African campaign held another meeting on Monday, July 30th, at Burlington Gardens for the examination of witnesses. All the members of the Commission were present except Sir David Richmond.

Captain COUSENS of the City of London Imperial Volunteers was the first witness examined, and in reply to the CHAIRMAN (Lord Justice Romer) he said that when he got to Greenpoint camp he found that the men from the hospitals came there, and it was his habit to speak with them about their experiences, and he assured the Commission that he never heard the slightest complaint from them. On the way up country he fell sick from heart disease and debility just before Edenberg and along with six of his men he was taken to the Portland Hospital at Bloemfontein. He himself was in the hospital for eight days and he had not the slightest complaint to make about the treatment which he received. Everything was done that could be done. He saw no cause for complaint in any part of the hospital. He left the hospital on April 3rd and stayed in a hotel for six weeks during which time he visited No. 9 General Hospital. He visited this hospital twice and saw not the slightest cause for complaint. While at Bloemfontein he saw all sorts of men from his own and other regiments and he was sure that if they had had cause for complaint they would have mentioned it to him, but they made no complaint. He was sent down from Bloemfontein to Wynberg where also the arrangements were in his opinion excellent.

Mr. MURRAY GUTHRIE, M.P. for Bow and Bromley, was the next witness, and in answer to the CHAIRMAN he said that he went out to South Africa as secretary to the American Field Hospital, getting there in the beginning of February. He went first to Kimberley and afterwards left the hospital and went across to Bloemfontein, which place he reached about four days after Lord Roberts. The first hospital he saw in working order was at Driefontein after the battle at that place. There were about 430 cases in the field hospital when he saw it—nearly all wounded, but also some fever cases. He thought that the medical officers did everything that they possibly could do, but they seemed to be rather short of supplies, which was only natural in the circumstances. There were about 30 or 40 stretchers, and the rest of the men, of course, were lying on the ground. He spoke to many men and they quite realised that it was impossible for things to be otherwise; there was no grumbling. The worst cases were on stretchers and the remainder, Boers and British, were lying against the sides of wagons and the walls of houses. They were short of everything except meat, but this was unavoidable for it was the end of a march. One of the medical officers had been working for 13 hours on operations, and all of the medical men were working like slaves. The medical officers themselves had no better food than the wounded. He knew that because he dined with them and they had only the ordinary rations. A field hospital was not supposed to have 430 cases, and naturally they were short of everything—medical officers, orderlies, stretchers, tents, &c. He saw the convoy leaving. To the best of his recollection there were 15 ambulance wagons and some 30 or 40 bullock wagons, and the distance was about 30 miles over extremely rough roads. The weather was very hot and he remembered thinking that the wounded men would have a terrible journey. It would have been better if it had been possible to send them all in ambulance wagons. For himself he did not see any merit in the ambulance wagon except that it had a cover and the ox wagon had none. Of course, if a man lay down in an ambulance wagon he had a flat surface to lie upon whereas in an ox wagon there were ridges and rough places which could not be very agreeable to a wounded man. The medical officers said that they had very hard work, but they

were perfectly cheerful and they did their very best and made no complaints. All they were anxious about was to get the wounded down to Bloemfontein. This, of course, was a question of transport. If there had been sufficient transport the wounded would never have been left there, they would have gone straight into Bloemfontein. The ordinary ambulance wagons were not sent up, they were reduced by four-fifths, from 10 per cent. to 2 per cent. When he left Driefontein he went to Bloemfontein. At the latter place he resigned his appointment as secretary of the American Field Hospital and he occupied the office described in the army orders as "distributor of military comforts." His business was to receive and arrange for the transport of all goods sent out from England for the men at Bloemfontein. The appointment was given him by Lord Roberts and was under Government. He was at the railway station all day long and had an office there and a staff. He was generally there from six in the morning till at least six in the evening with intervals for meals. By-and-by things got slack in his office and when he had leisure he went about the hospitals and he supposed that he visited every one of the hospitals at Bloemfontein. At first he went casually, say to see an official or a patient he knew, but towards the end of April and the beginning of May he took special pains to visit the hospitals because he had heard a good deal about what was going on in them. The first hospital he saw was the Imperial Yeomanry Hospital, and though it had not been long established he could see that it was by far and away the finest hospital in South Africa. So much was this the case that he was almost shocked by the money spent upon it. The wine-glasses had the Prince of Wales feathers engraved upon them in gold and everything was absolutely perfect; it was just like Guy's Hospital put down in the middle of the veldt. The inference to be drawn from this state of things was that if a private hospital could do so well why could not the hospitals of the Royal Army Medical Corps do better than they did? A great many people said that the Corps had no power of organisation. He was taken over No. 8 General Hospital by the sister superintendent. This hospital was under canvas and was situated about a mile from the town. He did not see anything very bad. The marquees were good. He found men lying in the bell tents very crowded. They looked in rather a bad state and the sister superintendent said that it was impossible to go near them; he supposed that they were attended to by the orderlies. One man asked for his medicine and they hunted up the orderly. They found the orderly and he was convinced that the man was doing his best, but the work was too much for him. There were enteric cases and dysentery cases, and the patients were lying in their clothes. They had been in their clothes for days, and some of them had not been diagnosed. Some of them had been in these tents for 48 hours and certainly they were in a pitiable condition. These men were in the bell-tents because there were no marquees for them. As soon as there were vacant marquees the worst cases were taken from the bell-tents and put into them. When they reached the marquees the men were undressed and washed and properly nursed and dieted. There were not enough nurses for the marquees, to say nothing of the bell tents. He could not speak too highly of the work of the medical men of the Royal Army Medical Corps and the nurses and the orderlies. Although there might be black sheep amongst them he never came across one, and he never came across anybody who shirked his work. He heard no complaints from the men who were in the marquees. So far as his experience and knowledge went, though the hospital was short-handed there was no absence of medical equipment or medical comforts. As for the men in the bell tents they made very bad complaints. Some of the cases were slight cases for which the bell tent was good enough, but others were serious, and no doubt there were far too many in each tent. In answer to Dr. CHURCH, the witness said that the feature of the Yeomanry Hospital was that it had fewer orderlies and more nurses than the military hospitals. Some of the men in the bell tents were semi-conscious only; some of them were very ill indeed and greatly in want of attention. In answer to the CHAIRMAN, witness said that he saw every hospital in Bloemfontein. In one case several men complained to him about their diet; they said that it was not good, and they complained that there was no fresh milk. He considered that there was cause for complaint about the milk-supply in Bloemfontein. Except for one or two cases he did not remember being without milk for his porridge in the club or hotel where he stayed. He thought that the milk of the town ought to have been requisitioned for the hospitals, which never had a sufficient supply. He felt certain that if proper steps had been taken the necessary milk for the hospitals might have been got in the town. He did not think that the convalescents were well looked after in their journeys and he gave as an instance a train he boarded on its way from Bloemfontein to Cape Town, which had 268 patients in charge of a single doctor and no orderlies. The Irish Hospital, he said, was as near perfection as could be found. The reason why these private hospitals were so much better than the military hospitals and why their death-rate was so much lower was that they had the power to refuse to take in more patients than they could look after properly. They might accept a few more patients than they were intended to accommodate, but they were never overcrowded. The patients whom they refused had of course to be sent to the military hospitals. In answer to Professor CUNNINGHAM witness said that he was of opinion that the medical officers, orderlies, and sisters connected with the Royal Army Medical Corps did everything that was possible with the resources at their command to make the patients comfortable, but he thought more might have been done by the higher authorities of the service. In the shops of Bloemfontein there was much that ought to have been bought immediately by the medical authorities. They could have had 25 or 30 mattresses turned out every day which would have been of great assistance in the hospitals and he knew that blankets were bought by private individuals and presented to the hospitals. In his opinion every blanket in the town ought to have been bought by the medical authorities. He thought that the principal medical officer ought to have looked after such a matter. He ought to have requisitioned every single thing in Bloemfontein which would be of any good to the hospitals, and he (Mr. Murray Guthrie) was perfectly certain that if he had done so he would have got a great many things. Not only so, but there were many buildings in Bloemfontein which might have been used for hospital purposes. One morning he was on the station platform about six o'clock on the look-out for some trucks which he expected. He walked along the line some distance and came across an open truck with 15 men in it. He looked at them and passed on, the sight being a common one. About 8 o'clock the truck was moved up to the platform close to his siding and he thought that the men were going to be taken out, but when he came back from breakfast about 9 o'clock or half-past 9 the truck was still there. At half-past 10 o'clock he asked the railway staff officer whether the men were going to be taken out and he said that it was none of his business and that he had no men to move them. A few men loafing about the station were picked up and the sick men were moved from the truck and ranged along the platform on the ground against the wall. They were all lying-down cases. Some of the patients were suffering from enteric fever and some of the cases were not diagnosed. Of the 15 there were eight who were stretcher cases. About 11.30 one of the men had his lips absolutely black. Witness asked one of them the history of their journey and he gave it to him. They had been upon an average about 48 hours in coming down to Bloemfontein from different places. There were eight cases which were certainly bad ones, and he gathered from the man in charge, who was not a hospital orderly, that the eight men had had among them during the 48 hours two tins of condensed milk. Witness opened one of his cases and gave the men bovril and milk. At two o'clock the men were still on the platform. Not the slightest attention had been paid to them. This was in May; not at the beginning of the campaign. He communicated with the principal medical officer, who told him that he had not been advised of the despatch of the men. He said that the civilian doctors constantly neglected to advise him of the despatch of patients, and it was not until ten minutes to 3 o'clock in the afternoon that the men were taken to one of the hospitals. This was not at all an uncommon case; it was a case that occurred almost every day. In answer to Dr. CHURCH he said that it was nobody's business to send a message to a general hospital that the men were at the station, and in answer to Mr. FREDERICK HARRISON he said that the railway staff officer had to see to the despatch of the train. He understood that since then a medical officer and an orderly had been placed at the station. In reply to the CHAIRMAN he said that when he went to Pretoria he had a conversation with Sir William Thomson, head of the Irish Hospital, who told him that things were in a bad way there, and that in the Irish Hospital they were very short of things and had 50 men lying on the ground. On June 14th he visited the seven hospitals in Pretoria and found them short of everything. He consulted the manager of the Natal Bank and asked him if he would be willing to form a committee to provide the material required, provided witness could get the sanction of the commander-in-chief. He consented and witness received the sanction of Lord Roberts. They set to work and got from the shops of Johannesburg a whole trainload of things which were distributed among the hospitals. No steps had been taken to buy anything either in Johannesburg or Pretoria by the medical authorities. The proper course of these authorities would have been to buy up everything instead of waiting for supplies to come up from Cape Town. That was what the Army Service Corps did when they entered a town, and in consequence they lacked nothing.

Mr. R. E. LAUDER, the next witness, said in course of examination that he went out in charge of the Southampton Ambulance Corps, and after being attached to No. 5 General Hospital at Greenpoint camp he acted in a stationary hospital on the Orange river. Afterwards he went with the mounted troops to Kimberley. In all his experience he saw no reasonable cause of complaint. He confessed that things were not always so desirable as one could wish or as one found them in a civil hospital, but if he were asked whether all the resources at command were utilised he would reply in the affirmative. When engaged in outpost duty near Bloemfontein he found great difficulty in getting milk for the patients.

Dr. W. M. RUSSELL, senior house surgeon at Kimberley Hospital, said that he was about two years at Kimberley and went through the siege. During the siege they had a good number of sick and wounded and they were all fairly well cared for having regard to all the circumstances. They had plenty of drugs and surgical appliances and everything else pertaining to a hospital. The only serious drawback they had was that towards the end of the siege they experienced some difficulty in getting milk. After the siege they found it necessary to open up certain buildings as temporary hospitals, the Kimberley hospital not being able to accommodate all the patients. About 40 buildings were selected as temporary hospitals, and they were filled fairly rapidly with cases of enteric fever and so-called dysentery. Of course there was a little trouble immediately after the siege, but the Red Cross Society sent up a train with supplies.

Mr. FREDERICK TREVES then gave evidence. He explained his position with General Buller and the movements of his hospital, which he described as an advanced field hospital. The hospital, he said, worked admirably. There was an immense rush of work after the battles of Colenso and Spion Kop. Some of the orderlies were indifferent, but on the whole they worked well. No doubt there were many things that stood in need of improvement. The difficulty was the difficulty of transport. For one month they were 26 miles away from a railway and such difficulties as presented themselves arose from transport. His hospital had its own transport. It was a field hospital originally equipped for 300 patients and they ultimately had to take in 800, but from Frere to Potgieter's Drift and back to Chieveley they had their own transport consisting of 260 oxen and 60 mules. They found this arrangement to work admirably and not to conflict in any way with the military arrangements. They were admirably situated in the matter of medical equipment. At times they were short of food—as, for instance, at Spearman's camp—but it was nothing unreasonable and he heard no complaints. The nursing problem was the most serious of all. He quite acknowledged that it was impracticable to have female nurses in a field hospital. He had his own two nurses with him, but that was possible because he had special provision for them. At a stationary hospital female nurses would be of the greatest possible service. There could be no doubt that they were short of utensils, this being due in their case to an oversight—they were lamentably short in this respect. He could say most emphatically that he never came across a serious case of neglect of the sick or wounded. In his opinion the wounded or sick soldier preferred the ox wagon to the ambulance and for this reason that the former was made for the country and ran smoothly. He went over all the hospitals at Pietermaritzburg and found in them no reasonable cause for complaint and he might say the same thing about Durban.

Dr. C. W. J. CHEPMELL, who acted as an Assistant Commissioner of

the Red Cross Society in Natal, gave evidence to the effect that the military hospitals in that colony offered no reasonable ground for complaint.

Nursing Sister BARWELL said that she went with the Army Nursing Reserve to South Africa, reaching Bloemfontein on March 24th. On April 2nd a considerable number of wounded were brought from Sanna's Post to Gray's Hospital where she was employed and new rooms had to be opened for their accommodation. For several days it was impossible to provide these rooms with beds and the patients were placed upon stretchers. There were two medical men and six sisters, the patients were well looked after, and there was no ground for complaint, except, perhaps, that they were badly off for some of the minor equipments.

Dr. A. CONAN DOYLE, the last witness of the day, stated that his experience was confined to the hospitals at Bloemfontein. He arrived in the town on April 2nd and stayed three months. He was connected with the Langman Hospital, which was equipped for 100 patients but at one time received 150 patients. He was sure that the pressure on the army hospitals was many times greater than that on the Langman because the former could not refuse patients. He and his colleagues were so busy that when they got out of their own hospital they did not think of going to visit another, but so far as he knew he did not believe that anybody could be charged with neglecting the sick and wounded. There were some defects but they were due to the wishes of the medical staff being overruled for political considerations. In other words, he held that there should have been less consideration for the Free Staters and more for the sick and wounded.

The Commission then adjourned.

TUESDAY, JULY 31ST.

The Commission met again to-day, when there was a full attendance of members, Lord Justice ROMER presiding.

Mr. W. BURDETT-COUTTS, M.P. for Westminster, presented himself for examination.

The CHAIRMAN explained to him that he and his brother Commissioners had read the articles in the *Times* and the speeches of the hon. Member in the House of Commons, and therefore it would not be necessary to go over familiar ground again.

Mr. BURDETT-COUTTS, in answer to questions by the CHAIRMAN, said that until he went to Bloemfontein he saw nothing to complain of in respect of the hospitals which he visited except in the case of the Woodstock Hospital. With regard to this hospital he complained of the site being badly chosen. Indeed, Surgeon-General Wilson himself told him that he was altogether dissatisfied with this hospital, that he did not think the building or the condition of it suitable for a hospital, that they had had to take it, that it was not, so to speak, a hospital of their creation; and witness, believing it to be a temporary expedient, abstained from mentioning the hospital in his letters. When he got back to Cape Town he found that the hospital had been improved and enlarged, and what he complained of was that it was not a proper place to take as the nucleus of a large general hospital. He arrived at Bloemfontein on April 7th and on May 1st he left for Kroonstad, returning to Bloemfontein about May 19th. Dealing with the state of things at Bloemfontein Mr. Burdett-Coutts said that the field hospitals reached that place in a more or less mutilated state. The field hospital described in his article was visited by him first on April 9th and he found it in a very bad condition. He did not think it right to describe it in his article because he considered it as more or less the outcome of the forced march. It was not until the railway had been running freely for nearly a month that he considered it fair to criticise the medical arrangements. With regard to No. 9 General Hospital, its tents and nothing else arrived at Bloemfontein on April 8th. These tents provided accommodation for about 800 patients. It was not until a fortnight later that the equipment for the tents came up and it was possible to put patients into them. His criticism had been, and was, that it would have been better to have sent up the tents and equipment for 400 patients in the first instance instead of sending up tents for 800 patients which were quite useless without equipment. In his letter which appeared in the *Times* on June 27th there was a phrase about "growing scenes of neglect and inhumanity." These words had been taken hold of and used in a sense which he had never intended. When he spoke of inhumanity he meant inhumanity which would arise from medical deficiencies. He had not the slightest intention of making any reflection upon the *personnel* of the Royal Army Medical Corps. He considered that their work had been magnificent and that they had performed their work in tremendous difficulties—difficulties which they ought never to have had to encounter. Examined next as to the state of the field hospital mentioned in this letter Mr. Burdett-Coutts said that the equipment in many respects might easily have been improved. All that was wanted for a mattress was a bag and something soft to put into it and if there had been the necessary initiative and energy in regard to such things he thought that beds might have been extemporised in a very few days for a large number of the patients. It was, of course, no hardship for a healthy man to lie on the ground but an enteric fever patient, aching and suffering, must have felt the ground very hard. Moreover, he had always understood that it was well to have a sick person raised off the ground. Many enteric fever patients passed the whole period of their illness in the field hospital. Serious cases could not be sent down to the town hospitals for the simple reason that the latter were crowded.

The CHAIRMAN: You say that there was want of initiative. Who was to blame for that?

Mr. BURDETT-COUTTS: I have endeavoured always to avoid putting blame upon individuals. In further examination witness said that in going through the bell tents he saw a man who the doctor told him was dying and witness could see that he was dying. He saw men lying in the mud. There had been torrential rain and it had got over the trenches and into the tents.

By Sir DAVID RICHMOND: He saw a large portion of the Russo-Turkish war and he was bound to say that he saw very much the same things at the front in Turkey as he saw in South Africa. Most of the statements he had received had been accompanied by a request that the name of the informant should not be given. In a few instances he had written to his correspondent and pointed out the protection and precautions referred to by the Chairman of this Commission in opening the proceedings, leaving it to him to decide whether or not he should tender evidence to the Commission. The statements which he had received came from various classes of people all of whom appeared to be convinced that it would injure their present or their future if they came forward with evidence.

The CHAIRMAN: There would be no injury. We should protect them amply and fully and we should be able to give them the necessary assurance.

Mr. BURDETT-COUTTS: How would you protect an officer, for instance, who considered that his future would be injured?

The CHAIRMAN: By not giving his name and not allowing his evidence to appear.

Mr. BURDETT-COUTTS: Will the evidence be seen by anybody?

The CHAIRMAN: Only by ourselves, and the evidence can be taken in such a way that nobody shall know that he has been examined.

Mr. BURDETT-COUTTS, proceeding with his evidence, gave figures to substantiate his statement in the *Times* letter that there were 20,000 sick and wounded in South Africa at the time of writing. No. 9 General Hospital he visited three times or more. He was struck by the absence of classification. The conditions of crowding were not so bad as in the field hospital to which he had referred, but a great many patients were together in what he considered a very unhealthy spot. The level of the hospital was low and a great remount compound was close to it and drained into it. When he arrived at Kroonstad he found the field hospitals with a great many sick in them. Four days after his arrival a large hotel was commandeered and made into a hospital, and this proving insufficient a Dutch church was also commandeered, and the staff of the field hospital of one of the brigades was taken to run these two hospitals. It consisted of three medical officers and six nursing orderlies in the hotel and four untrained orderlies in the church and among them they had to look after 300 patients. There were no medical comforts in these places and no beds, and none of the ordinary equipments of a hospital. A certain number of beds and mattresses were two days afterwards got hold of. He saw sick and wounded brought into the church and placed upon the stone floor in their uniforms with possibly a blanket underneath them. When these 300 patients were in the church and the hotel they had only two medical men to attend them, for the third medical man had his time taken up in trying to get things and to organise the place. What he felt about the matter was that they might have taken up on the march sufficient medical officers and orderlies and a light equipment which would have obviated the first 10 days of difficulty and pressure at Kroonstad. Before leaving Bloemfontein he bought a wagon and four mules. At the time there were four other wagons at Bloemfontein of which he had the choice, and the man who sold the mules to him said that he had 70 altogether. If the medical authorities had secured this means of transport they might have taken up medical men, orderlies, and light medical equipment. He himself had fresh milk at Kroonstad, but when he asked one of the practitioners whether he had any at the hospital he simply laughed at him. Witness wrote to the military secretary of Lord Roberts on the subject, calling his attention to the fact that the hospital had no fresh milk. In reply he received a letter stating that Lord Roberts, in company with his principal medical officer, had visited the hospital on the same day as witness, and that the principal medical officer had told Lord Roberts that the hospital was getting a large and increasing supply of fresh milk. One of the great difficulties of the situation was that the medical officers were not sufficiently resolute in asking for what they required for their hospitals. With regard to Woodstock he could present a witness who would say that operations were performed on the tables on which food was served, and that the utensils used for operations were also used for the feeding of the patients and that blood had been found on the edge of them. He could give the name of a witness who would say that at the convalescent camp at Greenpoint there were several dangerous cases of enteric fever and that the rations consisted of hard biscuit and bully beef. On the general question he thought that there was a great want of elasticity about the Army Medical Department. There were no reserves at home. He admitted that they could not maintain in time of peace the medical service required in time of war; but that made it all the more necessary to have a system capable of expansion when the necessity arose. There was, he believed, an objection in the department to female nurses and to the civil element altogether. If the system had been sufficiently elastic the three general hospitals at Cape Town could have been turned into civil institutions, and the military staffs set free to go to the front, which was their proper place. During the last 50 years the conditions of everybody had been enormously improved except those of the British soldier during a great war. His lot had not improved, and he himself did not know what medical treatment was, what it might be, and what it ought to be. If the British soldier were to be put on a gridiron and roasted, and to be told that that was the way to kill the germ of enteric fever, witness supposed that he would submit to the treatment, because the British soldier was brave and thought that bravery consisted of standing any hardships in sickness as in fighting. The opinion of witness was that they had no right to trade upon this ignorance and this bravery.

Private HAROLD MEADMORE of the Royal Horse Artillery gave evidence as to his experiences in various hospitals at Bloemfontein and Cape Town.

Sir WILLIAM MAC CORMAC, President of the Royal College of Surgeons of England, who was the next witness, gave to the Commission an account of the journeys that he made in the Cape Colony and Natal and the hospitals of one kind and another that he visited. The impression he received from seeing all these places was, he said, that the arrangements in general were simply admirable, and, he thought, would compare—and he spoke not without considerable experience—favourably with the arrangements of any previous campaign conducted by any nation in any part of the world. At Colenso, where he had the opportunity of seeing the three hospitals working in the field, there was, of course, very great pressure, but the pressure was absolutely inevitable, for it was impossible to provide for the cases that came in during and after such an engagement. In his opinion the pressure was met as well as it possibly could be met. Each field hospital had two operating-tables and these tables were in use continuously. The way in which the wounded were removed from the field on one occasion deserved, he thought, special notice; it was remarkable for promptitude. The whole of the wounded on the field of Colenso had been removed by about 3 o'clock in the afternoon of the day of the battle. He did not think that such a thing had ever happened before in war. The provision made for this was distinguished by remarkable foresight. The principal medical officer, Colonel T. G. Gallwey, with the knowledge that previous experience had given him, devised a plan whereby the services of some 1200 stretcher-bearers were obtained from among the refugees in Durban. Some of these bearers were perhaps not the most eligible members of society, but all these men worked exceedingly well and exposed themselves to all manner of risks and dangers. Some of them

were killed, many were wounded, and they worked for a wage of 5s. per day. They brought the wounded off the field by means of stretchers and brought them with the minimum of suffering. The less severely wounded were removed by ambulance wagons, which meant a terrible experience in a country where there were no roads but many stones. The hand carriage devised upon this occasion was the ideal mode of transport, especially in such a country. He should like to emphasise very strongly the fac that the principal medical officer in Natal availed himself of the opportunity which offered and organised, under the authority of General Buller, this ideal mode of transport which proved the greatest solace and comfort and saving of life to the wounded men. Another feature of the battle of Colenso was the hospital train, which was brought on to the field of battle and was under fire. This train was filled with wounded who were brought down to one of the stations on the line. Another thing was that in spite of the stress the operations in these field hospitals were conducted with every care, with the assistance of every modern appliance, and with the same precautions as those which were adopted at home, and really he thought credit and praise of no unstinted kind should devolve upon those men who did this work on the battle-field of Colenso. The wounded men came to the field hospitals ticketed with their names and numbers and the nature of their injury, which was of immense value to the surgeons. The result of the rapid evacuation of the field hospitals was that two days after the engagement all the men had been sent down to the stationary hospitals and the base hospitals or to the ships at Durban. This was a great contrast to his experience at Sedan, where there were men who lay upon the field of battle for three, and some for four, days before they received succour of any kind. He thought that there could be no doubt in the minds of those who watched the proceedings at the front that in a very trying emergency the medical officers met the duties imposed upon them in circumstances of extreme tension with a very complete success, and he knew from conversations with officers and men afterwards that they had the greatest confidence in the medical officers and realised that everything that could possibly be done for them had been done. As to the complaint about the prevalence of vermin he defied any person to prevent vermin in wooden buildings where soldiers were congregated. The only way to stop the vermin was the Chinaman's method of roasting pork—namely, to burn down the buildings. In the hospital bed he occupied at Sedan he had to endure not only bugs but also lice, and he had the same experience in the Russo-Turkish war. As to sanitary precautions in the camps, they had to remember that there were dust-storms and that the soldiers had to breathe the dust with which was mixed the excreta of the camp, and that caused a good deal of sickness. Everywhere the water was bad, and he did not think that any sanitary precautions could prevent a thirsty soldier after a long march from drinking the first water that came in his way. He was with the great march of Lord Roberts and no doubt the equipment was seriously reduced, but they had a mobile enemy to deal with and to catch him they had to be equally mobile. War was a cruel thing and the incidents of war were cruel, but the object of war was not the care of the sick and wounded—it was the winning of battles. Witness then quoted from his letters to THE LANCET and said he had nothing in these letters to withdraw or modify. He held to the opinions expressed in them in spite of subsequent criticisms by people who did not appear to know very much about war and its conditions. He thought that the medical conduct of this campaign, subject to the existing drawbacks which were inevitable, had been exceedingly good. He was sure that it would compare most favourably with the medical conduct of any previous campaign. In answer to Sir DAVID RICHMOND the witness said that there was no comparison between the medical provision in this campaign with that in the Franco-German war, so much superior was the former. The train in which he went down from the front in Natal was equipped with everything that was wanted. He saw no evidence whatever of friction between the officers of the Royal Army Medical Corps and the civil surgeons. In the Mooi River General Hospital there were a large number of comparatively young civil surgeons, and they and the army medical men were simply a happy family, free from the slightest trace of friction.

Captain ADAM, who accompanied the Indian contingent and was wounded near Dundee in October, gave evidence as to the state of things in the hospital on the neutral ground at Ladysmith, saying that there was not the slightest cause for complaint.

Lieutenant OSBORNE, one of the Australian volunteers, who afterwards joined the 16th Lancers, said that there was no cause for complaint about the Langman Hospital at Bloemfontein.

Lady CHAMPION DE CRESPIGNY stated that there were deficiencies in the hospitals at Kimberley. Men, she said, were kept lying on the ground outside and did not receive the comforts essential to their proper treatment. At Bloemfontein there was a boy who wanted wine and was told that he must buy it. In the train in which she travelled to Cape Town there were five wounded officers and 25 wounded men with no one to attend them. They had no food beyond what she gave them. Her opinion was that the medical officers should be given more power to get the things required by the patients under their charge.

Major BRIDGES of the Australian artillery said that he could not praise too highly the kindness and attention he received at the hands of the medical men and orderlies at Bloemfontein; he could not have been better treated in London. The only cause of complaint he had was that they gave him too much champagne.

The Commission then adjourned.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BERRY, R. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for Southport, Queensland.

BLACKBURN, E. W., M.B., B.Ch. Oxon., D.P.H., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Barnsley Beckett Hospital, vice J. Blackburn.

BLACKBURN, J., M.R.C.S., has been appointed Honorary Consulting Surgeon to the Barnsley Beckett Hospital.

BLAKE, STUART RYALL, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the No. 4 Sanitary District of the West Ham Union.

BOVILL, F. M., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Fourth Sanitary District of the St. Albans Union, vice F. M. G. Smith, deceased.

BROWN, G. H., M.B., Ch.B. Melb., has been appointed Officer of Health to the Lawlers Local Board of Health, West Australia.

BURCH, H. E., M.R.C.S., L.R.C.P. Lond., late Assistant Resident Surgeon, Memorial Hospital, Bulawayo, has been appointed Resident Surgeon at the Hospital, and Surgeon to the Depôt Troop of the British South Africa Company's Police, vice Frank Arnold, resigned.

BURKE, P. J., M.D., M.Ch. Irel., has been appointed Junior Resident Assistant Medical Officer of the Workhouse, Chorlton Union.

CAMPBELL, COLIN, L.R.C.P. Irel., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Saddleworth District of the West Riding of Yorkshire.

ELLIOTT, J. L., L.S.A., has been appointed Medical Officer of Health for the Cudworth Urban Sanitary District.

ELLIS, H. A., M.B., Ch.B. Dubl., has been appointed Officer of Health to the Bonnieville Local Board of Health, West Australia.

EVERED, A. C., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Quarantine Officer and Medical Officer to the Board of Health at Albany, West Australia.

FORREST, W., M.B., B.S. Durh., has been appointed Medical Officer for the Newbottle Sanitary District of the Houghton-le-Spring Union.

GARDE, T. W., L.R.C.P., L.R.C.S. Edin., has been appointed Visiting Surgeon to the Westbrook Reformatory, Brisbane.

GILLIES, J., M.B., M.S. Edin., has been appointed, *pro tem.* Medical Officer at Ingham, Queensland, and Visiting Surgeon to the Police Gaol there, and also Health Officer at Ingham.

GRAY, F. J., L.S.A., has been appointed Medical Officer for the Third Sanitary District of the North Witchford Union, vice A. J. G. Waters, deceased.

HANLEY, THOMAS FRANCIS, L.R.C.P., L.R.C.S., L.M. Ed., has been appointed Medical Officer for the Dorset County Police at Gillingham, vice T. Woods.

HARKEN, C. F., M.B., Ch.B. Dubl., has been appointed Officer of Health and Public Vaccinator for the Shire of Chiltern, Victoria, Australia.

HENRY, A. G., M.B., M.Ch. Syd., has been appointed Medical Officer to the Public Institutions at Parramatta, New South Wales.

HENRY, JOHN P., B.A., M.D., B.Ch., has been appointed an Honorary Ophthalmic Surgeon to the Italian Hospital, Queen-square, London, W.E.

HOYLE, FRED., M.B., Ch.B. Vict., has been appointed Senior Resident Assistant Medical Officer of the Workhouse, Chorlton Union.

JACK, ALEXANDER, M.B., Ch.M. Glasg., has been appointed *pro tem.* Official Visitor to the Reception House, Townsville, Queensland.

KANE, R. E., L.R.C.P., L.R.C.S. Edin., has been appointed Assistant Medical Superintendent to the Hospital for the Insane, Goodna, Queensland, vice R. A. Meek, resigned.

KNOX, R. G., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Eighth Sanitary District of the Bath Union, vice C. E. S. Fleming, resigned.

LUDLAM, ERNEST B., B.Sc., has been appointed Demonstrator of Chemistry at University College, Bristol, vice D. H. Jackson, resigned.

MCNISH, JAMES, M.B., Ch.M. Glasg., L.R.C.P., L.R.C.S. Edin., has been appointed Medical and Health Officer for Burketown, Queensland.

MILES, ALEXANDER, F.R.C.S. Ed., has been appointed Lecturer on Surgery at the Medical College for Women, Edinburgh.

NASH, J. B., M.D. Edin., M.R.C.S., has been appointed a Member of the Legislative Council of New South Wales.

PERREIRA, D. E., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed House Surgeon to the Italian Hospital, Queen-square, London.

PRICE, T. A., M.B., Ch.B. Edin., has been appointed Resident Surgeon to the Warwick Hospital, Queensland.

ROBSON, T. S., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the St. Osyth District of the Tendring Union by the Tendring Board of Guardians.

ROUTH, WM., M.R.C.S., has been appointed to take charge of the passengers of the steamship *Cintra*, quarantined at Magnetic Island, Queensland.

SHARMAN, EDWARD W., L.R.C.P, L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Health Officer for the Port of Auckland, vice T. H. Lewis.

SIMONS, C. N., L.R.C.S. Irel., has been appointed Public Vaccinator and Officer of Health for the Shire of Kerang, Victoria, Australia.

STAPLETON, JOS. J., M.D. Edin., M.R.C.S., has been appointed Government Medical Officer and Vaccinator for Wallsend, New South Wales, vice J. B. Nash, resigned.

STORRS, E. G., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer for the Haxey Sanitary District of the Gainsborough Union, vice C. Barker, resigned.

THANE, E. H., M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Government Medical Officer, Wagga Wagga, New South Wales; and also Visiting Surgeon to the Gaol, Wagga Wagga.

TURNER, A. J., M.D. Lond, M.R.C.S., has been appointed Health Officer to the Central Board of Health, Brisbane.

WEBB, A. B., M.B., Ch.B. Melb., has been appointed Officer of Health for the Shire of Colac, North Division, and Public Vaccinator for Beeac, Victoria, Australia.

WILKIE, D. W. B., M.B. Melb., M.R.C.S., has been appointed *pro tem.* Medical Officer at Herberton, Queensland, and Visiting Surgeon to the Police at Herberton.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ASHANTI FIELD FORCE.—Experienced Dressers for six months in the Colony, with pay at the rate of £20 a month, and other money, &c., arrangements. Address to the Assistant Private Secretary, Colonial Office.

BIRMINGHAM WORKHOUSE.—Medical Officer for three weeks from the middle of August. Board, apartments, laundry, and attendance provided. Apply, stating terms, to the Clerk to the Guardians, Birmingham.

BOOTLE BOROUGH HOSPITAL.—Junior Resident Medical Officer. Salary £80 per annum, with board, laundry, &c.

BOROUGH ASYLUM, Portsmouth.—Junior Assistant Medical Officer. Salary £120 per annum, increasing to £150 by three equal annual increments, with board, lodging, and washing.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRISTOL EYE HOSPITAL.—Locum Tenens for the House Surgeon for two months. Salary 2½ guineas a week, without residence.

BRISTOL ROYAL INFIRMARY.—Honorary Ophthalmic Surgeon.

CITY OF BOMBAY.—Executive Health Officer for five years, renewable conditionally. Monthly salary arranged.—Apply to the Municipal Commissioner for City of Bombay, care of Mr. John Lithiby, Local Government Board, Whitehall.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals. Salary £120 per annum, with board, lodging, and attendance. Apply to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer, unmarried. Salary £140, rising to £160 the second year.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing. Also Assistant House Surgeon for seven months from Oct. 1st. Salary at the rate of £40 per annum, with board, lodging, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DOVER HOSPITAL.—House Surgeon, unmarried. Salary £100 a year, with an increase after twelve months' service. Board, lodging, and washing provided.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon, unmarried. Salary £60, with board, lodging, and washing.

EASTERN DISPENSARY, Leman-street, Whitechapel.—Resident Medical Officer, unmarried. Salary £105 per annum, with furnished residence, coals, and attendance. Applications to the Secretary, 60, Great Prescot-street, London, E.

EYE, EAR, AND THROAT HOSPITAL FOR SHROPSHIRE AND WALES, Shrewsbury.—Surgeon. Honorarium of £150 per annum will be given for three years.

GROVE HALL ASYLUM, Bow, London.—Junior Assistant Medical Officer. Salary £120 per annum, with board, furnished apartments, and washing.

LONDONDERRY COUNTY BOROUGH.—Medical Officer to act as Medical Superintendent Officer of Health and Medical Attendant at Foyle Hill Infectious Diseases Hospital. Salary £350 per annum. Apply to the Executive Sanitary Officer's Office, Guildhall, Londonderry.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80, with residence, board, and washing.

NEWCASTLE-UPON-TYNE CITY ASYLUM, Gosforth, Newcastle-upon-Tyne.—Assistant Medical Officer, unmarried. Salary £130 a year, with furnished apartments, board, &c., rising £10 annually to £150.

NORTH CAMBS. HOSPITAL, Wisbech.—Resident House Surgeon. Salary £130 per annum, with furnished house.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—Resident Medical Officer for 12 months. Salary £120 per annum, with board, residence, and washing. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OLDHAM INFIRMARY.—Junior House Surgeon for one year. Salary £75, with board, residence, and washing. Also Locum Tenens. Terms 4 guineas per week, with board, washing, and residence.

PARISH OF ROUSAY AND EGILSHAY, Orkney.—Resident Medical Officer. Salary £51 sterling per annum. Apply to Inspector of Poor, Rousay, Orkney.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum.

ROYAL HALIFAX INFIRMARY.—Senior House Surgeon, unmarried. Salary £120 per annum, with residence, board, and washing. Also Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing. Also Third House Surgeon, unmarried. Salary £80 per annum, with residence, board, and washing.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Physician, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AT VENTNOR.—Clinical Assistant. Salary £40, with board and residence Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon, for one year. Salary £100, with board, lodging, and washing.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried. Apply to Medical Superintendent.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

SURREY DISPENSARY, Great Dover-street, Southwark, S.E.—Resident Medical Officer. Apply to the Secretary, 53, Borough High-street.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeon under the Factory Acts at Bradford-on-Avon in the county of Wilts, and at Freshford in the county of Somerset

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. Honorarium at the rate of £20 per annum, with board, residence, and laundry.

UNIVERSITY OF GLASGOW.—Chair of Clinical Medicine.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

VICTORIA HOSPITAL, Folkestone.—House Surgeon. Salary £80 per annum, with board, residence, and washing.

WEST BROMWICH DISTRICT HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75, with board, residence, &c.

WILTS COUNTY ASYLUM, Devizes.—Assistant Medical Officer, unmarried. Salary £150, rising £10 a year to £180, with board, residence, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

COPEMAN.—On July 29th, 1900, at Wakehurst Place, Sussex, the wife of Sydney Monckton Copeman, M.D., F.R.C.P., of a son.

EWBANK.—On July 28th, at 13, Rockstone-place, Southampton, the wife of Arthur George Ewbank, of a son.

HOSFORD.—On July 24th, at St. John's-road, Upper Holloway N., the wife of B. Hosford, M.A., M.D., of a son.

SEARS.—On July 25th, at Lee-terrace, Blackheath, the wife of Alfred Ernest Sears, M.R.C.S., L.R.C.P., of a son.

## MARRIAGES.

HALL—GEDDES.—On July 25th, at St. John's Church, Ryde, Isle of Wight, Edmund Stokes Hall, M.B. Lond., M.R.C.S., L.R.C.P., second son of John Selby Hall, of Stoneleigh, Ryde, to Jessie Alexandra, only daughter of Robert Geddes, of Trotton, St. John's-park, Ryde, Isle of Wight.

MADDEN—COX.—On July 25th, at All Saints', Margaret-street, London, W., Frank Cole Madden, M.B., B.S. Melb., F.R.C.S., of Cairo, to Madeline Alice, second daughter of William Cox, M.R.C.S., Winchcombe, Gloucestershire.

PARSONS—PARKER.—On July 28th, at Holy Trinity Church, Llandudno Frederick Gymer Parsons, F.R.C.S., son of Thos. Parsons, of Lee Kent, to May, elder daughter of Henry R. Parker, LL.D., of Sywell House, Llandudno.

## DEATH.

STEELE.—On July 25th, at Byford House, York-road, Southend-on-Sea, Ernest A. T. Steele, M.R.C.S., L.R.C.P., Surgeon to St. Mary's Hospital for Children, Plaistow, E., aged 34 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## ZYMOTIC DIARRHŒA.

MR. WILLIAM BERRY, medical officer of health of the borough of Wigan, has circulated the following letter among the medical men practising in the district of which he has sanitary charge, his object being to obtain an accurate account of the deaths from summer diarrhœa:—

"MY DEAR SIR,—As the period for summer diarrhœa is at hand I venture with some degree of diffidence to call your attention to the alteration in the mode of certification in this disease, as recommended by a Committee of the Royal College of Physicians.

"Diarrhœa is a symptom of some other disease; it occurs in intestinal cancer, tuberculosis of intestines or lungs, diseases of the liver and pancreas, &c., &c., and in such cases the primary cause should be stated in the death certificate so as to prevent the death being registered as one from diarrhœa.

"From a public health point of view the deaths that should be registered as caused by diarrhœa are those which are preventable and which arise suddenly, as a rule, at this time of the year and the two following months—namely, August and September. For these the Committee of the College of Physicians recommend one of the following terms as the best designation: (1) epidemic enteritis, (2) zymotic enteritis, or (3) epidemic diarrhœa, all other synonyms to be entirely discarded.

"The synonyms in previous use were: simple cholera, cholera nostras, cholera infantum, choleraic diarrhœa, dysenteric diarrhœa.

"As our infantile mortality is high I am anxious to have as correct a certification as we can possibly get. Therefore I shall feel obliged if you will, in accordance with the recommendation of the Committee, use the term of 'zymotic enteritis' in all cases where there is no other pathological indication as to the cause of death. In other cases where diarrhœa has been a secondary symptom the primary cause should be certified and the term 'diarrhœa' may be omitted as being only a symptom.

"With every apology, I remain, yours very faithfully,

"WM. BERRY, Medical Officer of Health.

"July 18th, 1900."

## "GOLDEN SYRUP."

A CASE said to be of some interest to shopkeepers and certainly of much interest to their customers was brought before the magistrates at Hyde on July 19th. A grocer was charged with selling adulterated syrup. The inspector under the Food and Drugs Act asked for one and a half pounds of golden syrup, for which he paid threepence and sent a portion to the public analyst who reported that it contained 55 per cent. of glucose syrup which is made from starch, while golden syrup, which people seem to look on as a refined treacle, is made from sugar-cane. For the defendant it was stated that he had never before been asked for "golden syrup," that his customers asked for "syrup treacle," and that most likely the inspector could not purchase it in Hyde. On the other hand, the inspector said that he bought three samples in Hyde on the same day, two of which were pure. Although this adulteration cannot be considered to be one of those which endanger health it ought not to take place, but the magistrates—perhaps because they have given up the use of golden syrup—though they fined the grocer five shillings, did not apparently think it very serious as they "believed that a *technical* offence had been committed." If people wish to have glucose it should be sold as such and not as a product of the sugar-cane.

## THE "HAGEY" SYSTEM.

*To the Editors of* THE LANCET.

SIRS,—It may be interesting to you to know that what is called the 'Hagey" system for the cure of intemperance is about to be established in London. The Hagey Institute has been in existence for some years past in Glasgow and quite recently a similar institute has been set up in Wales. From an interview which I had with the local manager it appears that the treatment consists in the administration of some tonic and the hypodermic injection of some drug at regular intervals during the day. It is said that if during treatment the patients take any alcohol they become sick. My attention was called to the matter because the managers before they commence treatment get some medical man to certify that the patients are free from both heart and kidney disease. In this district I called the attention of the medical man in question to the rather serious risk he was running in associating himself with an institute where unqualified men undertook medical treatment. It appears that a very large sum of money has been expended in purchasing the rights to use this treatment in this country. Needless to add that it originated in America. It would be worth while to call attention to the question in order that qualified medical men might be warned of the danger of accepting office.

I am, Sirs, yours faithfully,

Cardiff, July 20th, 1900. T. GARRETT HORDER.

## A QUEEN'S CHOCOLATE BOX FOR SALE.

*To the Editors of* THE LANCET.

SIRS,—I trust that you will pardon me for troubling you with this. I am the widow of the late ——, who resided for many years in ——. I am in very bad health and very straitened circumstances, and my eldest son, a private in the Royal Army Medical Corps, who has been out in South Africa ever since the war began, has sent me the Queen's Chocolate Box to dispose of for my benefit; and knowing from experience how very good and kind you are in rendering assistance to anyone connected with the medical profession and who may require the same, I have ventured to take the liberty to write to ask if you can and will be so very good as to assist me to find a customer for the box through the medium of THE LANCET. My health is so bad that at times it renders me quite helpless, and if I can sell the box it might enable me to undergo a course of treatment from which I have been told by the medical man who has attended me for some time I may derive a lot of benefit. I shall be grateful for any assistance you can give me in disposing of the box.

I am, Sirs, yours very truly,

A MEDICAL MAN'S WIDOW.

*** If any of our readers care to make offers for the Queen's Chocolate Box we shall be pleased to forward their letters to the writer of the above.—ED. L.

## WANTED—A HOME.

*To the Editors of* THE LANCET.

SIRS,—My medical man has advised me to ask you if you can recommend me a school or home for a son of mine whom he describes as feeble-minded. His age is 11 years. He has been attending an ordinary school for some time and I have also tried myself to teach him, but he can learn nothing. You might possibly get him to say his alphabet one day but the next day it is all forgotten. I do not think his case is altogether hopeless because he can remember plenty of things that occurred a year or two ago. I may mention that my means are limited. I cannot afford much for him.

I am, Sirs, yours faithfully,

July 21st, 1900. A PARENT.

## CLUB PRACTICE.

*To the Editors of* THE LANCET.

SIRS,—I should be glad if your columns could be opened to a defence of the club system by those who advocate or practise it—often old-established men of good standing—as contrasted with the general contumely poured upon the head of a man who does a low-fee cash practice of say a shilling. Naturally it may be comforting for a collector to bring periodically a more or less fluctuating sum wherewith to meet current expenses when bills are paid with much delay but as compared with work done it is out of all proportion. First of all, assuming that the average club subscription is five shillings per annum, which, as a matter of fact, is far above the average, while in many places children are accepted at the starvation price of one halfpenny per week. This means that two visits per year exhausts, at the ordinary lowest scale of charging, that individual's premium for the whole of that said year, and in the case of a child, one visit in the same time on the above scale shows a balance on the wrong side. Moreover, children are always trespassing on the practitioner's time through their special ailments, not to mention maternal neglect. Of course, the theory is that the sound members pay for the sick ones, but in practice, as judged by work done, this is entirely erroneous. Even under the happiest conditions I have calculated that, taking 12 consecutive months, for every £1 taken at least £3 worth of work has been done in visits alone, as no record was kept of surgery consultations. As a matter of fact, on a certain Feb. 23th visits had been paid to the extent of the whole year's contract receipts, thus leaving every patient after that date to be seen and every bottle of medicine to be dispensed gratuitously. Further, apart from the above practical experience, on what grounds can the system possibly be defended, except as a charity, which I do not think certain undercutting medical men would advance, when statistics quoted in Whitelegge's Hygiene state that between the ages of 15 and 65 years the average sickness to be expected is 1·31 weeks per year, and this of course does not include children's ailments?

Then, again, a practice being as shown above trebled in work done must needs require more horseflesh and probably an assistant; consequently the net income is far below the actual turnover and the principal would be far better off with a much smaller purely private practice. Further, nightwork is materially increased, as a club patient scruples not to send at all hours for trivial reasons when a wholesome fear of an increased fee would deter any but a really important case sending; and when was a club patient grateful?

So the question may be summed up as follows. Increased work and impaired health thereby, net returns small, and, above all, the constant irritation of feeling that the profession is being sweated.

I am, Sirs, yours faithfully,

July 30th, 1900. M.R.C.S., L.R.C.P.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, August 2nd, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radia in Vacuo. | Maximum Temp. Shade. | Min. Temp | Wet Bulb. | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| July 27 | 30·03 | S.E. | ... | 119 | 79 | 64 | 64 | 68 | Cloudy |
| ,, 28 | 29·73 | S.W. | 0·53 | 111 | 79 | 62 | 67 | 69 | Cloudy |
| ,, 29 | 29·81 | W. | ... | 124 | 79 | 61 | 61 | 63 | Cloudy |
| ,, 30 | 29·82 | N.W. | 0·03 | 128 | 78 | 57 | 61 | 64 | Cloudy |
| ,, 31 | 30·05 | WNW | ... | 118 | 79 | 59 | 63 | 66 | Hazy |
| Aug. 1 | 29·85 | S.W. | ... | 102 | 68 | 63 | 63 | 65 | Overcast |
| ,, 2 | 29·74 | N.W. | 0·39 | 118 | 72 | 56 | 60 | 63 | Cloudy |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (6th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (7th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (8th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

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**SATURDAY (11th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

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## MANAGER'S NOTICES.

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THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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# Address in Obstetrics:

## THE MATERNAL MORTALITY IN CHILDBED

*Delivered at the Annual Meeting of the British Medical Association at Ipswich on August 3rd, 1900,*

BY WILLIAM J. SMYLY, M.D. DUB., F.R.C.P. IREL.,

VICE-PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF IRELAND; GYNÆCOLOGIST TO THE ADELAIDE HOSPITAL, DUBLIN.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—As the century draws to its close a retrospect is not only excusable but advisable. At such a time we naturally pause to consider the way in which we have come, how we differ from our predecessors, and what we have gained in these hundred eventful years. Periodical literature is full of such retrospects. Our modes of life, the discoveries of science, our means of locomotion, and our methods of warfare are contrasted with those of 1800, and the verdict is that in the present century a greater advance has been achieved than in all that preceded it. Medicine and surgery have shared to the full in the advances of this wonderful age, and it now falls to my lot to show how midwifery has participated in the general improvement.

In considering the history of midwifery many subjects suggest themselves which would offer ample material for an address in obstetrics. The struggle between science and nescience, as represented by medical practitioners and midwives, commenced in the sixteenth century, was fought in every civilised country with varying fortune, and continues in our own time to be a burning question. The contest between radicals and conservatives, or those who incline to operative interference and those who rely more exclusively on nature, are as fully represented amongst us here to-day as they were in the days of Levret and Smellie, of Boër and Osiander. The rise and fall of lying-in hospitals, their almost total extinction and resuscitation in our own time, have no parallel in medical history. To have closed these institutions would have been to have sealed the fountain of knowledge at its very source, yet few could deny that Simpson was actuated by the highest motives of humanity in the campaign which he carried on against them. The development of obstetrical literature, the origin and development of obstetrical and gynæcological societies, national associations, and international congresses, each and all of these would have offered ample material. I have preferred, however, a subject much more familiar and often dealt with, but at the same time of much greater importance than any other that could be chosen—namely, the maternal mortality in childbed.

### THE FAILURES OF THE EARLIER PART OF THE CENTURY.

The history of midwifery is a long one, extending back to the earliest times. The Hebrew Scriptures abound in obstetrics, and midwives as a class are distinctly mentioned therein. A knowledge of the art existed amongst the Indians, the Greeks, and the Romans, and later amongst the Arabians, but scientific midwifery may be said to have commenced with Ambroise Paré in the sixteenth century. During the intervening years up to the present time it has been advanced by ardent and zealous investigators, many of whose names can never be forgotten—Mauriceau, Deventer, the Chamberlains, Levret, Baudelocque, Sir Fielding Ould, Smellie, William Hunter, Boër, Naegele, the Ramsbothams, Sir James Simpson, Matthews Duncan, Robert Barnes, and a host of others too numerous to mention. But in considering the improvement in the death-rate in childbed we need not go back many years. It did not take place gradually as the light of science slowly dawned upon our art, but occurred suddenly in the seventh decade of the present century. The observers of the past pursued their object in the face of failure little short of disaster. Their zeal and perseverance were not rewarded by success, but, on the contrary, the more famous the professor, the wider his field of observation, the greater his industry, and the more searching his investigations, the worse were his results. In the first half of the present century the mortality amongst parturient women, especially in hospitals, was probably greater than in any other period of the world's history.

### THE DECLINE OF MORTALITY IN LYING-IN HOSPITALS.

Towards the close of the seventies, however, a sudden and salutary change took place. In the Paris Maternity, for example, the mortality dropped in one year from 8 per cent. to 4 per cent., and in 1881 to 1 per cent., and has since improved, and in all the hospitals of Europe a similar change occurred. As to private practice, however, I am not able to give any facts founded upon reliable statistics. Dr. Matthews Duncan in his monograph on "Mortality in Childbed" published in 1870 deliberately stated that "all attempts at ascertaining scientifically the mortality in childbed must be given up." Dr. McClintock also said about the same time, "With our great registering machinery all at work we cannot find out what is the mortality of childbed in London. For my part I think that obstetrical common sense will be well contented if the true childbed mortality of modern London is at all less than in London of 1660. It is very doubtful if it is even now as low as 1 in 107." Matthews Duncan after careful investigation agreed with McClintock that the mortality in private practice was not less than 1 in 120. His own results were 1 in 105, McClintock's results were 1 in 108, and Dr. Churchill's results were 1 in 159. In the face of such results in the hands of the best men it is idle to talk of the general mortality having been at that time 19 per 10,000. In comparing the results, therefore, of modern with ancient practice, we must confine ourselves to hospital statistics, and I have no doubt that the results in private practice are a faithful reflection, perhaps some years later, of the teaching in those institutions.

*Statistics of the Rotunda Hospital.*—I will take as an example for the purpose of contrast the results obtained in the Rotunda Hospital during Dr. Johnston's mastership, from 1870 to 1876, and the seven years from 1890 to 1896. I have chosen Dr. Johnston's report because it was the period immediately preceding the introduction of antiseptics and because his results were considered at the time to have been remarkably good. During the first period (from 1870 to 1876) 8092 women were delivered in the hospital, of whom 169 died, or 1 in 45·5; during the second period (from 1890 to 1896) 9085, with 50 deaths, or 1 in 181·7, showing a saving of about 200 maternal lives in every 10,000 deliveries. If we adopt the classification of the Registrar-General the deaths appear as due to:—

| — | 1870–1876. | 1890–1896. |
|---|---|---|
| 1. Septic infection ... ... ... ... | 89·1 in 90·9 | 10·1 in 908·5 |
| 2. Accidents of childbirth ... ... | 46·1 in 176 | 24·1 in 378 |
| 3. Unconnected with childbirth. | 34·1 in 238 | 16·1 in 568 |

Similar results are shown by hospitals generally. It is evident, therefore, that in hospitals at least a marked improvement has taken place during the past quarter of the century in all the three groups—death from puerperal fever, accidents of labour, and other causes.

### PUERPERAL FEVER OR SEPTIC INFECTION.

The greatest improvement is observable in this group, and I shall offer no apology for dwelling at length upon the way in which it has been brought about.

In the beginning of the century obstetricians were ignorant of the nature of this, the chief cause of childbed mortality, and were helpless either to prevent or to cure it. Epidemics became more frequent and more virulent; and obstetricians endeavoured by clinical observation and post-mortem examination to discover its nature; but unfortunately both these roads to knowledge were pursued by the same individuals and with disastrous results. In Paris Cruveilhier, the most illustrious of French pathologists, was appointed physician to the Maternity; he multiplied his researches and at the same time the mortality in that institution increased. Little of value was added to our knowledge by these investigations, and even in 1872 Dr. Churchill reflected the general ignorance when he published in the sixth edition of his well-known work his opinion that puerperal fever was due to mental emotion, cold, putrefaction of portions of retained placenta, gastro-enteric irritation, the state of the atmosphere, epidemic influences, and contagion. With regard to the latter he felt compelled by the evidence to admit the

possibility of its being conveyed and communicated or excited by those who had attended midwifery cases after being employed in dissection or post-mortem examination, or who were much in contact with fever patients, but in all other cases he attributed its occurrence to epidemic influence. It is pleasant to turn from this general ignorance and mark the first beams of the dawning day.

*Dr. White of Manchester.*—Towards the end of the last century a remarkable work on the management of pregnant and lying-in women was published by Dr. White, a surgeon practising in Manchester. In that work, published in 1791, he attributed puerperal fever to the absorption of putrid matter by the lymphatics and vessels of the womb. He arrived at this conclusion by observing the similarity, in causation and symptoms, in putrefactions occurring in other parts of the body. In chronic abscess, for example, dangerous symptoms similar to those of puerperal fever set in after it had been opened and the air had gained admission; so also in childbed, fever did not occur until after the child was born. He further observed that when a putrid wound was cleansed the symptoms abated, and that where the disease was so situated that it could be removed by amputation they entirely disappeared, and from this he concluded that absorption of putrid matter was the cause of puerperal fever. His treatment was therefore directed towards the prevention of putrefaction and the elimination of putrid matter should it have already formed. To these ends he advocated thorough ventilation, cleanliness, and drainage. Foul stagnated air, human effluvia, heat and moisture, were to be avoided. Free and even cold air should pervade the apartment, and clean linen be supplied every day. The lochia, if permitted to stagnate in the vagina, would soon become putrid, for, he said, it is well known that the mildest humours in the human body, if suffered to stagnate, become acrid as soon as the air has access to them. He therefore encouraged his patients to sit up several times a day, and even to leave their beds, so as to prevent a lodging of offending matter either in the vagina, uterus, intestines, or bladder. Perhaps the most remarkable statement in this work is the following: "I must not omit to mention," he says, "the good effects I have experienced from emollient or antiseptic injections into the uterus by means of a large ivory syringe or an elastic vegetable bottle in those cases where the lochia have become acrid or putrid, and by being absorbed into the circulation have served as a constant fomes to the disease. I have by this means known the fever much assuaged, and in many cases wholly extinguished, for though the quantity of the lochia is not to be much regarded the quality of this discharge is a matter of infinite importance." One cannot but wonder at White's independence of opinion and the general correctness of his views. He was only a provincial surgeon, yet he did not shrink from stigmatising the teaching of the obstetric world of his day "as a set of pernicious maxims and opinions, built upon ignorance and supported by prejudice and obstinacy." With truth he declared that the slightest remark drawn from real observation is of more utility than the most extensive theory of causes drawn from hypothesis alone. Ignorance, prejudice, obstinacy—these were the forces against which he combated, and, alas, in vain, nor for 50 years afterwards did another champion take the field against them—to perish in the encounter.

*Ignaz Philipp Semmelweis.*—That champion was Ignaz Philipp Semmelweis. With what feelings of regret and shame should we recall his name. Not long ago obstetricians in every land combined to raise a memorial to it, but during his sad life no such recognition of his virtues smoothed his thorny road. Of us it may well be said, "Your fathers killed the prophets, and ye build their sepulchres." Had they but learned of him instead of ridiculing, opposing, and neglecting him, how different would have been the history of obstetrics in the past half-century. Obstetricians would have led the van and have taught the surgeons antiseptic methods; but the contrary has been the case, and surgeons have taught us what Semmelweis strove to teach our fathers 20 years before. What an amount of human life would have thus been saved, what untold anguish and remorse might there have been avoided; but ignorance, prejudice, and obstinacy prevailed. In 1846 Semmelweis, a young man of 28, was appointed assistant to Professor Klein in the maternity department of the Vienna Hospital. Not only was his sensitive nature shocked by the fearful mortality which prevailed in the department attended by the students, but his observant mind was also struck by the more favourable results obtained in the neighbouring department reserved for the instruction of pupil midwives. Reviewing the history of the institution he found that from 1784 to 1822 the physicians connected with it performed no post-mortem examinations and that the average mortality during that period was 1·25 per cent.; from 1825 to 1833 post-mortem examinations were made and the mortality increased to 5·3 per cent. In 1839 the clinic was divided into two departments and the second was reserved for pupil midwives; the mortality in it fell at once to 2·6 per cent., whilst in the other where the students attended it increased to 9·5 per cent., and this proportion remained the same for the five succeeding years except during the years 1841 to 1843 when during an epidemic of 20 months' duration the mortality in the first department averaged 16 per cent. and at one time rose even to 31·3 per cent. At the post-mortem examination of his colleague Kollitshka who died from septic poisoning Semmelweis was so struck by the similarity between the appearances in that case and in the patients who died from puerperal fever that he concluded that the cause must be the same in both—namely, an infection from without due to the transportation of cadaveric poison by the fingers of the attendants—and he directed that before attending lying-in women they should wash their hands in a solution of chloride of lime. The mortality at once sank to 3·05 per cent. Subsequently, however, he formed the opinion that any organic substance in course of putrefaction, and especially the discharges of women with septic diseases, and even air charged with putrefactive matter, might cause fever; and from this time the hands were disinfected in every case, as well as the instruments and the materials used in cleansing the patients, and the sick were separated from the healthy. The mortality fell to 1·27 per cent. Having been defeated by the intrigues of his colleagues whose animosity he had aroused in his candidature for a professorship in Vienna, he went to Buda-Pesth, where he filled the office of senior physician to the Rochus Hospital for a period of six years, and under his administration the mortality in that institution averaged only 0·85 per cent. Having again been unsuccessful in his candidature for the professorship in Prague, he retired from practice and devoted his energies to publishing his great discovery in a work on the "Nature and Prophylaxis of Puerperal Infection." The story of Archimedes springing from his bath and rushing forth shouting "Eureka, eureka!" is a comedy in science, but the history of this man urging his great discovery upon those who received it with indifference, or hostility, and ridicule, even stopping the passers-by in the streets to impress on them the importance of life-saving truths which they would not receive—this forms a tragedy fit to make the angels weep. In these endeavours he fretted and fumed his life away, until at last reason departed and he was consigned to the lunatic asylum in Vienna, where four years later he died from septic poisoning, that very disease which he spent his life in combating. Semmelweis discovered the same truth as White had done 50 years before, that putrefaction was the cause of puerperal fever, but he added another and much more important one—namely, that the disease could be conveyed to the patient by her attendants. These two methods he termed auto- and hetero-infection.

### ANTISEPTICS.

Long before Semmelweis fretted himself into insanity he might have discovered, had he had patience to observe it, that the seed which he was sowing had already taken root and would soon bear abundant fruit. Michaelis and Lange had adopted his views with success. Simpson warmly advocated them in this country and pointed out their applicability to operative surgery. The wonderful discoveries of Pasteur were published two years before his death, and these discoveries not only confirmed his views but placed them upon a firm scientific footing. Lister was already in the field in 1864 and astonished the world by the wonders of antiseptic surgery. But it was not until 1870 that antiseptic principles were applied to obstetric practice, and practically banished puerperal fever from our hospitals. Stadfeld, Bischoff, Fritsch, Schroeder, Breisky, and Lucas Championnière were the pioneers in this movement. At first Listerian methods were closely followed, but not only was the original system too cumbrous for general practice, but it was soon discovered that many of its details might with advantage be abandoned.

### THE DOUCHE.

The spray was replaced by the douche, and the vagina was douched with antiseptic fluids before and after every

labour. Soon the uterus was also included in the process, and prophylactic douching reached its climax when permanent irrigation or instillation was introduced by Schücking. Soon, however, serious accidents and even deaths, the result of the douche, began to multiply. These were due to injection of air and antiseptic fluids in the veins. In some cases the uterus was perforated and poisonous fluids were injected in the peritoneal cavity, but, worst of all, the douche proved to be a cause of the very disease which it was intended to prevent. Runge described an epidemic in the Charité Hospital, Berlin, in which the mortality remained at 3·8 per cent. so long as prophylactic douching was employed, but immediately sank to 0·39 per cent. upon its abandonment. Breisky reported a similar experience. In a series of papers in the *Archiv für Gynäkologie* Professor Leopold clearly showed that by thoroughly disinfecting the external parts and avoiding unnecessary examinations far better results were obtainable than by prophylactic douching. In 1888, however, in consequence of the results of bacteriological examination of vaginal discharges he returned to vaginal douching: immediately the morbidity increased by 3 per cent. The next year he again gave up the irrigator, and this was followed by an improvement of 9 per cent. I need hardly explain that by morbidity is meant a rise of temperature even once to 100·4° F. The whole question of the value of prophylactic douching—and it can hardly be said to have been finally settled even yet, for many leading obstetricians both in this country and abroad still resort to it—resolves itself into the probability or even possibility of auto-infection. That the vaginal discharge often contains germs many of which are apparently septic or saprophytic is undeniable, but are these germs really dangerous to the patient, and can they be removed by antiseptic measures? These are the two important questions. In 1888, Winter examined the discharge in 20 women, and found 27 varieties of micro-organisms. In 50 per cent. of these women he found streptococci and various saprophytes, though in an attenuated condition. In 1890 Streffeck made a similar series of examinations, and found pathological organisms in nearly the same proportion of cases. He therefore advocated vaginal douching. Döderlein's investigations in the same direction led him to classify discharges as normal and pathological. The normal were of a creamy consistence, intensely acid in reaction, and contained usually a pure culture of an organism which he named the vaginal bacillus and to which he attributed the acidity of the discharge. The pathological discharge was of thinner consistence, often puriform in appearance, it was feebly acid, neutral, or even alkaline in reaction, and it contained a great variety of micro-organisms, some of which were dangerous. The normal discharge he discovered to be not only innocuous but actually antiseptic. From experiments he concluded that where the discharge was normal vaginal douching was unnecessary, but, on the contrary, where it was pathological a thorough disinfection of the canal was imperative. Döderlein's investigations were repeated in the same clinic in Leipsic by Krönig. In 56·8 per cent. he found the discharge to be normal and in 43·2 to be pathological, but in none of these was it either neutral or alkaline in reaction. He agreed with Döderlein as to the antiseptic properties of the normal discharge, but denied that it was due to the vaginal bacillus, and found, on the contrary, that the so-called pathological discharges which, did not contain the bacillus also possessed a similar bactericidal property. He injected cultures of the bacillus pyocyaneus, staphylococcus aureus, and even streptococcus pyogenes into the vagina and found that they were all eliminated within 24 hours. A most important observation with regard to douching was that in cases in which, after injecting the micro-organisms, he at once thoroughly scrubbed out the vagina with a 1 per cent. solution of corrosive sublimate or lysol, they had not entirely disappeared at the end of 36 hours. The douche, therefore, not only failed to dislodge them, but so altered or removed the natural discharges that for at least 12 hours the normal bactericidal action of the vagina was annihilated. The result of these investigations was that vaginal prophylactic douching was altogether abolished in the Leipsic Hospital, with the result that morbidity was thereby reduced 10 per cent.; the gravity also of the infected cases was less, so that the number of women who were detained in the hospital beyond the tenth day was reduced by one-half. Some of the most distinguished French accoucheurs whilst admitting the importance of the facts I have mentioned still adhere to the prophylactic douche and with good results, but at the same time they point out the absolute necessity for observing perfect asepsis; the external parts of the patient, the hands of the operator, the instruments, and even the water must be absolutely pure. When we remember, however, that this operation, if carried out two or three times every day, must necessarily be entrusted to a nurse I have no hesitation in saying that the preservation of perfect asepsis or anything approaching it will be found in general practice to be absolutely impossible. Where are such nurses to be found? In these countries they are certainly rare and from personal experience I feel certain that routine douching has been productive of much more harm than good.

### THE HANDS OF THE ATTENDANT.

We now come to the attendant and our attention may be concentrated upon his hands. The teaching of Semmelweis and Sir James Simpson that infection is carried chiefly by the hands of attendants is now the generally accepted opinion. If I were to state that where there had been no handling there would be no septic infection I should not be very far from the truth. Leopold has clearly proved that patients who deliver themselves without any vaginal interference make better convalescences than those who have been examined even with the most scrupulous antiseptic precautions. Experience therefore proves—what bacteriological investigation would lead us to expect—that an absolutely aseptic condition of the hands cannot be ensured by any known process, and from this we learn: (1) to avoid as far as possible septic contamination; (2) to spare no pains to render our hands as innocuous as possible; and (3) to restrict local interference within the narrowest bounds. The last of these includes not only unnecessary operative interference but also needless vaginal examinations. We can limit the numbers of such examinations best by substituting for them external manipulations; and next to antiseptics I consider this to be the most important advance in modern midwifery. By whom it was introduced, or when, I know not, but its systematisation and popularity we owe to Pinard, Credé, and Leopold. In 1888 Credé wrote as follows: "Even the simplest manipulation may cause infection. It should therefore be laid down and taught as a fundamental principle that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits; it can be very well replaced by external examination. To instruct their pupils as thoroughly as possible in this method is the present and future duty of teaching institutions."

### DIAGNOSIS BY EXTERNAL EXAMINATION.

By external examination we can tell whether the woman is pregnant or not, and the period to which the pregnancy has advanced, and we can ascertain the presentation and position of the fœtus, whether it be living, dying, or dead, and whether there be one child or more in the uterus. We can also tell whether the patient is actually in labour or not, and the course and progress of the labour may be followed with accuracy. Pelvic deformity is suggested by pendulous abdomen, abnormal mobility and obliquity of the uterus, especially in primiparæ, and in the latter also, excepting hydramnios, hydrocephalic fœtus and plurality of children, all of which may be diagnosed by this method. It is an ominous sign, where labour has actually commenced, to find the head still above the brim; the way in which it enters the cavity is also characteristic. In prolonged labours danger to the mother is indicated by thickening of the upper and thinning of the lower uterine segments; the elevation of the contraction ring and the prominence of one or both round ligaments. External examination is equally useful in the third stage of labour, and its proper conduction depends upon it. The external examination then is the one chiefly to be relied upon, not only because it is safer, but also because it gives more information to the examiner, and because it is easier and more reliable. Having for many years practised the vaginal examination exclusively, I found it difficult to persuade myself of the truth of the latter assertion; but not only has my own individual experience proved to me that this is so, but in the Rotunda Hospital, where the students are obliged to write down upon the bedcards the result of each examination, I found that mistakes in diagnosis were much more frequent with the vaginal than with the abdominal method. There are two things, however, which can only be made out by vaginal examination, and these are the condition of the os uteri and a prolapse of the umbilical cord; and if for any reason, such as inexperience on the part of the

examiner or insuperable difficulties, such as very fat or rigid abdomen on the part of the patient, the results of the abdominal examination are unsatisfactory, a vaginal examination becomes necessary.

DIAGNOSIS BY INTERNAL EXAMINATION.

But before each internal examination the practitioner should remember that it is an operation never altogether devoid of risk and he should be fully persuaded in his own mind as to its necessity. For my own part I seldom examine internally more than once in the course of a natural labour, and I endeavour to do so as soon as possible after the full dilatation of the os, as indicated by the rupture of the membranes or a change in the character of the labour pains. I need not delay to describe the disinfection of the hands. Many excellent methods are in vogue, but thoroughness in carrying it out is of more importance than the selection of any particular method; at the same time in general practice it should be simple as well as efficient.

TREATMENT.

In the treatment of the disease when once established we have also made considerable advances. Local disinfection by antiseptic douching is generally employed, and the curette, abdominal section, and ablation of the infected organs have been employed with success, but are hardly in a position for a dogmatic pronouncement upon their value in an address which is not to be followed by discussion. For the same reason I shall not speak of the antistreptococcic serum, but the general treatment with which I have met most success, and which is, I believe, now most generally adopted, is that introduced by Runge in 1886, and consists in cool bathing, nourishing diet, avoidance of internal antipyretics, and free administration of alcohol.

CONCLUSION.

The subject with which I have dealt is, no doubt, lacking in novelty, and the method an elaboration of the old saying that "meddlesome midwifery is bad," but I have been urged to its consideration by the opinions expressed by Hegar, Boxall, and Cullingworth, that in private practice there has as yet been no improvement. If this be true, or even partially true, it proves that those who undertake the care of parturient women are not yet alive to the responsibilities of their calling, and I have no doubt that a faithful adherence to the principles the development of which I have briefly sketched will result in a vast saving of most valuable lives and will prevent you individually from standing—as many of us have done in the past—helpless spectators of a fatal malady which an accusing conscience whispers might have been averted.

# Introductory Remarks

ON

# THE PREVENTION OF INSANITY.

*Delivered at the opening of the Section of Psychology at the Annual Meeting of the British Medical Association at Ipswich on August 1st, 1900,*

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GENTLEMEN,—Probably few circumstances connected with insanity have stirred the public mind more in the last few years than its real or apparent increase. The question is constantly asked by people, Is it not very much on the increase? and it seems to me to be worthy of consideration by this section of the Association whether we as medical men concerned in the treatment of mental disorders are doing all we can to check what at any rate is a most serious increase in the actual numbers of the insane. As the public owes the checking of the ravages of small-pox, the notification of infectious diseases, the improved sanitary measures which have led to such a marked diminution of the death-rate, and now in all probability the successful coping with the large amount of illness due to malarial poison—to name only a very few instances—to the medical profession, so undoubtedly it will be to that profession that the public will look for guidance in what is assuredly a very serious question for the future of our population. The annual report of the Commissioners in Lunacy for the year 1898 (published in June, 1899), begins with the remark that the total number of patients under their cognisance in England and Wales on Jan. 1st, 1899, was 105,086, "being an increase on the corresponding number on Jan. 1st, 1898, of 3114, the largest annual increase we have yet had to record." The increase reported by the Commissioners had concerned all classes of patients, the private class to the extent of 2·73 per cent., the pauper class to the extent of 3·09 per cent., and the criminal class to the extent of 2 per cent. Of greater importance than the mere fact of increase is the fact that there is also an increase in the ratio of the insane to the general population, the advance being the small one of 0·4 per cent. in the private class, and of 0·59 per cent. in the pauper class. The total gives the ratio of one "officially known" lunatic to 302 individuals, as against one in 308 on Jan. 1st, 1898, and one in 337 on Jan. 1st, 1899 Attempts have been made to show that the increase is more apparent than real, that it is largely due to the accumulation of senile cases and to a diminished death-rate, and that there is no real increase of new cases; but when all is said there remain the undoubted facts that the numbers increase by leaps and bounds, that the county and borough authorities are constantly being confronted by the demand for more accommodation in county and borough asylums, that new asylums spring up as the result, and that the taxpayer has constantly to put his hand in his pocket to defray expenses. It will hardly be denied that such a condition demands that we should use every effort to diminish if possible at the source the numbers of those who thus become incapacitated either temporarily or permanently, who, if not possessing private means, become either a burden to their relatives or to the taxpayer, and who in some cases become criminals as the result of their mental disorder.

It would, of course, be quite impossible in the limits of time accorded by the rules of the Association to introductory remarks by presidents of sections to review all the causes of insanity and to cover the whole ground of their removal, but it seems to me to be profitable to draw attention to three items, viz., (1) the propagation of the race by those of insane inheritance or those who have suffered from insanity; (2) the influence of alcohol in the production of insanity and the need for preventive legislation; and (3) the causation of general paralysis by syphilis.

## I.—THE PROPAGATION OF THE RACE BY PERSONS OF INSANE INHERITANCE OR WHO HAVE SUFFERED FROM INSANITY.

In Table XXV. in the report referred to above, giving the percentage of causes of insanity in patients under the cognisance of the Commissioners of Lunacy for the five years 1873–97 inclusive, hereditary influence was attributed as a cause in 20·4 per cent. of male and in 25·9 of female patients. These figures are well known to be far below what is the real proportion, and in Table XXVI., where the causes are reviewed in the two great groups of private and pauper patients, the percentages are found to be higher in the former, largely no doubt on account of the greater facilities for obtaining a history in that class; but even allowing that these figures are below the actual facts, we cannot escape from the fact that "hereditary influence" still gives the largest percentage of any of the causes enumerated by the Commissioners.

It cannot fail to be of the highest importance to the future of our race that the stock should be maintained in as healthy a condition as possible and should not be reproduced from defective individuals. This is fully recognised in the case of the lower animals, but human beings have a reluctance to apply the same rules to themselves. Nevertheless there can be no doubt that if we are to hold our own in the struggle for existence with other nations it is of the highest importance that the race should not be largely reproduced by individuals whose nervous system is so unstable that it very easily gives way under those stresses which must after all occur with great frequency in the various conditions of life, but should be propagated mainly by those who are abundantly well equipped from the nervous point of view. It will, no doubt, be thought that I am only giving utterance to a truism when I say that if the race were only reproduced by those of stable nervous system and sound by inheritance our existing asylums would soon be found to be larger than the

requirements of the population. In the last half of the nineteenth century enormous strides have been made in the care and treatment of the insane. They are infinitely better housed; their bodily and mental disorders are treated more assiduously and more scientifically, committees and unofficial visitors of all sorts take a much greater interest in and a much more humane view of their condition; their pathology is minutely inquired into; they are, thanks in great measure to the Medico-Psychological Association, infinitely better nursed; and after recovery such a society as the After-Care Association busies itself in helping the friendless victim of this most painful disorder again to take his place in the world. But I submit that with all this, which is most desirable and which exhibits all those qualities of sympathy with suffering for which our nation is so justly famed, very scant attention has been given to the question how a great deal of insanity can be avoided, and to the fact that a great deal of insanity is preventable and should be prevented. The Lunacy Law has been amended in the last few years so as to make it more difficult for those who urgently need care to be placed under care, while it has rendered it more difficult for patients to be detained and more easy for them to be discharged, as if the Legislature unconsciously arrived at the conclusion that by so doing it could diminish the numbers of the insane. There certainly was an impression among some members of the community, in spite of the denial of this by the Commissioners in Lunacy who are responsible to the public for the due discharge of patients from asylums, that large numbers of persons were detained on the very slightest pretexts, and it is thought by many that this impression weighed with those who were responsible for the drafting of the present Lunacy Acts. Nevertheless the numbers increase, and I submit that there is no more important problem for the twentieth century than the possibility of diminishing the numbers of the insane by their non-production. Among the more educated classes of the community there is, judging by the fact that those specially concerned in the treatment of mental disorders are often consulted on the subject, a recognition of the fact that the presence of insanity in a family at least demands from its members some serious reflection before marriage is entered upon, and it is often in the power of medical men to give advice which may, at any rate, prevent the union of two bad stocks. A short time ago I was consulted as to the rectitude or desirability of a marriage being contracted between a lady whose father had become insane about the time of her birth and had remained chronically insane since and a gentleman whose maternal aunt had been insane for 30 years. The gentleman would not agree to marry unless he could be assured that there was no risk whatever that his proposed wife would suffer from puerperal insanity in the event of a child being born, which assurance it was manifestly impossible to give, and also unless he were assured that there would be no risk of mental disorder in any offspring, which in view of the chronic insanity on both sides it was also impossible to give. Such a case shows that at least some members of the community have their eyes open to the fact of the importance of selection. Love is, however, proverbially blind, and among the unreflecting classes of the community nothing is thought of marriage with a person of insane inheritance. Unfortunately medical men themselves, unless they have had experience in an institution for the treatment of mental disorders, are not always sufficiently alive to the dangers of the propagation of the race from defectively constituted individuals and are sometimes apt to pooh-pooh any possibilities of risk in cases in which they are consulted and to give the opinion that there is no danger in a marriage between two persons of neurotic or insane stock provided the individuals themselves are apparently sound or have been so up to that time. It is perhaps well understood that in a question of marriage between cousins where there is insanity or any serious neurosis in a common ancestor or in the two separate families the idea of marriage ought not to be entertained but it is often overlooked that danger exists in the intermarriage of members of two families not related but where there is insanity or neuroses on both sides. It is very unlikely that the legislature will ever intervene to interpose any legal bar to marriage of individuals of insane inheritance; there will continue to be "free trade" in marriage as far as the law is concerned, but public opinion will have to be educated more and more to understand the importance of not propagating from bad stocks, and it is safe to lay down as a rule that no person of direct insane inheritance ought to marry with another of direct insane or neurotic inheritance, and that even if a person of stable inheritance proposes to marry with a person of insane inheritance, this latter fact of inheritance ought to be known and stated beforehand. In many cases this is done honourably, but in other cases the fact of insane inheritance of the most direct nature is concealed, on the one hand where large property is concerned, and on the other where, perhaps, there are several marriageable daughters in a family of limited means and where it is thought that the avowal of insanity in the family will "ruin their chances" as if the chief object in life were to propagate defective individuals. In other cases concealment takes place from ignorance or carelessness. In this, as in many other things, the greatest happiness of the greatest number must be thought of rather than the happiness merely of the individual, and there is the more honour to those who have relinquished what might have been a life of happiness rather than lend themselves to the degeneration of the race. With regard to the first heading, therefore, I conclude that it is the duty of the medical profession to give sound advice to those who consult them on this matter and not to lose sight of the fact that inheritance is the largest cause of insanity as shown by statistical tables.

If, however, there is doubt as to the marriage of persons of insane inheritance, there should be little doubt as to what ought to be the course and what ought to be the advice given in the case of persons who have themselves suffered from a definite attack of insanity, and in such cases marriage ought, as a rule, to be forbidden absolutely. Deplorable cases must be familiar to the minds of all those connected with psychiatry where patients who have recovered from a severe attack of mental disorder necessitating confinement in an asylum have subsequently married and either broken down again or propagated children defective from birth or breaking down at the critical periods of life. I remember well a patient in Bethlem Hospital who had great hostility to her parents, for which for a time I could find no explanation till one day she told me that what made her most angry was the fact that her birth had occurred subsequently to an attack of insanity from which her mother had suffered. Unfortunately, marriage with a person who has been insane is sometimes contracted by those who should by their education know better. For instance, I remember a patient in Bethlem who broke down in adolescence and eventually joined the large army of chronic dements whose father was a medical man who had married one of his patients who had recovered from an attack of insanity. In another case a nurse who was familiar with mental disease married a male patient who had temporarily improved but whose symptoms returned very quickly and led to a separation and much unhappiness. Fortunately there were no children of the marriage. She had taken this step against the advice of everyone who knew the man's condition. Again, a lady who had had several attacks of maniacal excitement and had been in Bethlem Hospital in one of them, married subsequently against advice and has only recently been discharged from Bethlem again, having broken down after the birth of a child. Such marriages as these are the surest way to increase insanity, but if they are sometimes entered into with a light heart by people of the educated classes it is not surprising that the more unreflecting classes should contract them freely. In the January number of the *Journal of Mental Science* of this year a deplorable case is recorded by Dr. C. C. Easterbrook, in which a girl of insane inheritance married after a fifth attack of insanity (which attack was a puerperal one following the birth of an illegitimate child) and subsequently had two children, after the births of each of which she again broke down mentally. I have no hesitation in saying that in some way or other such a patient ought to be prevented by law from reproducing her species. In all probability nature will speedily put an end to such a bad stock, but it may be at great cost to the community first. Another case occurs to me in which a young girl who had broken down acutely after the death of her lover recovered in a few months and within a year had found another young man to marry her. The marriage was undertaken against advice and within six months after marriage she had broken down again. In such cases the popular idea is that the patient is sure to be all right when she is married and that the insanity is due to the celibacy, and medical men even have not always the strength of mind to inform the relatives

that the likelihood of insanity after childbirth, if not at any other epoch, is greater in such cases than the likelihood of stability.

A great difficulty is presented in the case of those who break down subsequently to marriage but recover, and where the woman is still of child-bearing age. It is impossible to go deeply into this matter, but it is an important question when, for instance, a woman has had puerperal insanity after the birth of her first child whether she ought further to reproduce her kind. The answer to this, in my opinion, depends largely upon whether the puerperal attack depended simply upon what may be called an accident, as, for example, some septic condition, or whether it is merely the expression of an inherited neurosis which first appears at the puerperal epoch. In the latter case one feels that it would be best that the woman should cease child-bearing; but here again it is impossible to do more than advise to that effect, the advice given being in most cases not followed. In the case of a woman who has a puerperal attack after the birth of each child there can be no doubt of the unsatisfactory nature of the children she is bringing into the world and that such a bad stock ought not further to be reproduced, but how to effect this except by advice is difficult to see. The new civil code in Germany enacts that continuing insanity of over three years in duration is a ground for divorce, but I apprehend that in this country such a measure would have no chance of being placed on the statute-book in view of the fact that recovery may take place after a longer period than that, that where there are children their position would be rendered socially unpleasant, and that marriage is "for better or worse" and that the accident of disease should not be allowed to absolve a husband of his obligations. There is no doubt, however, that some such enactment would assist in putting an end to the chance of reproducing a bad stock.

It might be thought superfluous to comment on the iniquity of a congenital imbecile being allowed to marry were it not that several cases are recorded in which this has taken place where large property is concerned and with, of course, deplorable results to the offspring. Again, marriage ought not to be permitted in the case of chronic epileptics, whether the disorder be of the nature of *petit mal* or *grand mal*.

## II.—THE INFLUENCE OF ALCOHOL IN THE PRODUCTION OF INSANITY.

Next to heredity alcohol figures most largely in the causes of insanity given in the Commissioners' tables, accounting for 22 per cent. of the male and 9·1 per cent. of the female cases. This refers to the effect of alcohol on the individual alone and takes no note of alcoholic inheritance as leading to the production of insanity, idiocy, alcoholism, hysteria, epilepsy, or other neuroses in the offspring, though it is well known to act in this way. This large percentage of what may well be looked upon as a preventable cause of insanity ought to give the Legislature profound heart-searching as to whether it is doing its duty to the community in checking the ravages of this destructive poison. I shall not be contradicted when I say that the percentages above quoted do not represent anything like the real amount of damage which is done to the nervous systems of the community by alcoholic excess. In addition to the actual numbers who are sufficiently poisoned by alcohol to be certified as insane, there are large numbers of individuals who are from time to time dangerously unsound, it may be for a few hours or a few days, who are the terror of their relatives, who form a large proportion of the cases at police-courts, and who ruin themselves in health and fortune. And those who have had charge of the insane will agree with me that the cases of mental disorder due to alcohol are among the most difficult to manage, the most hostile and litigious, and after recovery very often the most ungrateful of any patients with whom we have to do. No doubt in many cases the alcoholic is a person who starts life with an unstable nervous system; he has either an alcoholic or an insane or a neurotic inheritance, and to a certain extent he is defective *ab initio* in self-control and goes without much resistance into the paths of chronic alcoholism, but at present the Legislature has given him no assistance. The facilities for drinking are enormous and the revenue of the country largely depends upon the quantity of alcohol consumed.

As long ago as 1893[1] a memorial signed by many members of the medical profession urging the enactment of compulsory detention for inebriates was presented to a Departmental Committee appointed by the Home Office, but the only outcome of movement in that direction has been the Inebriates Act of 1898, upon which Mr. Wood Renton[2] remarks: "The first point that calls for observation is that in spite of the unanimous demand for them on the part of every Parliamentary Committee that has inquired into the subject during the last quarter of a century ..... no powers for the compulsory committal of non-criminal inebriates have been brought into existence by the new statute." The new powers for dealing with criminal inebriates, moreover, have been almost a dead letter in consequence of the supineness of local authorities, though it is satisfactory to see that the London County Council is at last alive to its responsibilities in this respect. The report of the Royal Commission appointed to inquire into the operation and administration of the laws relating to the sale of intoxicating drinks, published in 1899, recommends that simple drunkenness should render an individual liable to arrest, that it should be penal to serve habitual drunkards with liquor, and that habitual drunkenness should be treated as "persistent cruelty," entitling a wife or husband to separation or protection for herself, himself, or the children. Unfortunately, however, the present Government seems disinclined to take the subject in hand. That such protection is frequently needed by the relatives of those who become maniacal from drink is undoubted, and there are few histories more sad than those told by the wives of the alcoholic insane, in which for a long time before it has become necessary to take steps under the Lunacy Acts there has frequently been recurring excitement, brutality, and danger to wife and children, with gradually increasing poverty and loss of social position. In a note on the report in the *Journal of Mental Science* for January, 1900, the following remarks are made: "The Commission does not seem to have troubled itself with statistics with regard to the share of intoxicants in the production of mental disease." There need have been no difficulty in this respect, as it is only necessary to look at the tables in the reports of the Commissioners in Lunacy, or in any asylum report, to see that between one-fourth and one-fifth of the male cases of insanity admitted annually to asylums are attributed to alcohol. Dr. T. S. Clouston, in the report of the Morningside Asylum for 1899, speaks of alcoholic excess having been the cause of insanity in 25 per cent. of the cases admitted. He remarks that few persons who had had an opportunity of studying the effect of alcohol on the brain would not heartily approve of most of the recommendations of Lord Peel's Commission. The Inebriates Act of 1898, he points out, has done very little good, and if there is to be legislation on the subject it should be effective. Even those who hold the liberty of the subject so sacred as to wish to leave the alcoholic to drink himself to organic disease or insanity and his family to poverty might at least turn their attention to the fact that nearly a quarter of the insane are so, either wholly or in part, from a preventable cause, and that in a large proportion of these cases the ratepayer has to bear the expense.

Closely related to this subject is the question of the relation of suicide to alcoholism. In a paper by Dr. W. C. Sullivan, deputy medical officer of Her Majesty's Prison, Pentonville, in the April number of the *Journal of Mental Science*, attention is drawn to the increase of suicide and of suicidal attempts concurrently with recent increase of alcoholism. He points out that the recent increase of suicide has coincided with a considerable increase of abortive suicidal attempts which have approximated to the type of alcoholic suicide in being more impulsive, more related to organic conditions in the individual, and occurring at an earlier average age than suicide from other causes. If his views be correct it is evident that alcohol is thus responsible for the loss to the community of many valuable lives in the period of early adult life. I hold, therefore, that it is our duty as medical men concerned with the care of the insane to point out, amid all the outcry about the increase of insanity, that with regard to alcohol at least there should be an opportunity, with proper legislation, of preventing a good deal of insanity, and that this Association should continue to urge the necessity of further legislation to check the ravages of that seductive but destructive poison.

## III.—THE CAUSATION OF GENERAL PARALYSIS BY SYPHILIS.

There can, I think, be very little opposition now to the statement that acquired syphilis is one of the most potent

[1] Journal of Mental Science, April,

[2] Ibid., April, 1899.

predisposing causes of general paralysis. While some observers hold that in every case of general paralysis, if the history be carefully taken, some evidence of syphilis will be found, the great majority recognise at least that even if a history of syphilis cannot always be obtained at any rate such a history is to be found in cases of general paralysis very much more frequently than in any other forms of mental disease. I intend to regard this preponderance of a history of syphilis in cases of general paralysis as an established fact and to lay down the proposition that if there were no syphilis there would be very little general paralysis. According to the report of the Commissioners in Lunacy for 1898 the yearly average number of general paralytics admitted to asylums, hospitals, and licensed houses amounted to 13·1 per cent. of the male cases and 2·8 per cent. of the female cases (Table XXIII.), while general paralysis was the cause of death in 1057 males out of a total of 4065, or more than one-fourth of the total male deaths, and in 265 females out of a total of 3513. Evidently in males at least general paralysis is a most serious cause of death in asylums, and moreover it kills those chiefly who are in the prime of life. It is, therefore, most important that no stone should be left unturned to stay this waste of life. It is well known that general paralysis occurs most frequently in towns where syphilis, alcohol, and fast living are most rife, and no doubt one of the most important measures is to train the dwellers in towns in habits of self-control and to teach them to lead physiological lives; but there seems no reason why the Legislature should not take some steps to check the spread of such a potent poison to the nervous system as syphilis as it has already done in the case of the infectious fevers. It was formerly held that the general paralytic did not transmit the disease to his children, but in the last few years many cases have been recorded of "juvenile general paralysis," in practically all of which there had been found to be a history of parental syphilis,[3] and in many of these cases the father had previously died from general paralysis. It cannot be said, therefore, that the syphilitic general paralytic is not a danger to his offspring, and so a further waste of valuable lives takes place. In my opinion, if syphilis were made a notifiable disease and the chances of its spread diminished, we should see a corresponding diminution in the number of cases of general paralysis. I am well aware that any suggestion to control syphilis, or in fact any venereal disease, by legislation meets with opposition from a section of the community, but it is well to refer to the fact that in Finland, as the result of the hospital treatment of syphilis and the power given by the Legislature enabling the compulsory examination of any suspected individual, syphilis has much diminished in the course of 20 years, that congenital syphilis has become less frequent, and that both the hereditary and acquired forms have become of much milder type.[4] Dr. Drysdale,[5] in a paper on the "Norwegian Bill for the Prevention of Venereal Diseases," calls attention to the existing law in that country requiring practitioners to notify the existence of any case of venereal disease to the medical officer of health but without giving the name of the patient, and suggests that such simple notification would at least "for the first time in the history of these contagions, afford a basis for calculation of the extent to which they prevail among the population of the United Kingdom." He further says: "Eventually I believe that the danger to public health caused by these extremely prevalent contagions will result in punishment of persons who, knowing themselves to be infected, carelessly, or even without any compunction, are heartless enough to put themselves in the way of infecting other persons with their contagion." In my opinion general paralysis should be looked upon as a preventable disease, and I feel strongly convinced that were syphilis controlled this truly malignant degenerative disease of the nervous system, which at present seems to defy all treatment, which adds so largely to the deaths in asylums, which mainly affects men in the prime of life, and which may also affect their children by means of hereditary syphilis, would to a great extent disappear. In all probability, however, the public mind is not prepared for any legislation on the subject.

I have merely attempted to call attention briefly to what I consider to be preventable causes of insanity, and of the importance of prevention rather than cure I think there can be no doubt. Whether the ensuing century will be marked by an arrest of insanity at its sources is, however, a matter on which we cannot speak with any certainty, but it seems to me to be the direction in which our efforts should tend.

[3] Mott: On Twenty-two Cases of Juvenile General Paralysis, Archives of Neurology.
[4] Brit. Med. Jour., March 10th, 1900.
[5] Ibid., Feb. 3rd, 1900.

# THE REMOTE RESULTS OF STRUCTURAL LESIONS ("INTERVENTIONS SANGLANTES") IN URETHRO-STENOSIS.[1]

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I HAVE been asked to report to this Congress on the remote effects of structural lesions (*interventions sanglantes*) employed in the treatment of stricture of the urethra. I think it will be generally admitted that these results are mainly determined by the nature of the wound and the circumstances under which it healed. For instance, incised and contused wounds and wounds that heal without any or with much inflammation, or with little or no provision for drainage, may be expected to yield different results. For this happens in all parts of the body. But in estimating the results of structural lesions of the urethra we must never lose sight of the fact that this canal conveys for several inches, at varying intervals, a compound and complex fluid which, under certain conditions not very clearly defined, is capable of exercising a highly poisonous effect on the tissues and fluids of the body with which it may accidentally come in contact. This is evidenced by the frequency of rigors and fever not unlike a malaria after slight lesions, such as passing a catheter or dividing a stricture, by the sudden suppression of urine which is sometimes similarly occasioned, by the happening of serious, if not fatal, septicæmia later, and more remotely by the formation of a contractile scar at and about the seat of the wound. Surely we may say that the pathology of the urethra is a unique one.

To compare their results it will be necessary to define with some accuracy the kinds of wounds that preceded and their probable process of healing. For the purposes of this report the following varieties have been examined and carefully studied both during life and, as opportunity offered, after death: (1) lacerated or contused wounds as follow such methods of divulsion as were practised by Perrève[2] in Paris and Holt[3] in London; (2) incised wounds from within the urethra as illustrated by Maissonneuve's[4] and other kinds of internal urethrotomy; and (3) incised wounds from without inwards as described by Syme[5] of Edinburgh under the name of "external urethrotomy" or perineal section.

1. Wounds inflicted by instruments for rapidly causing divulsion or rupture of a stricture are usually of a contused or lacerated character. When thus employed, unless the stricture is an annular or a ring-like one, a condition which is rare, the canal usually gives way at a point in its circumference where the resistance is least, and this is naturally not the densest portion of the contraction. Hence these operation wounds heal not unlike accidental lacerations of the urethra from injury, and in both instances the liability to stricture and to its recurrence is considerable. This was found to be so in cases examined both during life and after death and repeated operations by divulsion appear to have been followed by additions to the amount of contractile scar-tissue at or about the seat of stricture. There is, however, a form of stricture where divulsion is not open to these objections as judged by its more remote effects. Reference is here made to what are known as peri-urethral or sub-mucous strictures. My attention was first called to them some years ago by examining a patient who died from some other cause shortly after (within a week) a tight stricture in the deep urethra had been

[1] A paper read before the Thirteenth International Congress of Medicine in Paris on August 8th, 1900.
[2] Traité des Retrecissements Organiques de l'Urètre. Emploi Methodique des Dilateurs Mécanique dans le Traitement de ces Maladies, Paris, 1847.
[3] On the Immediate Treatment of Stricture, London, 1861.
[4] L'Urethrotomie Interne, Paris, 1879.
[5] On the Treatment of Strictures by External Incision, 1851.

divulsed by Holt's method. The stricture was found to be peri-urethral and it thus compressed the mucous coat as a ligature round it would do. The effects of the divulsion had been to rupture the fibres of the stricture whilst it left the mucous lining almost intact. Mr. Christopher Heath[6] has also recorded a similar observation. I am inclined to think that the consequence of its casual application to this class of cases and the excellence of the results was that Holt's operation attained a position regarding the treatment of strictures generally which it hardly appears to have merited. No better result relative to the permanency of the cure can be desired than this and if it were possible to limit divulsion to peri-urethral strictures I believe this operation would still be frequently employed. I have examined several urethras many years after Holt's operation had been performed where the canal had maintained its full measurements and no trace of a lesion of the mucous membrane could be found. We may claim these as instances of the successful treatment of stricture by subcutaneous, or rather submucous, methods.

2. The remote effects following internal urethrotomy are of a variable character, arising mainly from the nature of the cicatrix or scar-tissue that follows the operation. In some instances I found from examination after death several years afterwards that no signs of the original stricture were discoverable either in the mucous membrane itself or in the submucosa. As far as I could ascertain the incision made by the urethrotome had soundly healed without leaving any mark or contraction. As illustrating this class of cases I will select one that has recently come under my observation where the previous history was well authenticated throughout. It was that of a man, aged 53 years, whom I saw in February, 1900. He was operated upon in 1883 by the late Mr. Berkeley Hill for a stricture in the deep urethra which would only then admit a filiform bougie. Internal urethrotomy was performed. I saw and examined this patient with Mr. C. B. Lockwood, who had been personally aquainted with him throughout. I could find no evidence of stricture. The patient had ceased to use a bougie for some years. There could be no question that this man had been permanently cured by the operation.

On the other hand, the majority of instances examined showed in varying degrees that a tendency to relapse occurred within a few weeks or months after the operation, even where patients had endeavoured to prevent this by the use of a bougie. In these, for the most part, there were signs that the wound inflicted had probably been an irregular or jagged one, more resembling a lacerated wound than an incised one, and not what would be expected from a well-constructed urethrotome. Further, the resulting cicatrix often presented an appearance not unlike what happens after a burn of the second or third degree, or as I have seen following electrolysis for stricture.

In some instances of recurrence after internal urethrotomy it was apparent that this operation had only partly divided the stricture. From the evidence that was afforded by this class of cases it was concluded that the combination of partial incision of a stricture by internal urethrotomy, followed immediately by stretching of the wound thus made by divulsion or bougies, did not yield good permanent results. It was in some of these cases that recurrence took place most speedily and in an aggravated form.

3. The third group of cases examined were those where the stricture was divided from without inwards on a grooved staff in accordance with Syme's description of external urethrotomy or perineal section. In several instances where this operation had been practised some years previously I found no recurrence had occurred, though the use of a bougie had practically been discontinued. I have recorded[7] a case where a patient, aged 46 years, had been operated upon by external urethrotomy for stricture and urinary fistulæ by a former colleague of mine in 1867. He died 18 years afterwards, and on examining his urethra I could find no sign of stricture. The dimensions of the canal along the line where the section had been made were larger than the rest. The patient had not been in the habit of using a bougie since the operation.

It will not be necessary further to illustrate the permanent advantages that have followed perineal section in some cases of urethral stricture. In restoring and preserving the normal dimensions of the canal and in rendering catheterism easy where previously it was difficult its advantages must be apparent in cases to which it is applicable, and these include some of the worst varieties of stricture. If performed without a guide the prospect of a good result is very small. Where practised successfully it was not easy to determine how much of the permanent good that resulted was due to the complete division of the stricture and how much to the drainage which the external wound provided; but it seemed probable that both contributed to this end.

Taken as a whole, these investigations support a conclusion that most strictures treated in the three ways referred to, showed a tendency to re-contraction in varying degrees. In some this liability was easily counteracted by the use of bougies after the operation, though practically it could not be said that there was any time limit to this expedient. In others the tendency to relapse was so rapid and strong as to require repeated operations to maintain the dimensions of the canal, or even to necessitate the formation of a urinary fistula in place of the urethra. In a few instances, after rapid divulsion, internal urethrotomy, and perineal section or external urethrotomy, the evidence was conclusive that a permanent cure had resulted, and in such cases the subsequent use of a bougie appeared precautionary rather than necessary. It must, however, be stated that, compared with the large number of stricture cases which were investigated for this purpose, and where the observations extended over a considerable number of years under favourable circumstances for conducting such an inquiry, the instances last mentioned were rare. These conclusions will, I think, correspond with the experience of most surgeons.

I take it that the object of this report is not merely to reiterate a foregone conclusion but to explain, if possible, how these variations may have happened, and how both good and indifferent results may alike contribute to advance knowledge in connexion with this subject. In examining the lesions thus made for the treatment of certain forms of stricture by urethrotomy, and I include both varieties of operation under this term, it was evident that some of them had been faulty in their application and in their construction relative to the process of healing which would follow. In a few instances appearances indicated that the incision or incisions had not been accurately applied to the constriction, that the urethrotome had lacerated rather than cut, that several wounds had been made in various directions, and thus by scar-tissue the obstruction was rather added to than lessened by what had been done. This was probably directly due to faulty instruments in the case of internal urethrotomy and to want of precision and completeness in carrying out the details of perineal section. Though some failures may be accounted for in these ways, more were evidently due to the conditions under which healing proceeded after the operation. Many of the incisions that were made for the purposes of internal urethrotomy were inadequately provided with means for proper drainage, having regard to their extent, whilst some cases of perineal section or external urethrotomy were hardly any better off in this respect.

About the time I commenced to make these observations on a somewhat extended scale internal urethrotomy was being practised with a very free hand. The late Professor Otis of New York had recently formulated his views relative to the male urethra which to some extent were responsible for this. Though fully recognising the value of his work in demonstrating the greater capacity of the male urethra and the important influence that this had on the new lithotrity or litholapaxy which Bigelow was developing in the wake of Otis's investigations, I could not follow him in the practical application of it, in its entirety, to the treatment of stricture. However, it tended in the direction of increasing the range of internal urethrotomy as well as the size of the wounds thus made, but I cannot say that it proportionately added to the number of cures in chronic stricture of the deep urethra. It struck me in examining cases which had been thus operated on some years previously by various surgeons where the stricture had recurred that the size or depth of the wound so made was out of proportion to the facilities for drainage, whilst healing was going on, which the urethra alone afforded. In the absence of the latter condition I recognised one reason for the contractile condition of the scar that resulted. In arriving at this conclusion I was much influenced by what I had observed in connexion with the treatment of accidental lacerations of the deep urethra by perineal incision and drainage.

It may be generally stated that the worst forms of strictures are those following laceration of the urethra, and considering the circumstances under which such lesions usually heal this is not to be wondered at. Repair goes on slowly under the

[6] Brit. Med. Jour., July 17th, 1869.
[7] Surgical Disorders of the Urinary Organs, fourth edition, p. 100.

irritating influence of constant contact with confined urine, and excessive exudation about the seat of the wound takes place. This eventually, in conjunction with the irregularity caused by the wound, forms a stricture of the closest and most contractile character. On the other hand, in cases where perineal section and drainage were applied, this either did not happen at all or to a much more limited extent. In some instances where this principle was adopted in the case of ruptures of the deep urethra, healing took place just as kindly as it usually does after a median cystotomy, and no stricture followed. This I proved in many instances. It seemed reasonable to conclude that the treatment of stricture by section, or division of the stricture, might be improved by providing better drainage for urine and the discharges from a wound which can only be imperfectly treated antiseptically.

I am now aware that the influence of urine-drainage and irrigation in relation to the healing of wounds of the urethra and the kind of scar-tissue that results have ever been adequately discussed in connexion with the operative treatment of urethral stricture. With the view of meeting what I consider to be causes of failure and recurrence following some operations, I published[8] a series of cases and observations where I had combined the principles of internal and external urethrotomy in the treatment of certain forms of urethral stricture which on the whole have afforded good results. I shall best illustrate this practice by a typical case which was recorded and watched for a considerable number of years.

A man, aged 51 years, whom I saw and operated upon in 1890, had been the subject of a stricture with a strong tendency to contract for some years, and had undergone no less than six operations for it, including a divulsion by Holt's method, and five internal urethrotomies at various intervals and places. For some months before I saw him the stricture had been contracting and closing in spite of the patient's well-directed efforts with suitable bougies to keep it open. Straining to urinate was constant and prevented continuous sleep, and there was some cystitis with probably pyelitis. I performed an internal urethrotomy with Teevan's modification of Maissonneuve's instrument, as I thought that the latter might not stand the strain put upon it by the cartilaginous character of the tissues which had to be divided. This being done I passed a full-sized grooved staff (No. 12 English) into the bladder. As the staff was evidently gripped in the deep urethra the patient was placed in the lithotomy position and I divided in the median line from without inwards such contracted tissues as remained. I thus opened the urethra and found by passing my finger first into the bladder and then hooking it forwards along the urethra in the direction of the penile orifice that the walls of the canal had now been rendered free and unresisting. A full-sized gum-elastic drainage-tube such as I have elsewhere described[9] was passed into the bladder through the wound and retained. The parts were washed out with a solution of perchloride of mercury (1 in 6000). The stiff drainage-tube was withdrawn on the sixth day and a soft rubber one fitted with a tap for the voluntary withdrawal of urine was substituted which was worn for a fortnight longer and then finally removed, when the wound soon healed. Ten years have now elapsed since this operation was practised. The patient remains in good health and suffers no further inconvenience from his urinary organs than having occasionally to pass a full-sized bougie for himself.

It may be thought that the retention of a catheter in the bladder for some time after an internal urethrotomy has been practised is to be preferred to an external urethrotomy, and a perineal tube for drainage alone. In some instances the former may suffice, but in the majority of cases where a urethrotomy becomes necessary it will be found an imperfect substitute. The mechanism for the retention of a catheter along the whole length of the urethra and the irritation it excites are often obstacles to the successful employment of this expedient.

The conclusions arrived at from the examination of structural lesions used in the treatment of urethral strictures as detailed in the foregoing remarks may be summed up as follows.

1. That there is evidence to show that in peri-urethral strictures of the deep urethra the effects of divulsion as practised in Perrève's and Holt's operations may be limited to rupturing the dense stricture bands in the submucosa of the urethra, whilst the mucous membrane itself escapes any serious injury or laceration and is merely restored by stretching to its original dimensions. Here a permanent cure may result. On the other hand, where the mucous membrane is in itself the seat of stricture and forms part of the latter structurally it is necessarily torn or lacerated by the process of a sudden divulsion, and the pathological condition consequently becomes assimilated with that of traumatisms of the urethra from external violence accidentally applied which are followed by strictures of the most contractile and recurrent form.

2. That there is evidence to indicate that where the entire thickness of a stricture can be included within an incision of moderate dimensions made by an internal urethrotome the normal calibre of the urethra may be completely and permanently restored. Where this happens it may be concluded that all the fibres of contraction constituting the stricture were divided at the time of operation. And further that the converse is equally true. There is also evidence to show that the absence of recurrence under such circumstances is not necessarily dependent on the use of a bougie, though the latter is a precautionary measure which should invariably be advised.

3. That in the case of multiple strictures or strictures of the deep urethra of considerable dimensions either in their length or thickness treated by an internal incision of corresponding proportions, apart from other considerations, the tendency to recontraction and recurrence, with an additional amount of cicatricial material, is frequent; the latter being probably due to the circumstances under which healing takes place in wounds of these dimensions so situated.

4. That lesions of the urethra demonstrate in various ways the poisonous effects that unprotected and confined urine is capable of exercising both on the body generally and on the tissues in contact with it, and that the liability to such effects is greatly diminished where drainage and irrigation render these conditions of the urine unlikely.

5. That in the case of recurring strictures previously treated by incision and in primary strictures of such length or extent as to require an internal section of a corresponding size, or as to which there might be doubt as to whether it would be safely possible so to include them, for the purposes of the operation and its results such wounds should be made with due regard to other surgical principles in addition to the one pertaining to the division of the contraction.

6. That there is direct evidence to show that the tendency to recontraction and recurrence of stricture after internal urethrotomy is largely diminished by the concurrent employment of systematic and efficient urine and wound drainage such as the combination of external urethrotomy, or perineal puncture, affords.

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[8] Brit. Med. Jour., July 18th, 1885. [9] Op. cit.

# THE INDICATIONS OF THYROTOMY.[1]

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WHILST it is in the nature of things that thyrotomy can never be an everyday operation, it cannot be gainsaid, I think, that hitherto it has additionally been anything but a popular one. The reasons of this are not far to seek. Previously to the invention of the laryngoscope the indications of opening the larynx were so very obscure that the number of thyrotomies known to have been performed in pre-laryngoscopic times is exceedingly small.[2] When with the introduction of the laryngoscope a period of greater activity and wider applicability seemed to be in store for thyrotomy a very formidable rival to it arose almost immediately in the shape of intra-laryngeal surgery. This rival vigorously, and on the whole victoriously, contested the

[1] A paper read before the Thirteenth International Medical Congress in Paris.

[2] With regard to the history of the operation, and indeed with regard to all details concerning the operation itself upon which I am unable in the limited time at my disposal to enter, I would refer to the excellent monograph on Laryngotomie written by Professor Max Schüller of Greifswald in Billroth and Luecke's Deutsche Chirurgie (Stuttgart, Ferdinand Henke, 1880).

propriety of the external operation with regard to two of its most important indications—viz., the removal of foreign bodies and the removal of benign new growths from the larynx—and succeeded in limiting its performance in these classes of cases to a very insignificant number. Shortly afterwards another of the most important indications of thyrotomy—its performance in cases of malignant disease of the larynx—was strongly assailed by Professor Paul Bruns in his well-known monograph, "Die Laryngotomie zur Entfernung endolaryngealer Neubildungen."[3] The conclusions which he drew from the statistical survey of the thyrotomies which had until then been performed for the removal of cancer and sarcoma were so convincing and at the same time so adverse to the performance of the operation that they were tantamount to its complete condemnation in cases of that sort. Only quite recently has the operation begun to recover its position. At present an era of far greater usefulness is, I believe, dawning for it, particularly in certain cases of malignant disease of the larynx. I shall be glad if the proposals which I am going to make and the discussion which will follow should contribute towards that goal.

Two short remarks are required before I enter upon my subject proper. 1. In discussing nowadays the "indications of thyrotomy" it is imperatively required to discard from one's mind antiquated notions about its dangers and drawbacks. The number of improvements in the technique of the operation itself and of its after-treatment, on which my friend and co-reporter, Professor Dr. Schmiegelow, will no doubt dwell in his introductory remarks, have done away with many of the objections which only 12 years ago were justified enough. It is therefore possible at present to recommend the performance of thyrotomy under circumstances in which in previous times such recommendation would have been unjustifiable. 2. In speaking of the "indications of thyrotomy" it must always be kept in mind that, with a few exceptions, the indications of this operation are not *compulsory* but merely *facultative*. In other words, in the great majority of circumstances in which the performance of thyrotomy comes into question other means of dealing with the case in question may be substituted.

The indications, then, which at the present stage of our knowledge present themselves to my mind for the performance of thyrotomy are: (1) foreign bodies in the larynx; (2) injuries to the larynx; (3) laryngocele; (4) stenosis of the larynx; (5) acute laryngeal perichondritis; (6) laryngeal tuberculosis (including lupus); (7) scleroma of the larynx; and (9) new growths in the larynx—(*a*) benign, and (*b*) malignant.

1. *Foreign bodies in the larynx.*—I do not think that there will be much divergence of opinion as to the mode of procedure in the event of a foreign body having been impacted in the larynx. Should the foreign body be comparatively small, not too angular, not possess many sharp hooks and edges, and not cause any respiratory difficulty, everybody nowadays will probably in the first place attempt to remove it *per vias naturales*. Should this be impossible on account of the size or the form of the foreign body, or of its firm impaction in the soft laryngeal tissues which might lead to their being lacerated in the event of forcible intra-laryngeal removal, or should œdema or considerable dyspnœa be present, either tracheotomy ought to be performed and an attempt be made to dislodge the foreign body from the tracheotomy wound, or subsequent intra-laryngeal attempts at removal might be made, or finally, thyrotomy might be at once performed. In this question no dogmatic rule can be laid down; every individual case must be treated on its own merits. There is one point, however, with regard to which a note of special warning must be sounded. Under no circumstances is it advisable to allow a foreign body to remain impacted in the larynx for any length of time even if at first it does not produce any serious symptoms. I have seen and recorded several cases in which a neglect of that kind led either to perichondritis, ankylosis of the crico-arytænoid articulations and lasting disablement of the organ, or to the sudden dislodgment of the foreign body and its entrance into the lower food and air passages, with serious consequences resulting.[4] Considering that thyrotomy in a healthy person is at present an operation of but small risk I should not now, if my attempts at intra-laryngeal removal failed or if the case from the first were not suitable for this method, hesitate to perform thyrotomy with or without preliminary tracheotomy according to the special requirements of the case.

2. *Injuries to the larynx.*—In cases of severe fracture of the larynx, bullet-wounds, or suicidal injuries it has been repeatedly proposed to perform thyrotomy in order to replace the dislocated fragments, and, if necessary, to retain them in position by a tube introduced either through the mouth or from the tracheotomical opening. The reasonableness of this indication cannot be doubted, and the operation has been performed in a few cases with excellent results, but the indication, needless to say, is likely always to remain a rare one.

3. *Laryngocele.*—Laryngeal air-cysts, themselves extremely rare, still more rarely cause serious symptoms. In a case described by Benda and Borchert,[5] however, sudden inflation of a laryngocele ventricularis caused death by asphyxia. Should the symptoms, therefore, be threatening, thyrotomy followed by extirpation of the cyst would be indicated, as already successfully practised by Ledderhose.[6]

4. *Thyrotomy in stenosis of the larynx.*—It is likely that thyrotomy will be performed more frequently in cases of stenosis of the larynx than hitherto when once the still prevailing impression has been corrected that thyrotomy is a risky and difficult operation. Any of the manifold causes of stenosis of the larynx—cicatricial contraction from ulceration of the mucous membrane; perichondritis, particularly of syphilitic origin; hyperplastic inflammatory processes; congenital webs; adhesions between the vocal cords, ventricular bands, or other parts of the larynx, from external wounds, scalding, syphilis, typhoid fever, and a host of similar causes—may produce considerable narrowing, or even complete obliteration of the larynx. A number of these conditions will be, no doubt, accessible to intra-laryngeal surgery. In another class intubation by either Schrötter's or O'Dwyer's tubes, when patiently used, will be productive of excellent results; but a number of cases will remain in which neither of these two methods can be made use of at all or in which, for external reasons, it is impossible to continue it for a sufficiently long time to prevent re-formation of the narrowing, a contingency which, it is well known, is unfortunately but too frequent. It is in this class of cases that I think there is a future for thyrotomy. Particularly in cases of hypertrophic stenosis, with enormous fibroid thickening of the mucous membrane, excellent results may be obtained, as I have twice seen in cases operated upon by this method in St. Thomas's Hospital by thyrotomy and bold excision of the hypertrophic masses. Hitherto such cases have remained either entirely unrelieved, the patient having to wear a tracheal cannula for the rest of his life and his voice being reduced to an almost inaudible whisper, or patients have had to undergo an intubation treatment extending over many months with the penalty attached to it that even a short interruption threw them back to the very beginning. Thyrotomy in suitable cases undoubtedly relieves more quickly, but here again I need not say that I do not recommend a wholesale performance of the external operation, but think it must be left in every individual case to the judgment of the medical attendant which method—intra-laryngeal operation, intubation, or thyrotomy—is most likely to lead to a satisfactory result. It also ought to be clearly understood that in some cases of great fibroid obstruction of the interior of the larynx, particularly of syphilitic origin, even if the result of thyrotomy at first be all that can be desired, occasionally renewed thickening takes place, sometimes after the lapse of a year or more. A case of this kind was recently shown by Mr. Spencer before the Laryngological Society of London.[7]

5. *Acute laryngeal perichondritis.*—The indications for thyrotomy in acute laryngeal perichondritis, in spite of Schüller's warm recommendation,[8] have never been generally accepted and are likely to remain extremely rare. According to Schüller, thyrotomy ought to be performed already in the first stage as well as in the further course of perichondritis in order to treat the perichondritis itself through the laryngotomical opening in a suitable manner—i.e., by

[3] Berlin, Aug. Hirschwald, 1878.

[4] Some Practical Remarks on Foreign Bodies in the Upper Air and Food Passages and on the Principles of their Removal, Medical Chronicle, April, 1885.

[5] Laryngocele ventricularis als Todesursache, Berliner Klinische Wochenschrift, 1897.

[6] Laryngotomie wegen intralaryngealer Luftcyste, Deutsche Zeitschrift für Chirurgie, xxix., p. 4, 1889.

[7] Proceedings of the Laryngological Society of London, 1900, p. 62.

[8] Deutsche Chirurgie, von Billroth und Leucke, 1880, Lieferung 37, p. 153.

incision, extraction of necrotic parts of cartilage, and aseptic treatment of the perichondritic abscess. Unfortunately, it is very difficult, and likely to remain so, in many cases of acute perichondritis to say definitely which cartilage is the actually diseased one, and the fear of producing by the performance of thyrotomy additional undesirable complications is more than a theoretical one. Occasionally, however, as in a case of my own,[9] real good may accrue from thyrotomy being resorted to in time in acute laryngeal perichondritis, and its performance in this class of cases deserves, I think, to be more frequently thought of than apparently it is at present.

6. *Laryngeal tuberculosis (including lupus).*—Of late years thyrotomy has been repeatedly performed in cases of laryngeal tuberculosis, and Dr. Goris, who has probably paid more attention to this subject than anybody else, has formulated its indications as follows.[10] "Thyrotomy," he thinks, "is optional in circumscript lesions, and even preferable in tubercular patients whose general state of nutrition is good, even if their lungs should be much affected. It is not desirable in tubercular patients, whose state of health is bad, or whose whole larynx is deeply affected." Undoubtedly cases occur in which intra-laryngeal surgery does not succeed in removing by curetting or similar proceedings even circumscript laryngeal tuberculous lesions, because they are not favourably situated for intra-laryngeal interference. In such cases if the general state of health be good thyrotomy would be entirely legitimate and, as Dr. Goris's results and one obtained by myself show, laryngeal lesions in such cases may be lastingly cured by that operation. There is, however, one very serious drawback to the employment of thyrotomy in this class of cases which ought to be before the mind of every operator—viz., the danger of tuberculous infection of the wound. In my own case just referred to, in which I performed thyrotomy, the laryngeal lesion was quite cured after thyrotomy had been performed, the ulcerating surface removed, its bottom scraped, and pure lactic acid applied, and the cure remains permanent now—i.e., fully three years after the operation. But this satisfactory result was at first greatly marred by the external wound becoming tuberculous and fistulous tracts forming all over in front of the larynx and the trachea. Finally reopening of the old scar and an extensive operation became necessary in order to thoroughly remove the parts which had become infected with tuberculosis in the course of the operation. At the time I thought that this was a very exceptional surgical misfortune. On studying, however, Dr. Goris's valuable contribution just referred to I found that the same mishap occurred in all his four cases, and it seems, therefore, legitimate to conclude that tuberculous infection of the wound is a danger which must be seriously reckoned with in this class of cases.

As to lupus of the larynx, thyrotomy has, so far as I know, but once been performed for that disease. In the "Handbuch der Practischen Chirurgie," by von Bergmann, Bruns, and Mikulicz, I see it stated that Brondgeest has obtained a cure in a case in which he performed sub-hyoid pharyngotomy combined with laryngotomy.

7. *Scleroma of the larynx.*—In this rare affection thyrotomy, occasionally to be followed by methodical dilatation, appears to be the sovereign operation. Pieniazek, according to his own statements,[11] has performed the operation in no less than 130 cases, "mostly on account of laryngo-scleroma, and considers it the quickest and most reliable method of dealing with this troublesome disease." Recurrences are not excluded but seem to occur much later and in longer intervals than after the use of other methods.

8. *New growths in the larynx.*—(*a*) Benign growths.—The principle for the removal of benign laryngeal growths which at present is almost universally accepted is to the effect that no external operation should be performed unless an experienced laryngologist has unsuccessfully endeavoured to remove the growth *per vias naturales*. Broadly speaking, I think this principle to be a sound one and to hold good now as much as ever. At the same time, in the light of the experience gained within the last 30 years, it appears to me that one ought not to be too dogmatic, and that in an individual case the observer's own judgment ought not to be too blindly subordinated to generally accepted canons. Undoubtedly in the enormous majority of benign laryngeal growths a competent specialist will be able, particularly since the introduction of local anæsthesia by means of cocaine, to satisfactorily effect removal by intra-laryngeal operation. Still, there are exceptions to this rule. Thus, above all, cases of multiple papillomata in small children form a group the possession of which has by no means been ceded by the surgeon to the laryngologist. It is true that here again the intra-laryngeal method has made considerable progress within the last few years. Kirstein's method of direct laryngoscopy and Scanes Spicer's introduction of the combination of general anæsthesia by means of chloroform with local applications of cocaine to the pharynx, whereby the troublesome salivation which formerly was the greatest obstacle to the performance of intra-laryngeal operations under a general anæsthetic is prevented or, at any rate, greatly diminished, have greatly facilitated the performance of intra-laryngeal operations even in small children and in towns of sufficient size to support the existence of a laryngologist and in large hospitals in which every possible assistance and after-care are warranted even in the cases of small children attempts at intra-laryngeal removal of multiple papillomata nowadays ought to precede if possible external laryngeal operations. But unfortunately cases of this sort will occur where no favourable conditions for intra-laryngeal removal exist and the grave question arises, What is to be done under such circumstances? Personally I should be in favour of mere prophylactic tracheotomy being performed and of the child wearing its tube until it had grown up sufficiently to assist intelligently at subsequent efforts at intra-laryngeal removal of the growth. But a former colleague of mine at St. Thomas's Hospital has drawn my attention to a contingency of which, if I remember rightly, he had seen a sad real illustration. Cases of this sort unfortunately not rarely occur in children of poor parents who are compelled to leave their children to themselves whilst both father and mother are following their occupations. Supposing there were several children in a house one of whom, for the reason now under discussion, was wearing a tracheal cannula, and that during play or a childish quarrel its tube was torn out from its throat, speedy death from suffocation might supervene before help could be afforded. The possibility of such an occurrence ought not to be lightly dismissed from one's thoughts, and if it be present I would rather, though not cheerfully, agree to the performance of thyrotomy than leave the child for years under the shadow of an almost ever-present danger. Should thyrotomy be resorted to under such circumstances one ought not to flatter oneself with the idea that by gaining easier access to the growth with the performance of laryngotomy a greater guarantee against recurrence would be offered than by the employment of the intra-laryngeal method.

Cases abound in laryngeal literature in which thyrotomy has had to be performed over and over again in cases on multiple papillomata in children, and an experience of my own which strongly bears upon this question has shown me the utter futility of the belief that in cases of a tendency to papillomatous degeneration this tendency can be eradicated by external operation. This experience refers to a case which I have reported in the *Archiv für Laryngologie*, vol. vi., Heft 3. It was the case of a man, aged 64 years, in whom I performed thyrotomy with removal not only of the growth, but also of the healthy zone in its entire neighbourhood, on account of what was supposed to be an epithelioma at the time of the operation. The removal, needless to say, was much more thorough than one would ever aim at in a case of benign papilloma. Nevertheless, four years later, practically the whole larynx of this patient was in a condition of papillomatous degeneration. If such an event could occur after so radical an operation, how much more likely will the occurrence be after mere thyrotomy and removal of the innocent growth in a case in which thorough removal of the healthy neighbourhood can hardly be considered permissible. It would not, therefore, be with a light heart that I would ever agree to the performance of thyrotomy for multiple papillomata in children, and cases in which it ought to be performed will certainly be very scarce. I did, however, not wish dogmatically to exclude altogether the propriety of its performance under certain exceptional circumstances, such as mentioned before. Another exception to the general rule named at the beginning of this paragraph may occur in cases of exceptionally large mobile laryngeal growths which may become suddenly impacted in the glottis and cause death before relief can be afforded. Such a contingency will

[9] Loc. cit.

[10] La Thyrotomie dans la Tuberculose du Larynx, Annales de la Société Belge de Chirurgie, No. 7, 1898.

[11] Heymann's Handbuch der Laryngologie, vol. i., p. 1326.

no doubt be extremely rare, but, as I know from sad personal experience, it may become a grim reality. An isolated case of that sort will not, of course, supersede the general accumulated experience of so many years, but if a similar case should again come under my notice I should certainly not persevere as I did with my endeavours at intra-laryngeal removal, but should after one or two failures either perform prophylactic tracheotomy and then resume intra-laryngeal operations or, more probably, should at once perform thyrotomy and remove the growth from the external wound.

(*b*) Malignant growths.—The last indication of thyrotomy which I have to discuss I believe to be both the most frequent and the most important one—viz., its indication in the early stages of intrinsic malignant neoplasms of the larynx. I have already mentioned that the operation in cases of malignant disease had been totally discredited in 1818 by the statistical monograph of Paul Bruns. Three years ago I endeavoured to show [12] that the condemnation which Bruns at the time (1878) was fully justified in passing was due to the fact that the operation at that time was almost always undertaken at a stage when the disease was much too far advanced for this form of operation. But in spite of the fact that our diagnostic powers of the early stages of intrinsic cancer and sarcoma of the larynx have made enormous progress since those days, that the technique of the operation itself has been greatly improved, and that its results nowadays, in really suitable cases, are of the most encouraging nature, the operation, except in Great Britain, has not yet fully recovered from the universal prejudice raised against its performance 22 years ago. A few operators, such as Butlin, Chiari, Schmiegelow, and myself, have repeatedly of late years endeavoured to convince the profession of the enormous usefulness of thyrotomy in really suitable cases of malignant disease of the larynx. Unfortunately, however, our efforts have hitherto, as far as I can judge, been greatly interfered with (1) by recent statistics, which owing to their controversial compilation do not, I am convinced, represent the *real* achievements of modern thyrotomy, and (2) by the rivalry of the two methods which, as it were, form the opposite poles of possible surgical interference in the class of cases now under consideration—viz., the intra-laryngeal method and partial, or even total, extirpation of the larynx. I therefore warmly appreciate the selection of this subject for discussion at an international gathering of this character. It is quite true that not many arguments are likely to be advanced which have not already been made use of in recent papers on this question, and I personally shall refrain from reiterating at length my own views, partly on account of the limited time at my disposal and partly because I have said practically all that I could say in my various papers on the subject.[13] But a few facts seem to me to stand out so prominently, both from the results obtained by various methods and from the considerations which could be urged in favour or in disparagement of any of the rival methods of surgical interference now in use, that I wish in conclusion of my paper to lay them before you in as concise a form as possible.

We are all agreed, I take it, (1) that no internal medication of any kind has the least influence upon the course of malignant disease of the larynx, and (2) that surgical measures are the more likely to be permanently successful the sooner they are undertaken—i.e., at the time when the mischief is still purely local and not yet generalised. For the last-named purpose it is of the highest importance that the *early symptoms* of malignant disease of the larynx should be known *to every general practitioner*, and that the superstitions, unfortunately still too prevalent with regard to this question, should for ever be swept away. It ought to be generally known that the symptoms now usually associated in medical minds with cancer of the larynx—viz., cachexia, pain, swelling of the cervical glands, fœtor of the breath, and expectoration of blood—as a rule only occur in the *later* stages of the disease and may even be absent, one or several of them, till the very end of life. It ought to be generally known, on the other hand, that, just in those cases which give the very best chance and which are particularly suited for thyrotomy—i.e., in cases in which the disease begins on the vocal cords—the *only* objective initial symptom is usually hoarseness, and that if a person above the age of 50 years, particularly a man, has suffered for some length of time from some inexplicable dry hoarseness without any further symptoms his case ought to be considered suspicious enough to be subjected to laryngoscopic examination at the hands of an expert. When once these simple truths have become common property, malignant disease of the larynx will be much sooner recognised than, unfortunately, even now is the rule, and the proportion of lasting success from surgical interference in this terrible disease will become much greater than it is at present.

Now, if a suspicious growth be discovered in the larynx, a part should, if possible, be removed by intra-laryngeal operation and submitted to microscopical examination; should this, however, be impossible, or should the result of the microscopical examination be indecisive, the clinical observer must have the courage of his opinion and not wait too long until it is either too late altogether or until such drastic measures as partial or total extirpation of the larynx are the only means by which a cure can possibly be hoped for. Better, as I have said on a previous occasion, a thyrotomy performed where milder measures might possibly have sufficed than a life lost or a most serious and mutilating operation rendered necessary by waiting too long. I would therefore put it as a clear indication for thyrotomy that in all cases in which the presence of a malignant growth in the interior of the larynx, of a still circumscribed character, has either been definitely ascertained or has been rendered, at any rate, very probable from the clinical symptoms thyrotomy should be performed with a view to eradicating the disease by subsequent removal of the growth itself with a zone of surrounding healthy tissue. In those cases in which the disease is still limited and situated within the confines of the larynx proper, without the cervical lymphatic glands being as yet infiltrated, this simple operation will be found to suffice, not only for the radical extirpation of the disease, but also for the prevention of recurrences.

Without wishing to anticipate in any way the conclusions of my co-referee, Dr. Goris, I must state here, to justify my own attitude, that in my own private practice I have succeeded, by following these principles, in lastingly curing 83·3 per cent. of all the patients whom I have operated upon by thyrotomy. At the same time I wish again emphatically to repeat that such results can only be obtained by the selection of cases which are really suitable for this form of operation. Very advanced disease, infiltration of the cartilaginous framework itself, affection by contiguity of neighbouring parts such as the pharynx, tongue, or œsophagus, extensive infiltration of the cervical lymphatic glands, very old age, concomitant chronic and serious disease of the lungs or bronchial tubes may, of course, from various points of view, be so many contra-indications to thyrotomy in particular and to other external radical operations in general.

Every single case ought to be decided upon on its merits. No operator ought to start on his operation with the determination to perform only thyrotomy, and nothing else. If in the course of the operation the disease should be found to be more extensive than could have been judged by laryngoscopical examination the compass of the operation should either be changed into partial or even total extirpation of the larynx or the attempt at radical operation ought to be altogether abandoned. What I have particularly at heart is that thyrotomy should not again be discredited by being undertaken in *a priori* unsuitable or in much advanced cases. Its real sphere of usefulness lies in the early stages of true intrinsic cancer or sarcoma of the larynx. Personally I am convinced that intra-laryngeal surgery will never be able and, indeed, in its own self-understood interest ought not even to try, to rival thyrotomy in cases of malignant growths of the larynx.

The principle so universally acknowledged in surgery—viz., that operation for malignant disease can never be successful unless really radical—so much militates against the employment in this class of cases of intra-laryngeal operations, which, from the nature of things, do not afford

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[12] Zur Frage der Radikaloperation bei bösartigen Kehlkopfneubildungen mit besonderer Berücksichtigung der Thyreotomie, Archiv für Laryngologie, vol. vi., Heft 3, 1897.

[13] 1. The Results of Radical Operation for Malignant Disease of the Larynx, from the Experiences of Private Practice, THE LANCET, Dec. 15th (p. 1417), 22nd (p. 1474), and 29th (p. 1532), 1894. (This paper has been translated into French and published in the Supplement of No. 22 of the Revue de Laryngologie, Otologie, et Rhinologie, 1895.) 2. The paper already referred to in the Archiv für Laryngologie, 1897. 3. Die Thyreotomie bei bösartigen Kehlkopfneubildungen, Die Therapie der Gegenwart, April, 1899. 4. Einige Bemerkungen zu der neuen Sendziak'schen Statistik über die operative Behandlung des Larynxkrebses, Monatsschrift für Ohrenheilkunde, November, 1899.

a guarantee as to the thoroughness and completeness of the removal, that I honestly believe that, in the interest both of the operation and of the reputation of laryngology, in none but the most favourable cases should attempts be made to treat malignant disease of the larynx by endolaryngeal operation. I must frankly confess that even the reports of cases which have been successfully dealt with by intra-laryngeal operation have not been able to shake in the least my conviction going to that effect. The field is wide enough, in all conscience, for intra-laryngeal surgery without this very dangerous ground being contested.

On the other hand, there is ample scope for intra-laryngeal operations of the more extensive kind, such as partial or total extirpation of the larynx in cases in which the disease either has been *a priori* unsuitable for thyrotomy or in which the diagnosis has been arrived at too late for the minor operation to be undertaken with a reasonable chance of success. The results of Professor Gluck and others have shown us how much can be done by some operations in even apparently desperate cases, and I most heartily congratulate him and his followers on having by such operations saved life in an ever-increasing number of such advanced cases. But what I protest against is that these heroic measures should be undertaken in cases which do not really require them. There ought always to be some proportion between the degree of the disease and the operative measures undertaken to cure it, and from my literary studies on the subject I am seriously afraid that this principle has not been adhered to of late by every operator. Those who advocate thyrotomy in those early cases have been assured time after time that their endeavours were being followed with "sympathetic interest," but at the same time I regret to say that I have the impression as if their practical results were persistently ignored.

The time has now fully come when everybody should be capable of forming an opinion on this question, and if the results obtained be scrutinised with an unbiased mind I have no doubt that the chief indication for the employment of thyrotomy will in future be found in early intrinsic malignant disease of the larynx.

## A NEW DISEASE WITH A SPECIFIC URINARY REACTION.[1]

BY N. F. SURVEYOR, M.D. BOMBAY, M.R.C.P. LOND.

ABOUT the early part of October, 1899, a young Parsee woman received rather a nasty cut on the tip of the thumb of the left hand. There was much bleeding at the time and the wound had not healed up even at the end of the month. About Oct. 29th she complained of smarting pain in the left eye. There was slight congestion of the conjunctiva, to relieve which simple warm astringent lotion was applied to it. On the next day the patient was much the same; during the night, however, the left side of the face was considerably swollen. In the morning when I saw her there was some redness of the part. The swelling, which was rather œdematous in character, seemed to start near the region of the left parotid gland and to extend over the cheek, nose, lips, and eyelids of the left eye. It did not extend to the right side. The inside of the mouth was also somewhat swollen and tender. The tongue and the gums were not involved. The swelling had very slight tendency to extend on the right side near the lips. There was increase of conjunctival congestion and there was much lacrymation. The skin over the left ear was not so much affected. The whole part was covered with small pin-head-like vesicular eruption. There was much smarting pain and a sensation of heat was complained of. There was no rise of temperature, nor did it rise higher than 99° F. during the whole course of the disease. The wound on the thumb was found to be dry and had an unhealthy look about it. There were present a few fine vesicles on both hands. There was no swelling of the left hand nor was there any pain except near the wound. On closer examination a thin bleb was found at the root of the left thumb on the following day. This was opened and serous fluid escaped which did not show any micro-organisms under the microscope. Thinking that erysipelas was threatening I painted the swelling with tinctura ferri perchloridi, tinctura iodini and Ferris's linimentum belladonnæ in equal parts. This caused some temporary smarting; however, the swelling and pain were decidedly less after a time. Internally the following prescription was given: three drachms of liquor hydrargyri perchloridi, 15 grains of potassii chlorati, 15 grains of potassii iodidi, 15 minims of tinctura nucis vomicæ, one and a half drachms of tinctura chloroformi composita, aquam to three ounces, misce—fiat mist., divide into three doses, one every four hours. 31-10-1899. On the next day—i.e., Nov. 1st—the condition was much the same. Hoping to obtain some information I examined the urine, which, however, showed nothing unusual as regards the ordinary constituents, except that it was rather watery and poor in urea, uric acid, indican, and salts. However, on adding a drop of strong caustic soda solution to the centrifugalised deposit, with a view to testing for pus, I found that the urine assumed a bright, pinkish purple colour. Examination of the urine which had been passed during the whole course of the illness showed the same reaction with varying intensity. There seemed slight periodicity; thus, about from one to two hours after a dose of the mixture it happened to be more marked. Again, lighter coloured urine as a rule gave feeble reaction. The colouring matter was generally completely brought down by the precipitated phosphates and the fluid became almost clear on centrifugalisation.

The precipitate was scarcely, if at all, soluble in any of the solvents that I tried. Thus distilled water, alcohol, ether, turpentine, chloroform, xylol, benzol, and carbon bi-sulphide remained perfectly clear even after repeated shaking for days together. Glycerine seemed to take it up very slightly. The reaction could be obtained by adding any other alkali, thus caustic potash, ammonia, liquor calcis, chlorinated lime, and dilute hypobromite of soda produced the same reaction; excess of the last-mentioned, however, destroyed the pigment. Even strong acids destroyed the pigment-producing substance very slowly, and on alkalinising the urine the reaction was obtained after more than five months. Thus the addition of hydrochloric acid to the extent of making a 20 per cent. solution was not able to destroy the substance after 181 days. In this case it was noticed that the supernatant fluid gave the reaction very feebly, while the scanty brownish deposit produced the reaction readily. In another sample the reaction was scarcely perceptible after four months—in this case, however, I had no opportunity of testing the deposit. Heat did not destroy the reaction. The pigment under the microscope appeared to be made up of amorphous granules. The spectroscope did not show any absorption band. At the suggestion of Dr. Meyer, experiments with oxidising agents, like permanganate of potash and hydrogen peroxide, and with deoxidising substances, like stannous chloride, Stokes's fluid, sulphide of ammonium, yellow sulphide of ammonium, and ferrous sulphate, showed that the colour became faint in the presence of deoxidisers, while oxidation with hydrogen peroxide seemed to make the colour brighter at first, then it gradually became faint, but total destruction of the colour was not produced even after five months. Yellow sulphide of ammonium turned the solution yellowish; however, on the addition of hydrogen peroxide, feeble reaction was reproduced. The effect of ferrous sulphate, Stokes's fluid, and permanganate of potash was disguised by the coloured oxides that were precipitated, while the ammonia, present in sulphide of ammonium, interfered with the effect being well observed. Stannous chloride and hydrogen peroxide were the two chemicals which I found best suited for studying the effect. At the suggestion of Dr. Herbert I tried the effect of solution of iodine in potassium iodide. The colour of iodine masked the reaction and the deposit became whitish in character; in fact, this reagent acted as a deoxidiser; however, on neutralising the iodine with excess of caustic soda feeble reaction appeared, and on oxidation with hydrogen peroxide the intense reaction was at once produced. The observations for the presence of this reaction were continued till Nov. 17th, on which day a negative result was obtained.

On the night of Dec. 5th, 1899, the attack recurred. On the previous day there had been some pain in the left ear. This time the eye was less affected while the pain in the ear and

[1] A paper read before the Bombay Medical and Physical Society.

the swelling of the skin near it were more marked. On this occasion the swelling and pain were not so severe as during the first attack. This time the whole course was febrile like the first one. In other respects there was no difference noticed. This time there was no external wound on any part of the body, the thumb having quite healed up. Before any internal medicine was given I had an opportunity of examining the urine and the same reaction was obtained. On this occasion there was a slight trace of albumin and it was found that saturating with neutral ammonium sulphate produced a dirty grey amorphous deposit. This was filtered, and the filtrate gave the reaction rather feebly, while the precipitate, although washed repeatedly with saturated neutral ammonium sulphate solution, gave the reaction strongly. However, on washing another sample with distilled water the reaction-producing substance was removed from the precipitate.

Here I may state that the presence of this substance is likely to mislead one as regards the presence of peptone. Fehling's solution produces a beautiful pale rosy colour identical with that of peptone reaction. The absence of peptone in this case was proved by the salicyl sulphonic acid and neutral ammonium sulphate test, while a control test with peptone added to urine failed to give the purple reaction with an alkali.

Now, finally, I have to say a few words regarding the nature of this substance. One thing is certain, that this reaction is not found in any other sample of urine which I have examined. However, I have reason to believe that the substance from which this pigment is produced does exist in a modified form in the urine in certain cases. In the sample of urine treated with hydrochloric acid mentioned above I have said that I was able to obtain the reaction by adding caustic soda. However, in my first experiment, there being probably too much brown deposit used, I found that the alkaline solution was brownish in colour, so I added a little hydrogen peroxide with a view to see if the brownish pigment could be so altered as to reproduce the pink reaction. This surmise was at once verified, and since then I have tried the same test with two other samples in which the pigment was not present in fresh urine and the brownish deposit had assumed a pale rosy colour similar to that which is produced by leaving the purple deposit in contact with hydrogen peroxide for a long time. This was in a case of scurvy and the other one was in a case of fever brought on by slight hepatic congestion. In other cases I have not obtained this modified reaction, and it is interesting to note that the urine of the patient whose case gave this reaction gives neither the original nor the modified one now that she has quite recovered.

I may state here that the patient is a martyr to asthma; yet during a rather severe fit I have failed to obtain the reaction with her urine. In the mixture given for this illness will be found tinctura chloroformi composita. Now this contains carmine as a colouring agent; so my attention was directed to prove whether or not this reaction was due to some special idiosyncrasy on the part of the patient to excrete this substance. Experiments on other people failed to give the reaction. Every single drug was tried separately and collectively on myself with negative result. On the other hand carmine was added in minute amount to healthy urine and the reaction was at once obtained; however, this reaction is soon destroyed by hydrogen peroxide. To be sure that carmine had nothing to do with the urinary reaction I availed myself of the opportunity afforded by the second attack, when the drug was withheld, yet there was no difference in the reaction produced. The blood was examined for the reaction during the second attack with negative result. At the suggestion of Dr. Lyons I tried Bremer's test with Congo-red, methylene-blue, methylene-blue and eosin fuchsin, and erythrosin. There was no difference noted in the staining reaction except in the case of Congo-red. This stained the blood film more deeply than in a control case, quite the reverse of that which happens in diabetic blood. I have not had an opportunity of verifying this observation under more rigid conditions, so I cannot say whether or not there is a specific staining reaction present in this disease. The filtered pigment being allowed to dry in air becomes bluish in colour. As regards the nature of this disease I abstain from making any observations now. In conclusion, I have to state that from a record of 195 cases of urine analysis I have not seen a single case giving this reaction.

Bombay.

# ECZEMA AND THE ALLIED DISEASES: AN OUTLINE OF THEIR ETIOLOGY, PATHOLOGY, AND TREATMENT.[1]

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I HAVE been asked to open a discussion on eczema and the allied diseases with the hope that a large number of members will express their opinions regarding the etiology, pathology, and treatment of this widely-known and interesting group of disorders.

First of all, how are we to define eczema? On this very subject at the Edinburgh meeting of the British Medical Association in 1898 an eminent dermatologist, quoting John Hunter, said "that definitions were the most damnable things," and they are so. I would define eczema as "a serous inflammation of the skin not produced by any form of external irritants." At some stage or other of its evolution there is or has been exudation of serum. In the acute stage, at all events, the clinical signs of inflammation—heat, pain, redness, and swelling—are all present, but the rise of body temperature that accompanies other forms of inflammation is almost invariably absent. I agree with those authorities who regard an erythematous, a papular, a vesicular, a pustular, a dry or a scaly eczema, as simply stages of the same complaint. I would recognise as the great sub-variety of eczema "eczema seborrhoicum," and one means by that an eczema occurring in a patient who also suffers from seborrhœa, and it usually commences and spreads after the same fashion as seborrhœa, starting on the scalp and progressing slowly downwards over the body and limbs. Sweat eczema, follicular eczema, or sun eczema barely deserve the name of sub-varieties, and eczema marginatum is body ringworm attacking sweaty parts of the skin.

That there is real difficulty and confusion in connexion with the terminology of this disease is very easily exemplified, for do we not often hear people talk of the secondary eczema produced by the irritation of the itch parasite? Now this does not fit in with my definition of the complaint nor with any of the terminology usually accepted by dermatologists. Scabies, in fact, is produced by a direct irritant to the skin, and the various skin conditions associated with it should be varieties of dermatitis. If we are to retain the old familiar term—and it would certainly take a lot of knocking out—we should at all events have a clear image in our minds of what we mean by eczema and what we mean by dermatitis. We all appreciate one great difference between a dermatitis and eczema. The former is under control—i.e., the irritant can under ordinary circumstances be removed; but it is not so with the latter disease, only too frequently does it baffle us and get out of control.

## THE ETIOLOGY OF ECZEMA.

Personally I prefer to consider eczema as a distinct disease, as an entity as clearly defined from other diseases as is, for instance, enteric fever from pneumonia. Hereby I commit myself to the parasitic theory, believing that it is brought about by the behaviour of a specific organism, possibly the "morococcus" of Unna, just as the other compared diseases are brought about by the doings of the bacillus of typhoid fever or the pneumococcus of inflammation of the lung. When we speak of eczema being produced, as it very often is, by a chill, or through nervous influence, or by a gouty inheritance, or by diabetes, we do not mean that these conditions are the actual cause of it. We mean that they are the exciting causes, that they reduce the soil suddenly, or perhaps quietly, to a condition favourably receptive to the eczema "morococcus." A chill may equally be the exciting cause of eczema, pneumonia, scarlet fever, or rheumatic fever, or of any other complaint, and the public at all events are quite satisfied with this sole explanation. Even to us, knowing more of the specific cause in each case, there is still a veiled pathological dreamland; for why should a chill in one instance favour the attack of the eczema organism, and

[1] A paper read before the Pathological Society of Reading on June 14th, 1900.

in another that of the pneumococcus, and in another that of the tubercle bacillus? Well, there is the individual to be considered; the altered conditions produced by the chill in the one case may be very different to the conditions brought about by it in the other. Then comes, too, the question of the "survival of the fittest"—I mean of the fittest organism. One particular set of bacilli in the neighbourhood of the depressed patient may be infinitely more numerous, or, again, one bacillus may be healthy and fit for attack while another may itself be suffering from a chill of some kind or be knocked out at the time from the attack of a better conditioned organism. We must not confuse the attentions of the staphylococcus pyogenes aureus or albus with those of a specific organism. Their doings are accidental and preventable.

In the January and February numbers for 1899 of the *Dermatological Journal* Dr. Leslie Roberts has a most excellent and exhaustive article dealing with the pathology of eczema. He opens it by drawing attention to the inflammatory, secretory, excretory, and digestive functions of the epithelium of the skin, or rather of the cellular components of the epithelial layer. To think of special skin cells possessing an inflammatory function is only funny upon first consideration, for, after all, they are strictly comparable to the cells of the epithelial layer along the alimentary and other tracts. There is no doubt, so far as our present knowledge goes, that only individual sets of cells along the mucous tracts do individual business, and it is fair analogy to give separate functions to separate skin cellular tracts. As to the digestive functions of the skin Dr. Roberts clearly proves them by actual test-tube reactions carefully watched in an incubator. But in the more practical part of his paper he allows no sharp line to be drawn between dermatitis and eczema. There are three main propositions that I would ask the members of this society to express their opinions upon. 1. Is eczema an entity—a specific disease? 2. Is it due to the fact that certain functional epithelial cells are excited into over-activity by some kind of irritant? 3. Is there any distinction at all to be drawn between eczema and dermatitis?

I will now cite just a few practical examples of the difficulty of the question. At a meeting of the Dermatological Society of London on March 14th I examined a patient brought forward as a case of "pyodermia." At a meeting of the British Dermatological Society on Feb. 23th I examined some pure cultivations of the staphylococcus aureus from a case of "acute recurring eczema." Then, again, there are the cases of exfoliative dermatitis which nowadays we frequently see, and which no doubt we saw quite as frequently in the days gone by, but we simply did not bother to differentiate and called them all "eczema." The sceptic will say that it did not matter—the patients did just as well and what particular coccus was knocking about was quite immaterial. This, however, is not true, for without a true pathological and bacteriological idea of what is going on it is quite impossible to methodically treat any case of skin disease—or for the matter of that any kind of disease whatever.

Some of the conditions simulating eczema are not easy of diagnosis. To compare dry eczema with psoriasis, for instance, or seborrhœic dermatitis with psoriasis, or eczema with seborrhœic dermatitis, we must often simply depend upon the general picture as shown to us. The scales of seborrhœic disease are more or less oily and there is not the red dry surface left as after the removal of the scales of psoriasis or the greater or lesser attempt at exudation as noted in the case of the cleansed eczema patch. Dermatitis herpetiformis is often not recognised by the general physician, but it is very important that it should be. Here again the general picture, and particularly the grouping of the vesicles and bullæ, will generally settle the question. The early stage, the pre-mycosic stage of granuloma fungoides, should be recognised. Not long ago at a meeting of one of the dermatological societies at which I was present a case was brought forward in a man as pityriasis rubra. It was recognised by Dr. H. R. Crocker and by others who were present as an early case of mycosis fungoides. There were, however, no signs of tumours present. They developed nevertheless within six months and within twelve months the patient was dead. Indeed, the disease is so invariably fatal that only the worst prognosis can be given. This man as he was shown for the first time corresponded with *les hommes rouges* of the French school. These cases also appear in their early stage pretty often as obstinate general cases of acute or subacute eczema, or, if you wish to call them so, as cases of acute or subacute general dermatitis. Indeed, a very obstinate general eczema should be regarded with grave suspicion. Having once seen one or two cases of developed granuloma fungoides one would not be likely to miss even a single very small tumour. It is useless to remove these tumours.

Patches of eczema and lupus may be very difficult to distinguish the one from the other. I can think now of a man being shown at the Dermatological Society a year or two ago with patches on his hands. They were on the back of the hand, were abruptly circumscribed, were covered with a slight crust, and were thickened. They looked very much like patches of lupus, but I believe that they subsequently turned out to be patches of eczema. There was much difference of opinion upon the condition as then shown. The abrupt margins, the thickening, and the slight crusts made them look very much like lupus. Such cases would have to be watched. If the patches spread by their edges steadily advancing and if some amount of scarring were left behind, the diagnosis would be for lupus, and a tuberculous history might still further assist this diagnosis. But if they spread more diffusely and an improvement was brought about by treatment and without any scarring being left behind then such patches could be definitely fixed as those of a chronic eczema.

The subject of seborrhœa and its allied conditions was brought forward at a discussion at which I was present only last month. Mr. W. Anderson, Dr. Stephen Mackenzie, Dr. H. R. Crocker, and others took part in the discussion. To enter into the details would take too long a time, but the close connexion or relationship between pityriasis of the scalp and seborrhœa sicca et oleosa, and seborrhœic dermatitis and alopecia, was clearly brought out. It seemed to be generally agreed that the waxy and oily forms of seborrhœa were the same disease either in different stages or on different soils. The dry scalp pityriasis is possibly a condition by itself. Seborrhœic dermatitis, or eczema seborrhoicum, is probably seborrhœa complicated by the invasion of the staphylococcus pyogenes aureus et albus. All of these conditions lead to baldness of the scalp or of any other part of the body, and it will be remembered that Sabouraud has lately demonstrated a cocoon of micro-bacilli and epithelium which belongs to, and is the destroying agent of, alopecia areata and which is also, he says, the actual cause of seborrhœa. He also says that these micro-bacilli pave the way for the various pus organisms which so frequently complicate these conditions. Just in passing I would say that there is no doubt that some forms of alopecia of the scalp are produced by the microsporon or by the endo-ectothrix fungus of ringworm.

There are one or two other forms of disease allied to eczema to which I ought to allude. They are amongst those produced by pus cocci. I think we may at once brush aside "ecthyma" as merely being an obsolete name for a form of pustular eczema or for impetigo contagiosa attacking such parts as the legs. Impetigo contagiosa we must accept as a separate entity. We are all familiar with the crusty patches of this disease, which appear, indeed, to be simply dabbed on the surface, and which, unless irritated, have no surrounding erythema and leave no after scarring. Then there is that particular form of sycosis produced by the staphylococcus pyogenes. I am speaking, of course, only of the simple form of folliculitis known as sycosis and not of the hyphogenic sycosis. It is said that it is more painful and difficult to epilate in the coccogenic than in the hyphogenic form, but the true test is the microscope.

I heard it laid down as an axiom the other day by Dr. Radcliffe Crocker that we should not use the terms "impetigo" or "impetiginous eczema" unless we are referring to impetigo contagiosa. Any authoritative statement of this kind is useful as tending to prevent loose descriptions and definitions. Then what do we mean by "prurigo"? I think it is a separate disease. The history almost always dates from infancy, the earlier manifestations being, perhaps, those of lichen urticatus. It attacks by preference the extensor surfaces and the leading symptoms are the hard, dry papules often topped by a crust of blood the result of scratching. There is something about the scratches which is difficult to describe but which is yet almost pathognomonic. The disease lasts indefinitely; the symptoms admit of amelioration but the condition is not, strictly speaking, curable. I saw an uncommon case of prurigo in a boy the other day in which the face and hands were alone affected.

All the varieties of erythema might be considered allied

diseases of eczema, as also dermatitis due to pediculi or to the acarus of scabies, or to the handling of the primula obconica; also here in Reading we should not forget the skin irritation caused by the handling of hyacinth bulbs. I have dealt with this subject in the number of the *British Journal of Dermatology* for February, 1897. I content myself with drawing attention to these additional diseases and conditions as possible subjects for discussion.

It has been suggested to me that acne in its varieties, and boils, and carbuncles were diseases allied to eczema. Pustular eczema, impetigo contagiosa, boils, and carbuncles are, at all events, due to the same cause. There are plenty of explanations as to why we should find pustular eczema in one patient, a suppurative folliculitis in another, and acne, boils, or carbuncles in another. The reasons for these various manifestations, if they are due to one actual cause, might form a part of the discussion. In connexion with all these pustular forms of skin diseases I think we may be apt to forget that pus may exist without the presence of pus cocci.

### THE TREATMENT OF ECZEMA.

With regard to the treatment of eczema one of our members said to me only the other day that he treated his skin patients with zinc ointment and left the rest to Providence. It is an easy method of disposing of them, but I am sure it will be better for the patients if they are carefully and systematically treated. The physician in ordinary can say much to his patients without any fear of contradiction, but patients suffering from skin disease can see and note progress for themselves.

The first great principles in the treatment of eczema and its allied diseases are to soothe when the conditions are acute and to carefully stimulate the skin into healthy action as inflammation and irritation subsides. In a diffuse eczema one of the most important soothing elements is rest; oftentimes absolute rest is required.

Where there are a lot of dirt and crusts about all should be removed before any special form of treatment be adopted. Thorough soaking in weak carbolic oil is one of the best methods of loosening crusts, whether upon the head or elsewhere. The most careful and explicit directions must be given as to the removal of crusts from the scalp. There are various other substances that may be used for the removal of crusts, for instance, boric starch poultices, solutions of bicarbonate of soda or borax, or fitting the head or limb with an impermeable covering. Having removed all crusts and dirt as far as possible the next thing is to soothe and disinfect. There is hardly a skin disease which during some portion of its career does not require anti-parasitic treatment, and the application requires a great amount of care. It would not do to rush away with the idea that sulphur ointment would always do as the disinfectant. If my good friend aforesaid ever should go outside his zinc ointment treatment for acute eczema and the like diseases I think he would apply sulphur ointment, with the result, perhaps, that he would produce a dermatitis. Not that I am laughing at sulphur, for carefully applied in strengths suitable to each case it is an invaluable remedy. Mercury, ichthyol, tar, resorcin, and similar parasiticide remedies suit still better, some in one case, some in another. Experience gradually teaches us when to order lotions or sprays and when ointments or pastes. In any case the remedy must be kept at work. It is not a bit of good simply perfunctorily to tell the patient to dab on this or that ointment or lotion; he must be told how to apply it and how often to apply it.

It would be interesting to hear what members think with regard to the washing of eczema patients. I think that the patients should be washed from time to time for the better disinfecting of the parts, but I should in all cases order soft water or softened water and careful drying afterwards, and the general directions given for the cleansing of the patient should be similar to those that would be given for the cleansing of a wound. Lassar is one of the strongest advocates for these periodic washings, but many dermatologists are much against water being used to the skin in eczematous conditions. This is a fair question for discussion. Lassar particularly recommends tar-baths.

There is one caution about washes and sprays that everyone might not think of, and that is if the skin is broken do not order spirituous sprays or washes. Ordinary frequent washings in eczema and dermatitis are not to be allowed. The cleansing and disinfecting of the parts is the point. For macular and erythematous eczema, and also for some forms of weeping eczema, personally I think very highly of dusting powders. French chalk, cimolite, and powdered talc all make useful dusting powders. Oxide of zinc or starch powder is good for astringing or stiffening purposes, and salicylic acid, boric acid, or sulphur may be added for disinfecting purposes. I have used muslin bags filled with powder, as suggested by Unna, with excellent effect in situations like the groin.

Dry patches of chronic eczema, either hypertrophic or atrophic, are amongst the most troublesome conditions to cure; so, too, are those hypertrophic patches of lichen planus that one so frequently meets with. Stimulation, often strong stimulation, is necessary, but the results must be watched. It seems to me that what suits one case does not suit another and it is often necessary to ring the changes. Strong mercurial or chrysarobin ointments may be useful, tar in some form, or a salicylic and creasote paste, or they may be painted with 10 per cent. to 20 per cent. solutions of caustic potash or nitrate of silver. Blistering is also a valuable means of starting a cure. Of these and of the many other remedies the secret of success with all of them is to keep them at work. Of course, this does not apply to blistering or to the application of strong caustic solutions. Probably some members will give their experience of the gelatin preparations and other varnishes and pastes now so largely used. I am very fond of a medicated plaster in some cases of chronic eczema; I think their great drawback is the fact that they are probably not recently made.

I have said nothing about baths, but having shown myself on the favourable side for the cleansing of eczematous surfaces I have practically committed myself to baths and I fancy there are but few who would not sometimes order baths in skin diseases. Baths of soda and borax, and glutinous, starch, and bran baths we must frequently order; of the rest sulphur and tar baths are perhaps the best. I think the value of baths and their methods of application would be an excellent point in connexion with treatment for discussion.

With regard to the general treatment of eczema and the allied diseases I attach less value to this than to the local treatment. Nevertheless, in conjunction with local applications it must often be of service. In acute disease—especially in plethoric and gouty subjects—undoubtedly free purgation and the use of drugs that will lessen vaso-motor resistance and produce a free action of the skin, kidneys, and mucous tracts generally will be of service. In diabetic skins, whether the condition be xanthoma or ordinary eczematous irritation or dermatitis, undoubtedly general treatment must be gone into. Also where there is evidence of trophic disturbance the nerve change or nerve instability has to be corrected if it be possible to do so. Neurosis is given great importance to by some dermatologists, and sedatives, such as the bromides, and stimulants or restoratives, such as the zinc salts or arsenic or strychnine, should be serviceable. Personally, I think that when we have to deal with such a class of drugs for the cure that we are getting into troubled waters.

Diet in some cases is of importance, but I think time would hardly permit the discussion of the dietary treatment. It is practically treating acute or chronic indigestion. With regard to the treatment at health resorts, and particularly at bathing places and spas generally, no doubt many patients will be benefited by visits to Harrogate, Buxton, Strathpeffer, Aix-les-Bains, Carlsbad, Homburg, and the like places, but it is usually, I think, the patient's general condition rather than the particular form of skin disease that suggests the particular resort. The seaside is not generally suitable for acute or irritable skin disease, but such a statement requires modification.

I do not know why, but it seems to me that medical men as a rule do not trouble themselves much about skin diseases; indeed, they are either to be cured with a dose of white mixture and some zinc ointment or there is nothing to be done for them, and yet I would venture to say that the skin with all its glands and appendages and cells is as beautiful and intricate an organ as any we have to deal with. Its duties in the life-history of the individual are manifold and wonderful to think upon. The physiology of the corium and epidermis and of the appendages which strike down into the subcutaneous tissues teaches us more than a little of the way we live and move and have our being. Its pathology is equally instructive and beautiful; bacteriology probably plays a more important part for it than it does for any other class

of disease. Without this knowledge how can we successfully apply our treatment? Yet how few of us take the trouble to master it and what is the result? If we choose to neglect what is really a beautiful and sightly organ when it is sound the patient with an unsound skin tries to get it cured elsewhere. He dodges here and there, tries first one quack nostrum and then another, usually goes from bad to worse from want of systematic guidance, and occasionally stumbles upon a right remedy at the right time and finds himself better or cured. Forthwith he curses the whole priesthood of medicine and extols the quack nostrum to the skies and the quack proprietor shouts it beyond such trivial confines and space will not hold his jubilations. Of the 101 not cured one hears nothing, even less than nothing, if they return for help to the proper channels. Here some of them will find a kindly and sympathetic practitioner who will take the necessary systematic trouble to alleviate and cure them. However, he is not the man to holloa and the patient soon forgets that he has been ill.

I feel that I ought to apologise for trespassing so much on this one line of argument, but I do it because I feel that if we are to beat down quackery and quack nostrums it is to be done by stronger personal efforts on our part to face troublesome and nasty cases instead of just throwing them over as nuisances. All this applies with more force to the difficulties of dermatology than to any other groups of disease. I believe that the profession is really more in the dark about the knowledge of and the treatment of skin diseases than of any other disorders, perhaps because we have thought that we saw everything and that to know about it and treat it was so very easy. We saw when we had failed and desisted in disgust; the physician in ordinary seldom knows when he has failed and plods on merrily with his patient perhaps as happy as himself. Hard workers are lifting the veil that has prevented the medical man from always producing good results in eczema and the allied diseases, and I will end by quoting an old negro proverb that has just come into my head—"It takes heaps o' licks to dribe a nail in de dark."

Reading.

## A CASE OF PUERPERAL SEPTICÆMIA TREATED BY ANTI-STREPTOCOCCIC SERUM, AND COMPLICATED BY PHLEGMASIA; RECOVERY.

BY A. HAMILTON WOOD, M.D., CH.B. EDIN.

THE patient whose illness I am about to discuss was confined on the afternoon of May 5th. The first stage was a long and tedious one, due mainly to extreme rigidity of the perineum. There was a superficial tear which, though very slight, may undoubtedly have been the source through which septic matter gained entrance into the system, seeing that the house and its occupants were by no means clean. I visited the patient on the following day and found her perfectly comfortable. She had little or no after-pains. I saw her again on the next day and found her much the same as before; the temperature was normal but the pulse was a little rapid. I was then rather afraid of some septic mischief setting in, and on calling on the following day, which was the third day after her confinement, I found her temperature to be 101° F. and her pulse 120. I gave her then five-grain doses of quinine with some hydrobromic acid to prevent as far as possible the uncomfortable head symptoms which are so apt to follow the continued use of this drug; also 15-minim doses of digitalis. She had some castor oil which moved the bowels well but had no effect on the temperature. I sent for one of the district nurses who douched her night and morning with 1 in 100C corrosive (intra-uterine). The next day the temperature ran up to 104° and on the same night it was 105·6°. She complained of no pain and told me that she felt "all right but for a slight headache and a dreadful thirst." She was very sleepy and her expression was not anxious but rather drowsy and apathetic. The uterus, though enlarged and contracting badly, was not very tender, but there was a copious foul discharge, a lot of shreddy material returning each time with the douche. On this day, the fourth after confinement, I injected 10 cubic centimetres of anti-streptococcic serum, ordered her a little brandy every three hours, milk and soda-water, bovril, &c., and when I called the next day I found that the temperature had fallen from 105·6° to 102·6°. On that evening the temperature was about the same, 102·8°, so I did not inject any more serum. On the following morning it had fallen still further to 101·6°, but rose again in the evening to 104·2°. This was on May 11th, the sixth day after confinement. In the evening I again injected 10 cubic centimetres of the serum, the chart showing a fall on the next morning to 101°, but in the evening it again rose to 104·2°. Our supply of serum having unfortunately come to an end I could not inject any on that day. On May 13th the temperature in the morning was 100·4° and in the evening 104°, so I again injected 10 cubic centimetres of the serum. On the next day—that was about a week after the onset—the temperature fell to 100·6°; in the evening it was 101°. I now stopped the serum injections but continued the quinine and intra-uterine douching. The pulse, which up to now had varied with the temperature, had also fallen and was steadying down. I may mention *en passant* that from the commencement the secretion of milk was entirely arrested. On the 15th the temperature was 100·6° in the morning and 102° in the evening, but as the pulse was steady I did not mind the slight rise. On the next day it was a little above 100° and the patient was feeling a great deal better. The temperature fell still further on the following day and on the 18th it was down to normal, the pulse-rate falling simultaneously. The discharge, which for the last five or six days had been gradually diminishing, was now very slight. On the next day, however, the patient complained of a little pain down the back of the left leg, and on examining it I found the leg slightly swollen and tender, more especially posteriorly. There was not much tenderness above the popliteal space. The temperature ran up to 99·6° and the pulse to 86. For two days before this phlebitis set in; the bowels had not been opened. The patient had taken some castor oil, but had failed to get relief till an enema was given. I swathed the leg in cotton-wool and raised the foot of the bed. The quinine and digitalis were continued with the addition of some morphia to allay the pain. For the next two days the temperature remained at about 100° and on the following day she complained of pain in her right leg; this was only slightly swollen and not so tender as the left. The leg was wrapped in cotton-wool and bandaged as before. It is interesting to note that the left leg, as is invariably the case, was the first to be attacked and the severer of the two. On the following day the temperature fell to normal and remained so, except for a slight rise one evening due possibly to constipation. Towards the end of the month all pain had left the legs and by a little gentle massage the remaining swelling quickly disappeared. Since June 1st the patient has been getting up for a little each day, and at the time of writing (June 4th) she says that she feels herself again.

This case is deserving of some note, more especially with regard to the mode of treatment adopted. On the sixth day after the commencement of the disease, during which time three injections of serum had been given, the temperature fell considerably and remained down. But the question arises, would the same state of affairs have resulted from the administration of the quinine and digitalis alone without the anti-streptococcic injections? I think not. The intra-uterine douching, no doubt, played an important part in the treatment of the case, but apart from this I am of opinion that the success of the case was to a great extent due to the use of the anti-streptococcic serum. With regard to the after-effects, let me remark, the patient had absolutely no discomfort. Some hold that the serum produces a depressant action on the heart. It may be that three doses of 10 cubic centimetres each is not sufficient to cause any depression; all I can say is that in this case there was no depression, nor were there any uncomfortable symptoms whatever, either after each dose or after the third had been given.

Then a word or two with regard to the phlegmasia. It started in the left leg and a few days afterwards the right was affected, but to a less degree than the left. For a day or two previously she had been very constipated. This may be a mere coincidence, but it seems to support the theory that the rectum, lying as it does on the left side, has something to do with the phlebitis invariably starting on that side. This case, as well as others already published, may aid in inciting the profession to the further use of

anti-streptococcic serum in such cases as the above, my opinion being that it is undoubtedly worthy of a fair trial.

Falkland, Fife.

## THE SYMPATHETIC ORIGIN OF POST-ENTERIC TACHYCARDIA.

BY P. CLENNELL FENWICK, M.B., L.R.C.P. LOND., M.R.C.S. ENG.,

SURGEON-CAPTAIN, NEW ZEALAND MOUNTED INFANTRY; LATE SURGEON TO THE CHRISTCHURCH HOSPITAL, NEW ZEALAND.

DR. C. BURLAND in his paper on Tachycardia following Enteric Fever[1] seen in military convalescents mentions a theory suggested by myself of a sympathetic origin of the cardiac phenomena. Having had the pleasure of assisting Dr. Burland in his investigation of the pulse-rate in typhoid fever convalescence I can fully endorse all his remarks. The actual percentages given by him were, if anything, larger than those stated in his paper, but he is no doubt anxious to keep well within the limits. The patients were most carefully examined and some of the more interesting were auscultated daily and the rapidity of the pulse was constant in all. It is a striking point that the only two cases in which the pulse was normal were those of a seaman and of a soldier who had escaped the hardships of the campaign by being stationed on garrison duty. Of the effects of the long marches and scanty food I can speak feelingly. My troop of the New Zealand Mounted Infantry left the base in splendid health. Every man had twice passed a severe medical examination and each had been selected from a large number of applicants. At the end of 700 miles marching a huge proportion had passed through hospital or were at that time on the sick-list. Cases of absolute exhaustion at the day's end were very common and cardiac trouble was a constant complaint at sick parade. Considering that these men had been selected on account of their splendid physique and excellent medical history it must be conceded that Dr. Burland's theory of overworked hearts has solid grounds of foundation.

Whilst discussing with Dr. Burland the reasons of the rapid pulse-rate which we so constantly found I recalled the many cases seen in New Zealand of irritable hearts due to thyroid overgrowth and remembering a proposal to treat this condition by excising the middle cervical ganglion I suggested to Dr. Burland that the cardiac irritability noticed by him in his convalescents from enteric fever might be due to a sympathetic disturbance arising in the superior mesenteric plexus and thence transmitted to the cardiac ganglia and plexus. The superior mesenteric plexus which supplies that portion of the intestinal canal chiefly attacked by the typhoid poison is so closely connected to the cardiac plexus that I saw no absurdity in suggesting that the intestinal inflammation might set up an irritation wave in the terminal filaments of the local nerve-supply which was transmitted or reflected to the ganglia or centre controlling the heart's action (exactly as the pain in hip-joint disease is transferred to the knee-joint) and thus react on a cardiac musculature already weakened and irritable from long-continued strain and insufficient nourishment and produce the rapid pulse noted by Dr. Burland.

The liquid evacuations in enteric fever surely point to a vaso-motor disturbance in the intestinal sympathetic supply, and if the typhoid poison can evoke one function of the nervous system cannot another reaction also take place? The liquid diarrhœa so often seen in nervous people, particularly in medical students undergoing the horrors of an examination, is an example of a vaso-motor explosion. Dr. Burland, whilst courteously declining my suggestion, advanced as an unanswerable argument that if typhoid inflammation could cause a nervous reaction then the same phenomena should also be seen in dysentery. My reply was that in typhoid fever the inflamed area was much larger and that the nerve-supply of this locality was in much closer connexion with the cardiac plexus than that of the rectum. The sympathetic supply of the latter is derived from the pelvic plexus which is directly joined by branches of the second, third, and fourth sacral nerves, and we may justifiably expect to find an irritation wave from the rectal sympathetic nerves reflected through its nearest nerve connexions; and surely the painful tenesmus so constant in dysentery is caused by reflection through the sacral nerves to the inferior hæmorrhoidal branches of the pudic nerves which is derived from the third and fourth sacral nerves and thus places the nerve-supply of the external sphincter in direct nervous connexion with the mucous membrane of the rectum. The marked nervous phenomena seen in the strangulation of a small piece of the intestinal wall, as in Littré's hernia, is surely an argument in favour of sympathetic irritation from the intestinal nerves being reflected to the gastric nerves or the vomiting centre.

A symptom seldom noticed in acute dysentery is a very painful throbbing pain in the lumbar region. This I can only account for on the supposition that the renal plexus is reflexly irritated from the nerves of the rectum. I have only seen this symptom in cases of severe dysentery, and tenesmus was also acute.

Having been for many months exiled from all medical literature I must apologise if my remarks show painful ignorance of current ideas.

[1] THE LANCET, July 28th, 1900, p. 253.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.**

## CHARING-CROSS HOSPITAL.

### A CASE OF FOREIGN BODY (CLINICAL THERMOMETER) IN THE BLADDER; LITHOTRITY; RECOVERY.

(Under the care of Mr. JOHN H. MORGAN.)

FOREIGN bodies are much more commonly found in the female than in the male urethra and this is doubtlessly due in part to the larger lumen and the shorter length of the female urethra and partly also to the more frequent occurrence of hysteria in women. If a skiagram had been taken it would probably have revealed the nature of the nucleus of the stone, for both glass and mercury are very opaque to the x rays. The only case which is at all parallel to the very interesting one recorded below is to be found in the *Medical Press and Circular*, 1894, vol. i., p. 546.

An unmarried woman, aged 32 years, was admitted into Charing-cross Hospital on May 17th, 1900. She gave the following history. In 1881, 1888, and in 1891 she was an in-patient at the London Hospital for "rheumatic fever." Whilst there in 1891 she had an attack of hypogastric pain similar to that which she had on admission to Charing-cross Hospital. It was not so severe and she felt nothing of it for twelve months after leaving that hospital. In 1893 she was in the Hastings Infirmary for three months for gastric ulcer and bronchitis and later for three months in the Chest Hospital. In 1894 she was an out-patient at the Grosvenor Hospital for Diseases of the Chest and an in-patient at King's College Hospital on two occasions. During her second stay at the latter institution she underwent an operation for fissure of the anus and hæmorrhoids. Since that time she had had long periods of illness. Two years ago, whilst at the Woking Nursing Home, she had another severe attack of hypogastric pain which came on suddenly and then left her. In August, 1899, she was on a visit to her sister at Cardiff and was suddenly taken ill. She was taken to the infirmary and apparently remained there till March, 1900. She said that during this time she had several periods of unconsciousness and also that her temperature ran an abnormally high course, ranging from 103° to 105° F. The last 14 days were marked by the onset of severe dysuria, the pain and frequency of micturition continuing and getting steadily worse after she left Cardiff. The patient was sent by her medical man to Charing-cross Hospital when she was discovered to be suffering from cystitis and was admitted.

On admission the patient was seen to be an ill-developed

individual. She was short and thin and looked unhealthy. Her conduct during her stay in the hospital convinced most of those who had to deal with her that she was a malingerer. She had always some fresh ache or pain to complain of, though when she was not being observed she was bright and cheerful. She made three consecutive attempts to produce hyperpyrexia. What method she used is not certain. The thermometer registered from 110° to 112° F. and then shortly afterwards the same instrument only recorded 99° if she was carefully watched. She complained on admission of a constant pain across the back and in the hypogastric region extending down the left leg. This was aggravated on micturition which occurred at first about every half-hour. Not only was there pain on micturition but also great difficulty. The urine was alkaline, of specific gravity 1013, and contained albumin and also pus. The evening temperature was usually 100°; the morning temperature was 99° or normal.

The patient's bladder was washed out with boric lotion once a day and she was given boric acid and ammonium benzoate internally. On May 22nd she was anæsthetised and the bladder was sounded by Mr. Morgan. A stone was found anteriorly and to the right. This was then crushed with a lithotrite. On washing out the bladder after several crushings particles of glass and globules of mercury were found to be mixed with the fragments of the stone. A pair of forceps was then introduced and some small pieces of stone and a piece of thermometer nearly an inch in length were removed. The débris thus removed was carefully collected, dried, and weighed, its weight being 12·31 grammes. It was then boiled with strong hydrochloric acid and filtered, leaving on the filter-paper glass and mercury. The filtrate was found to contain phosphate of calcium with a little uric acid. The remnants of the thermometer weighed 4·64 grammes, whilst a complete one weighed 6·1 grammes. The patient continued to pass particles of stone and mercury for a few days after the operation. There was some blood also in the urine. The pus gradually disappeared and the urine became acid. She still complained of pain on micturition and she was on two occasions sounded to find out if anything had been left behind. She was still complaining when she left the hospital on July 11th.

*Remarks by* Mr. MORGAN.—Amongst the many curious foreign bodies removed from the bladder this is the first instance in which a thermometer has been found. The patient was at first admitted under the care of Dr. Routh as her symptoms were referred to the uterus, and by him Mr. Morgan was asked to examine the bladder. The stone was easily detected and nothing unusual was suspected until the blades of the lithotrite closed upon a substance which yielded in a different manner to any of the substances ordinarily found to compose a calculus. At the first washing fragments of glass and mercury, together with some phosphatic deposit were removed, and the nature of the nucleus was thus disclosed. The previous statements of the patient and her general conduct forbade any reliance being placed upon her statements, but the weight and measurements of the fragments removed, the negative results of two subsequent washings, and the absence of any sign of irritation gave reasons for concluding that the whole of the foreign body had been removed at the first sitting. No trace of blood could be found in the urine a few days after the operation and micturition was called for only with normal frequency. As to how or when the thermometer was introduced through the urethra no cross-examination could elicit any information from the patient, but looking to her general behaviour whilst in the hospital there can be little doubt that it was done by her own act.

OPEN-AIR TREATMENT OF PHTHISIS.—At the meeting of the Bristol Board of Guardians held on August 3rd it was decided to apply to the Local Government Board for sanction to send two patients who were suffering from phthisis to the North London Hospital for Consumption, Mount Vernon, Hampstead, where the open-air treatment is adopted.

LUNACY IN SWINDON.—At the meeting of the Swindon Board of Guardians held on August 2nd it was reported that 142 patients from this union were inmates of the Wiltshire County Asylum, the cost for their maintenance being £3400 per annum. Ten years ago the guardians had only 66 cases in the asylum, at a yearly expenditure of £1160.

# Reviews and Notices of Books.

*A Manual of Pathology.* By JOSEPH COATS, M.D. Glasg., late Professor of Pathology in the University of Glasgow. Fourth edition, revised throughout by LEWIS R. SUTHERLAND, M.B. Glasg., Professor of Pathology in the University of St. Andrews. London: Longmans, Green, and Co. 1900. Pp. xxv.-1132. Price 31*s.* 6*d.*

THE "Manual of Pathology" was the most important literary production of the late Professor Coats. It represents his life's teaching; it deservedly ranks as one of the standard works on pathology in the English language, and it owes that position to its undoubted excellence. It is well arranged, clearly written, and freely illustrated; it is so comprehensive that it leaves few points in the science altogether untouched; above all it is a manual for the student and the practitioner and not for pathologists only, for its author never forgets that pathology is essentially the foundation of medicine and surgery and he continually emphasises the clinical bearings of his subject. It is impossible to read the opening chapters of the book without feeling the value of a combination of clinical experience with pathological knowledge in one who would be a teacher of pathology.

This fourth edition of the work, unfortunately posthumous, had been in part revised by the author himself before his death. But the greater part of the work of revision, and hence a certain share of the responsibility, has rested on the shoulders of Professor Sutherland, who has conscientiously endeavoured to follow the lines laid down by Professor Coats. The task cannot have been an easy one, and though it is our duty to call attention to certain defects in the book it is certain that the work has been well done. Pathology is a vast and rapidly growing subject; it now embraces so many branches that it is doubtful whether anyone can hope to master them all. The development of experimental pathology, of pathological chemistry, of histology, and, above all, of bacteriology, has enormously increased the amount of ground to be covered by the student even since the first edition of this book was published. It is inevitable that with each succeeding edition of a book which seeks to be comprehensive the difficulty of including everything should become increasingly great and in time insurmountable. It is to our mind an open question whether it is any longer advisable to include in a single work so much as is attempted in this. The end can be attained only by an alarming increase in bulk or by inadequate treatment of certain subjects. It is clear that a book of over 1100 pages is as large as any ordinary student can be expected to master, and though the student who has mastered this edition will in most respects be well equipped in pathological knowledge it must be admitted that, as a universal work of reference on the subject, it is in other respects inadequate. As a text-book of morbid anatomy and morbid histology it is an admirable work; much of the information on general pathology—as, for instance, on inflammation and the various degenerations—is excellent and thorough; but there are sections on general pathology which are exceedingly scanty and imperfect—as, for example, the paragraphs on jaundice and albuminuria. The modern developments of hæmatology are practically neglected; leucocytosis is twice mentioned in a casual way, but its immense importance in diagnosis and prognosis is not touched on. Leukæmia is dealt with in almost as imperfect a manner, only a single reference being made to the all-important question of the absolute number of leucocytes per cubic millimetre. Bacteriology occupies 44 pages, and there is no fault to be found with the way in which the facts are presented. It is, however, doubtful whether it is wise to attempt to deal with

the details of the subject in so scanty a space. In the section on animal parasites malaria does not receive adequate treatment; in a work published in 1900 we might have expected some reference to the mosquito, since our definite knowledge as to the relation between it and the malarial parasite dates from 1898 at least.

If we have called attention to what appear to us deficiencies in this book it is because we are in duty bound to do so; but it is right to repeat that such deficiencies are almost inevitable and result from the natural growth of pathology beyond the possible limits of a single text-book. It is with much greater pleasure that we recur to the many good points of the volume. We have tested it as a standard of reference in daily work—the most severe test that can be applied to a book. It is but rarely that we have failed to find on any desired topic information sufficient for the ordinary needs of the student, conveyed in a clear manner and illustrated by a profusion of woodcuts and micro-photographs which are, as a rule, excellent. It is, indeed, the free use of illustrations—there are 490 in the text—which is partly answerable for the large size of the volume. The "Manual of Pathology" must long remain a standard work of reference for students, and Professor Sutherland is to be congratulated upon having carried out the designs of the original author in so successful a manner. But when, in the fulness of time, a fifth edition is called for, as will undoubtedly be the case, we would commend to his consideration the advisability of limiting in some measure the scope of the work.

# Analytical Records
FROM
# THE LANCET LABORATORY.

## PLASMON.

(THE PLASMON SYNDICATE, LIMITED, 56, DUKE-STREET, GROSVENOR-SQUARE, LONDON, W.)

THE introduction of plasmon marks an important advance in the separation of the nutrient material without any deterioration of its dietetic quality from the most natural of all foods, milk. It is to be feared that in the preparation of many foods the process adopted seriously affects the nourishing qualities of the material in its original state. Chemical analysis may show an excellent proportion of flesh-forming constituents, but only physiological evidence can decide upon the real nourishing quality of the food product. Plasmon has satisfied both chemical and physiological inquiries. It consists practically of the casein of milk separated by a very simple process and dried. At no step in the process is objectionable chemical treatment introduced. Plasmon is a tasteless, odourless white powder which is entirely soluble in water though the solution exhibits a slight opalescence similar to that of milk. The dry powder swells up in water to a gelatinous mass which dissolves as more water is added. On boiling the solution a "skin" continually forms at the top of the liquid in the same manner as in fresh milk. The important dietetic salts of milk are retained in the preparation. Everybody is familiar with the effect of mixing aerated water with milk, the casein separating in fine digestible curds and not in voluminous indigestible clots. Further, it is well known that soda-water-and-milk is an excellent beverage and food for the invalid, especially where sensitive conditions of the digestive organs exist. Plasmon is practically the casein of milk thus separated and afterwards dried in a stream of the same gas (carbonic acid) which separates the proteid from milk serum. Our analysis of plasmon gave the following results: moisture, 10·76 per cent.; mineral matter, 7·24 per cent.; milk fat, 0 70 per cent.; proteids, 81·30 per cent. Excluding the moisture these results mean that dry plasmon contains over 90 per cent. of pure proteid. That this proteid thus separated retains its powerful nourishing qualities is evident from the interesting experiments made by Professor Virchow. He concludes that the albumin in plasmon is in its original unaltered condition, and therefore plasmon can replace all other albumin foods. He finds, further, that it is extremely digestible, and in some interesting experiments made upon himself in which the diet consisted almost entirely of plasmon the results were highly satisfactory. Plasmon has accordingly been found of great value as a nutrient in enfeebled conditions of the digestive organs and to be an excellent means of administering food to the sick. It is valuable as a prelude to solid food for patients convalescing after disease or after surgical operation. It is important to point out that plasmon contains, as our analysis shows, the salts of milk including the phosphates, while even a small quantity of common salt may be extracted from it. It is obvious that plasmon may be employed with the greatest advantage for enriching foods or for raising their actual flesh-forming value to a high and trustworthy degree. The variety of ways in which plasmon may be prepared need not be enumerated when regard is had to the fact that it is soluble in water. Thus a powerful nutrient may be administered to a patient without his knowledge, for, as we have already stated, the solution of plasmon is practically tasteless and odourless. The preparation is one worthy of the highest praise. It contains no alkali and is permanent for an indefinite period in the dry state. Chemical analysis shows what a remarkably high proportion of proteid it contains, and physiological experiment has established that this proteid is completely available for the nourishment of the human body.

## (1) NEW TABLOIDS; (2) HIGH POTENCY ANTI-DIPHTHERITIC SERUM; AND (3) "ENULE" RECTAL SUPPOSITORIES.

(BURROUGHS WELLCOME AND CO., SNOW-HILL BUILDINGS, LONDON, E.C.)

Some comparatively recent additions to the list of tabloids are well worth the attention of our readers. The success which has attended the administration of codeine in place of morphine has suggested the preparation of tabloids containing a quarter of a grain and half a grain respectively of the alkaloid. Unlike morphine, codeine may be withdrawn from administration without being followed by unpleasant symptoms. It acts as a narcotic in the relief of pain in the same way as morphine but is less active, and is free from injurious after-effects. As is well known, the drug has proved useful in the treatment of bronchial irritation and cough, while its administration reduces the quantity of sugar in the urine of diabetic patients. Chinosol has been some time to the front now as a convenient bactericide and antiseptic in surgical work. It has also been tried internally in the treatment of tuberculous diseases. Again, it has been administered in febrile conditions which accompany leprous ulcerations and in dysentery. Lately it appears to have acted as a satisfactory febrifuge in typhoid fever. The tabloid of chinosol contains five grains of the salt. The tabloid of urotropine contains five grains of this ammonia derivative (hexa-methylene-tetramine). It has been used as a diuretic and genito-urinary antiseptic, while there is evidence also to show that it acts as a solvent of uric acid and urates. Urotropine is claimed to have been of distinct service in cystitis. Messrs. Burroughs Wellcome and Co., it is important to note, have discontinued the issue of anti-diphtheritic serum in vials containing 1500 units in favour of serums of higher potency. Each vial of the more powerful serum contains 4000 units in five cubic centimetres or less, or vials containing 2000 units in five cubic centimetres or less may be obtained. The rectal suppositories

made by this firm are distinguished by the brand "Enule." We have recently received specimens of "Enule" opium suppositories containing one grain of opium. As is well known the administration of opium per rectum has, besides acting locally, a favourable action in obstinate vomiting and in painful nephritic and uterine affections.

### HEREFORDSHIRE CIDER.

(H. P. BULMER AND CO., RYELANDS, HEREFORD.)

The specimens sent for examination were distinguished by the following titles: (1) Cherry Pearmain; (2) Cherry Pearmain, extra dry; and (3) Draught Cider. The results of analyses were as follows. Cherry Pearmain: alcohol, by weight 5·25 per cent., by volume 6·55 per cent., equal to proof spirit 11·49 per cent.; volatile acid reckoned as acetic acid, 0·096 per cent.; fixed acid reckoned as malic acid, 0·24 per cent.; extractives, 6·09 per cent.; sugar, 5·8 per cent.; and mineral matter, 0·27 per cent. Cherry Pearmain, extra dry: alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent.; volatile acid reckoned as acetic acid, 0·16 per cent.; fixed acid reckoned as malic acid, 0·18 per cent.; extractives, 1·95 per cent.; sugar, 0·26 per cent.; and mineral matter, 0·23 per cent. Draught Cider: alcohol, by weight 5·87 per cent., by volume 7·32 per cent., equal to proof spirit 12·84 per cent.; volatile acid reckoned as acetic acid, 0·12 per cent.; fixed acid reckoned as malic acid, 0·23 per cent.; extractives, 2·36 per cent.; sugar, 0·28 per cent.; and mineral matter, 0·25 per cent. The results of these analyses practically divide the specimens into the two classes, "sweet" and "dry," the draught cider presenting a similar composition to the extra dry contained in bottle. In these two specimens the sugar does not exceed one-third per cent., while the ordinary Cherry Pearmain in bottle contains over 5 per cent. of sugar, which accounts for the high amount of extractives. All three specimens were in excellent condition and sound and no objectionable preservatives could be traced. The "extra dry" specimen possesses the marked and very pleasing fragrance characteristic of the apple and is a very wholesome and refreshing drink. Those who prefer cider in which the fermentation is not so complete, and therefore in which the sugar has not "worked out," may select the more or less sweet kinds. The specimens were brilliant and agreeably effervescent. There is abundant evidence tending to show that cider is a healthy beverage during the hot summer months. The above brands may be recommended in view of their purity and excellent quality.

### HIGHLAND MALT WHISKY.

(J. S. WHERLY AND CO., 129, ASKEW-ROAD, GATESHEAD.)

On analysis this spirit proved to be free from excessive extractive matters and exhibited a fair average alcoholic strength. The results were as follows: alcohol, by weight 40·30 per cent., by volume 47·67 per cent., equal to proof spirit 83·54 per cent.; acidity reckoned as acetic acid, 0·021 per cent.; extractives, 0·23 per cent. The whisky was relatively light in colour and to the taste was satisfactory. It was free from the common impurities of whisky.

### THE "GYE PROCESS" FRESH FOODS.

(THE GYE PROCESS FRESH FOODS (NEW) CO., LIMITED, SUNBURY, MIDDLESEX.)

We have formed a very favourable opinion of these foods, which are preserved without the addition of antiseptics and by a process which, though evidently a desiccating one, is in no sense a process of cooking, for on examination the specimens sent were found to have retained all the properties and characters of the fresh article. We found that on following the directions given the dried-up preparations could be restored to their original bulk and on subsequently cooking they were found to retain to a somewhat remarkable degree the attractive properties of the freshly cooked food. This satisfactory result was true not only in the case of the vegetables but also of the animal foods and the "ration block." Amongst the samples submitted to us were the following: turnips, leeks, carrots, apples, artichokes, onions, cabbage, chicken, veal, eggs, beef, ration block, &c. On trying the specimens of vegetables we found the product after soaking and cooking to be quite tender and to possess a good fresh flavour. These results are very encouraging and afford some evidence that an excellent way has been found of preserving many kinds of foods without the addition of chemicals and without cooking, the products retaining all the properties of the fresh article. As far as we can gather the process would appear to consist of extracting the moisture by special means without altering any of those particular qualities which are destroyed by cooking.

### MEAT ESSENCES.

(F. B. COSTA AND CO., 16, DOWGATE-HILL, CANNON-STREET, E.C.; AND GEORGE BAGGER AND CO., PIAZZA SAN BERNARDO 100, ROME.)

The specimens examined were (1) essence of beef and (2) turkey jelly with meat. The former was found to contain the constituents of raw meat juice of which unaltered albumin is the most important. The essence is of excellent flavour and is especially valuable for invalids, since it is easily digested. The latter preparation was found to contain the meat of turkey in addition to the soluble portions. Meat fibre was easily identified under the microscope. It possesses a very pleasant flavour and yields a broth which should be acceptable to invalids. Both preparations are so excellent that it is a pity that the makers cannot contrive to preserve them in glass jars rather than in tins. As a matter of fact we found evidence of some metallic contamination.

### HELIDON SPA WATER.

(THE HELIDON SPA WATER CO., HELIDON AND BRISBANE. LONDON AGENCY: IDRIS AND CO., CAMDEN TOWN, LONDON, N.W.)

We have made a careful analysis of this water, which is said to be drawn from the natural spring of Helidon, Brisbane, Australia, and the following results were obtained: carbonate of soda, 183·32 grains per gallon; common salt, 46·57 grains per gallon; and carbonate of calcium, 9·87 grains per gallon. The total mineral constituents are thus 239·76 grains per gallon. We could only find lithia in traces—that is to say, hardly in a quantity to justify the water being called a lithia water. In an analysis published on the label of the bottle we notice that 2·68 grains per gallon of lithium carbonate are said to be present. Assuming these figures to be correct it would not be true to state that "this water contains more lithia than any of the European spa waters." Further, the quantity of chloride of sodium given in the analysis on the same label is 2·99 grains per gallon, whereas we found over 46 grains per gallon. These figures are so discordant as to suggest that the water is liable to important variations in composition. The water has a very agreeable and soft taste, is free from iron, and pleasantly sparkling. Moreover, it contains no organic impurity.

### DIETETIC PREPARATIONS.

(COOMBS EUREKA AERATED FLOUR COMPANY, LIMITED, NOTTINGHAM. LONDON AGENCY: 8, FARRINGDON-ROAD, E.C.)

An assortment of food preparations sent to us by the above firm comprised malted food, fruit salt, custard powder, blancmange powder, egg powder, and light pastry powder. The preparation possessing most merit, perhaps, is the malted food. Its title sufficiently explains its composition. By the method adopted the food is undoubtedly enriched and made more assimilable. The fruit salt consists of a powder which effervesces on adding water and its composition presents no novelty. The custard powder consists largely of starch faced with yellow colouring to give it the appearance of eggs, but in no sense can this powder be regarded as an

efficient substitute for the true custard made from eggs. It contains but a trifling proportion of flesh-forming materials. The blanc-mange powder is similarly composed, as is also the egg powder. The word "egg" in the latter case is a decided misnomer, implying eggs where no shadow of eggs is. Lastly, the light pastry powder consists of flour containing a small addition of ingredients which yield carbonic gas on moistening. Thus the product is made spongy and light by the disengagement of the gas during cooking.

### HÆMOGLOBIN CAPSULOIDS.

(THE CAPSULOID CO., 31B, SNOW-HILL, LONDON, E.C.)

According to our examination these capsuloids contain hæmoglobin in an oily excipient. The contents of one capsuloid weigh a little more than three grains, and according to our analysis the proportion of iron is 0·30 per cent. The administration of iron in this form is satisfactory. Hæmoglobin is well borne by the stomach and easily assimilated. To not a few the appearance of hæmoglobin preparations is repulsive. The capsuloid meets this objection, and evident care is devoted to its preparation.

### (1) SAVON DU TRANSVAAL; AND (2) SAVON SURFIN.

(MADAME ESMÈE, 5, BROOK-STREET, LONDON, W., AND BLANCHE LEIGH, 4, RUE DE LA PAIX, PARIS.)

Both specimens consist of delicately prepared soaps, neutral in reaction, free from irritants and resins, and therefore, apart from medication, suitable for delicate skins. But the soaps are regarded as antiseptic and also of some curative value on account of the presence of ichthyol. Ichthyol is, of course, of well-known value in various skin diseases, but we do not think that the very small amount present in these toilet soaps can avail much in this direction. On distillation with alkali the yield of ammonia was quite minute. Since ichthyol is an ammonium salt this result indicates but a very small proportion of this curious product. For external application ichthyol is used in an ointment containing from to 50 per cent.

### CHELTINE FOODS.

(WORTH'S FOODS SYNDICATE, LIMITED, CHELTENHAM.)

We have on a previous occasion described the composition of the "diabetic food" of this company. Since it contains an abundance of carbohydrates it cannot be accepted as in the least degree suitable for diabetic patients. On the contrary, it would be harmful. We have also examined certain other foods prepared by this company, notably, "Perfect Food" and "Dyspeptic Food." We have devoted our attention chiefly to the proportion of soluble and digestible matters in these foods and to the evidences of a microscopical examination. The results were satisfactory and indicated that the foods had been prepared with the view of aiding the digestive processes. Their names, therefore, to some extent are justified. Further, we found that the foods contained an excellent proportion of the cereal phosphates and of the nitrogenous constituents. The flour used is evidently of superior quality.

### PETANELLE DISINFECTING POWDER.

(PATE, BURKE, AND CO., 6, WOOL EXCHANGE, BASINGHALL-STREET, LONDON, E.C.)

Besides being itself a disinfecting agent on account of its porosity this curious substance is a most excellent vehicle for absorbing disinfectants to be applied for domestic purposes. Petanelle possesses the undoubtedly advantageous property of floating upon water, so that by keeping a film of an oily disinfectant upon the surface of water offensive gases are effectually deodorised. Moreover, the substance is so light as to be easily swept away by a flush of water so that it would not block the pipes. It is an interesting peaty product, very porous, and an effective absorbent—a property which adapts it admirably for hygienic and disinfectant purposes. Petanelle, it may be added, is used in the preparation of a surgical woo and of a variety of hygienic fabrics, such as clothing, abdominal belts, &c.

### V. O. SCOTCH WHISKY.

(FINDLATER, MACKIE AND CO., 16, PRINCE ALBERT-STREET, BRIGHTON.)

Judging from the peculiar softness and mellowness of its flavour, which, of course, is a very satisfactory feature, this spirit has been properly left to mature. It is stated to be 10 years old. The results of analysis were as follows alcohol, by weight 43 24 per cent., by volume 50·82 per cent., equal to proof spirit 89·06 per cent.; acidity reckoned as acetic acid, 0·033 per cent.; extractives, 0·48 per cent. mineral matter *nil*. These figures show an alcoholic strength which is somewhat above the average for whisky. We have no doubt that this whisky is derived from genuine materials. It possesses a flavour characteristic of malt and is as free as it is possible to be from objectionable alcohols.

### ALBUMEN PASTE.

(THE NAO FOOD COMPANY, 2, GREAT GEORGE-STREET, LONDON, S.W.

We have carefully examined this "paste" and have found it to be correctly described. The major portion of the albuminous substances of meat was present in an insoluble but finely-divided condition. We obtained, however, a cold water extract which proved to contain a notable quantity of coagulable albumin. The "paste" also contains fat. The flavour is good and therefore we may regard the preparation as both an acceptable and a highly nourishing food.

## ASYLUM REPORTS.

*Saint Andrew's Hospital for Mental Diseases, Northampton (Annual Report for 1899).*—The average number of patients in the institution during the year was 377, comprising 186 males and 191 females. The admissions numbered 103, 35 being those of males and 68 those of females. Of these 19—viz., 6 males and 13 females—were re-admissions. The number of admissions has continued to increase steadily for the year 1899, as compared with 86 for the previous year and 73 for the year 1897. During the year 36 patients were discharged as recovered—viz., 14 males and 22 females—a total of 9·5 per cent. of the average number resident. The deaths during the year amounted to 22—viz., 17 males and 5 females—a total of 5·8 per cent. as calculated on the same basis. Mr. Joseph Bayley, the resident medical superintendent, states in his report that "the death-rate on the male side of the hospital has again been high, 17 out of 22 deaths having occurred on that side. ..... Two male patients were found dead in bed, and both these cases happened within a week of each other and under similar circumstances. ..... Post-mortem examinations showed that death in both these cases was the result of heart disease." Notice was sent to the coroner and an inquest was held on the second of these cases and a verdict of "Death from heart disease" was returned. Two accidents with fractured bones, one a fracture of the knee-cap and another of the femur, occurred on the female side. Both patients made good recoveries. Of the deaths during the year two each were due to phthisis, cardiac disease, and cancer respectively, three to general paralysis of the insane, the same number to acute mania, and four to senile decay. Early in the year the committee of management made an order that after March 31st no persons should be employed in the hospital or in the houses belonging to it who could not produce satisfactory evidence that they (and the residents in their houses) had been vaccinated. Seven persons refused to comply with this rule and resigned their situations. A fire broke out in the kitchen and extended to the roof, but was extinguished by the fire brigade without serious results Plastering and other alterations on the male side which have long been delayed by a strike of the plasterers are now completed. The new house for the boilers and electric light apparatus, engines, dynamos, &c., is now completed. The financial condition of the hospital continues to be very satisfactory, but there is a loss of £115 on the farm. The general health of the establishment is good, and with the exception of one case of measles the hospital has remained

free from epidemic or zymotic disease. The Lunacy Commissioners state in their report that the hospital and villas are maintained in excellent order.

*West Sussex County Asylum, Chichester (Annual Report for 1899).*—The number of patients on the books at the beginning of the year 1899 was 466. The average number resident during the year was 478 patients, and comprised 217 males and 261 females. During the year 100 cases were admitted—viz., 39 males and 61 females. Of these five—viz., two males and three females—were cases of re-admission. Mr. H. A. Kidd, the medical superintendent, states in his report that the causes tending to inflate the admission rate of West Sussex patients during the first year or two after the opening of the asylum have now ceased to exist. "But unfortunately there has been an increase of 20 in the numbers on the female side, and although there is but one female in the building not belonging to West Sussex there are already 15 patients in excess of the number of beds originally provided. The extensions which have been planned and which are now being carried out will provide 200 extra beds for females and 100 for males, and may possibly be ready for a partial occupation at the beginning of next year. By that time," says Mr. Kidd, "it is to be feared, the difficulty of providing accommodation for female patients will have become very acute." The character of the admissions, regarded from the point of view of recoverability, was even worse than during the previous year. Thus, of the 100 patients admitted recovery was considered reasonable probably only in 25 cases—viz., in those of 14 males and 11 females. "These are the cases for whom the institution is strictly a hospital. They afford scope for energetic treatment directed to the improvement of the physical ill-health ..... and to the cure of the mental disorder which needed certification and removal from home." Among the cases regarded as hopeless of recovery were those of 10 patients whose mental breakdown was consequent on senile brain degeneration and 11 congenital cases—patients who had either been born with defective brains or whose brain development had been arrested in infancy. Seven of the admissions were cases of general paralysis and five of the patients were in the last stage of mental decay. Dealing with the causes producing the mental diseases it was ascertained that heredity was a predisposing cause in 41 per cent. of the cases, alcoholic excess was ascertained to be the cause in 14 per cent., and several cases were traced to influenza. "The tendency to nervous breakdown following this very troublesome disease emphasises the great importance of careful treatment continued after the primary attack, even though slight, is past." In 23 instances there had been previous attacks of insanity. Among the moral causes the adversities and trials of life, emotional excitement, and domestic or business worries accounted for 26 per cent. of the cases. 35 patients were discharged as recovered during the year, or 7·5 per cent. of the average number resident. There were 32 deaths during the year, 18 being males and 14 females, or 6·7 per cent. of the average number resident. Necropsies were made in every instance and the fact that a bedsore was discovered in a single instance only is practical evidence of good nursing. Of the deaths during the year two were due to pneumonia, four to influenza, four to phthisis, three to general paralysis of the insane, seven to senile decay, and eight to organic brain disease. At the outbreak of the war in South Africa more than half of the male staff were reservists, and in the first week after the calling out of the reserves seven attendants left to join the colours. It was decided by the committee that their places should be kept open for the men while on leave. "The work of filling up satisfactorily the gaps so suddenly created in the staff has been a difficult and anxious task." The casualties during the year included fractures of the arms in two female patients and a fractured femur in a male patient. An epidemic of influenza occurred just after Christmas, about 50 patients being affected. A case of diphtheria occurring in the wife of an employé was treated in the sanatorium. 76 per cent. of the men and 85 per cent. of the women are occupied in some form of work or employment. Additions and alterations involving an expenditure of £236 have been carried out in the general stores, the butcher's shop, the laundry, and the wards. Improvements have been made in the electric light supply. The working of the farm shows a credit balance of £333. The Lunacy Commissioners in their report state that the case books are kept with care and intelligence and that pathological work is carried on.

## THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE annual meeting of this association was recently held under the presidency of Dr. FLETCHER BEACH.

On the morning of Thursday, July 26th, the officers and council for the ensuing year were elected and the reports of the Parliamentary and Education Committees were read and adopted. Seven ordinary and three honorary members were elected. It was also resolved that a copy of the following resolution should be sent to the Local Government Board in the three kingdoms: "It is the unanimous recommendation of the Medico-Psychological Association of Great Britain and Ireland that in union workhouses in which insane persons are detained a properly qualified and trained mental nurse should be employed in the insane wards."

In the afternoon Dr. SPENCE vacated the presidential chair, which was taken by Dr. FLETCHER BEACH, who delivered his presidential address. After referring to the losses which the association had sustained by the deaths of some prominent members during the year he gave an account of the progress which had been made in the treatment of certain defective classes of society, such as idiots, imbeciles, the feeble-minded, the epileptic, and juvenile delinquents, during the last 60 years. He described the labours of Séguin, who was the originator of the system of educating and training idiots and imbeciles which is now in use, as well as of Saegert and Guggenbühl, who were pioneers in the work. He then traced the progress of educating and training idiots and imbeciles in England and described the way in which the Earlswood and other charitable asylums were erected, as well as the one for paupers at Darenth. Reference was also made to the institutions which have been built in Scotland and Ireland. An account was then given of the progress of the work in America from the time of the opening of the Massachusetts and New York Asylums for Idiots in 1848 and 1851 respectively, down to the present time, and it appeared that there are now no less than 19 States which maintain 24 public institutions, providing accommodation for 8492 inmates. An account was also given of the provision made in France, Germany, Denmark, Norway, Switzerland, Austria, and other European States, in our colonies, and in the Argentine Republic for this class of cases. Dr. Fletcher Beach fully described the way in which the education of feeble-minded children originated in England from the time when the British Medical Association first in 1888 appointed a committee to inquire into the subject to the present day. Full credit was given to the labours of Dr. Warner and of various committees which have inquired into the subject, and it was stated that the Childhood Society now carries on the work. Reference was made to the Departmental Committee which was appointed to inquire into the systems now in force for the education of feeble-minded children, and a short account was given of the Elementary Education (Defective and Epileptic Children) Act which was subsequently passed. The labours of the National Association for Promoting the Welfare of the Feeble-Minded were also referred to, and it was shown that England, in spite of the work of the London and other school boards who have established special classes, is still far behind many continental countries. The provision made for epileptics was described, and it was shown that it is only in recent years that accommodation has been specially made for the sane and insane patients of this class. In providing for epileptics, as well as for idiots, imbeciles, and the feeble-minded, England has lagged behind, but it is satisfactory to know that there are now three colonies and there will soon be a fourth for sane epileptics, and that the Chorlton and Manchester and the Leicester Boards of Guardians, as well as the London County Council and Lancashire Asylums Boards, are about to erect colonies for the epileptic insane. A short account was then given of the way in which juvenile delinquents are now treated, from which it appeared that it was not until 1854 that reformatory treatment of criminals was substituted for retributive punishment. In 1896 there were 50 reformatories and 141 industrial schools, accommodating altogether about 22,000 youthful offenders.

Dr. WYNN WESTCOTT, coroner for North-east London, and

President of the Society for the Study of Inebriety, then read a paper entitled Inebriety, its Causes, Results, and Treatment. He reviewed the present opinions on the causation of inebriety and especially the question of inherited tendency to the drink-crave, touching upon the debated point of the possibility of inheriting an acquired inebriety. He pointed out the follies of the numerous claims to the cure of inebriety by secret medicines and processes and expressed his confidence in the treatment of inebriates in licensed reformatories by recognised therapeutic means.—The paper was discussed by Dr. FORMAN, vice-chairman of the committee of the London County Council for providing Inebriate Asylums, Dr. MORTON, Dr. HEYWOOD SMITH, Dr. ARCHDALL REID, Dr. STEWART, and others.

On Friday morning, at 10 o'clock, Mr. HAYES NEWINGTON exhibited and described the Plans of the new East Sussex Asylum, in which a hospital for 250 cases is a prominent feature. Provision is also being made for 60 idiot children in a separate building. Some villas were being built for the accommodation of male cases and it was intended to erect more as time went on.—The paper was discussed by Dr. CLOUSTON, Dr. ROBERT JONES, Dr. TURNBULL, Dr. MERCIER, and others, and Mr. NEWINGTON replied.

The rest of the morning was devoted to lantern demonstrations by Dr. ORR, Dr. COWEN, Dr. G. A. WATSON, Dr. BARRETT, and Dr. J. TURNER by which the Morbid Anatomy of General Paralysis of the Insane, Juvenile General Paralysis, Lepto-meningitis, and alterations produced by Disease in the Giant Nerve-cells of the Cortex were fully pointed out and it is evident that some of the younger members of the association are doing good work.

Dr. SHAW BOLTON exhibited some naked-eye preparations and specimens from the Museum of the Pathological Laboratory of the London Asylums at Claybury and Dr. CLOUSTON showed for Dr. FORD ROBERTSON a microscopical demonstration of the Normal and Pathological Histology of Mesoglia Cells.

In the afternoon Dr. BRUCE read a paper prepared by himself and Dr. ALEXANDER on Observations upon the Various Physical Changes in the Acute and Sub-acute Stages of Melancholia in which he pointed out that among other changes there was increased blood-pressure and a decreased excretion of urea and urine in the acute stage and not such high pressure and more abundant excretion of urea and urine in the sub-acute stage. In the acute stage the blood-pressure should be reduced by, among other remedies, rest in bed and vapour baths.—The paper was discussed by Dr. CLOUSTON, Dr. MICKLE, and others and Dr. BRUCE replied.

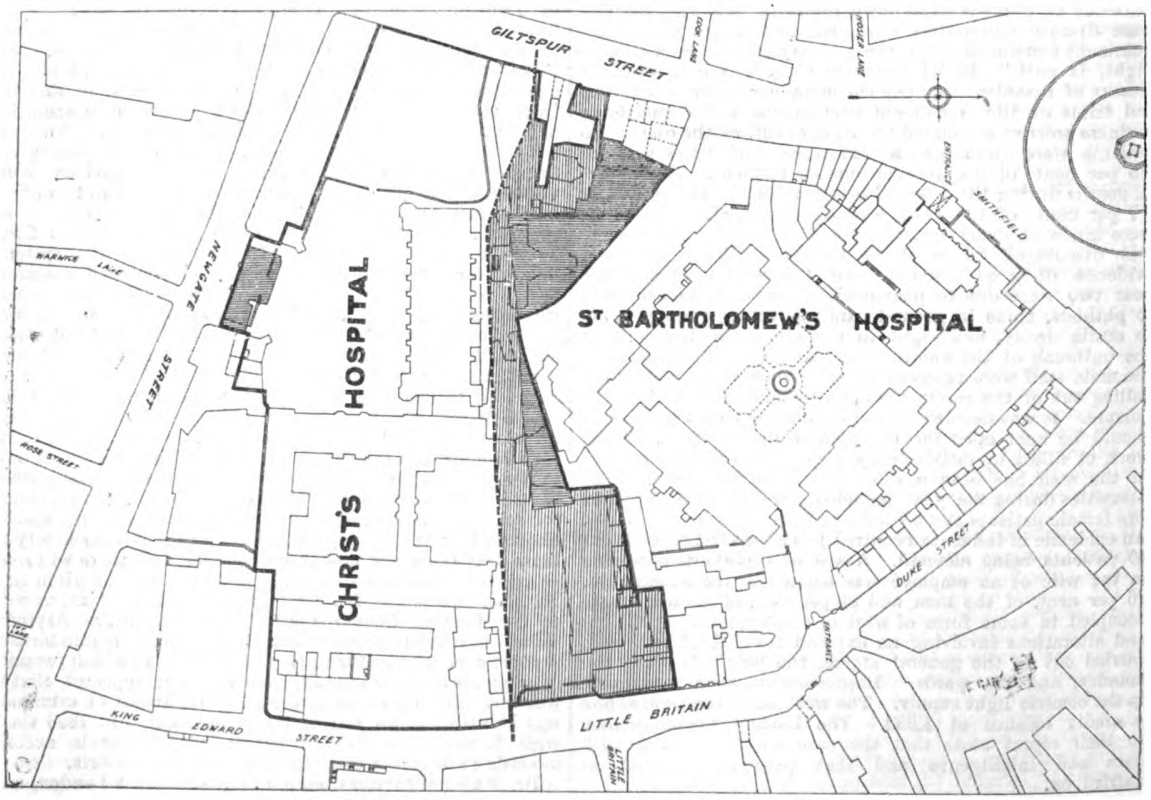
Mr. BEADLES read a paper on the Insane Jew, in which it was mentioned that general paralysis was common among Jews but epilepsy was rare.

Papers were afterwards read by Dr. SULLIVAN on Alcoholic Homicide, Dr. BLAIR on Non-diabetic Glycosuria, Dr. SHOYER on an Angeioma of Broca's Convolution in a Lunatic, and by Dr. EDRIDGE-GREEN on Psycho-physical Perception, but want of space prevents a description of them being given.

The annual dinner was held on Thursday evening, July 26th, at the Whitehall Rooms, Hôtel Métropole, at 8 P.M., the President, Dr. FLETCHER BEACH, being in the chair. On Saturday the President and Mrs. Fletcher Beach were "At Home" to members and their friends at Kingston Hill. Fortunately the atmospheric disturbance of the previous day had passed off, and the re-union of members and their friends brought to a close a very successful meeting.

## ST. BARTHOLOMEW'S HOSPITAL AND CHRIST'S HOSPITAL.

THE accompanying plan shows very clearly the areas at present occupied by St. Bartholomew's Hospital and Christ's Hospital respectively. The land that St. Bartholomew's Hospital desires to acquire lies immediately on its southern boundary, being all that part of Christ's Hospital north of the broken line drawn from east to west across the plan. It is 1 acre 1 rood and 29 poles in extent. In the year 1819 Christ's Hospital was pressed for space and at their request St. Bartholomew's Hospital then gave up to them in exchange for other property a considerable part of the identical land that the latter now wishes to re-acquire. The authorities of St. Bartholomew's Hospital did not then foresee the urgent need that would subsequently arise for most of the very land which they were then parting with. That land is shaded horizontally. Almost the whole of the frontage that Christ's




Plan of St. Bartholomew's Hospital and Christ's Hospital with the area in dispute.

Hospital now possesses in Newgate-street was included in that exchange. The St. Bartholomew's minutes of the time record that the exchange was made for "the conveniency of Christ's Hospital" and that in assenting to it St. Bartholomew's Hospital was "actuated by the most liberal motives" towards that institution.

## FACTORIES AND WORKSHOPS IN 1899.

### II.[1]

No one can study the report of the Chief Inspector of Factories without being struck with the wide range of the work to be done by factory inspectors and the variety of the causes which make their work difficult to carry out effectively. That their duties are not limited to those most obviously suggested by the title "inspector" will be appreciated by all who remember that, as a rule, they have to conduct their own prosecutions. This necessarily implies being frequently pitted in a court of law against a skilled advocate accustomed to handle the tribunal before which he appears, while the tribunal itself may be composed of borough magistrates personally acquainted with the accused, themselves involved in similar trades and equally liable to inspection and prosecution. In an extreme instance (given at p. 247) a Bench mainly composed of local fellow-traders refused to convict in spite of the plain meaning of the Act, and in spite of the opinion of the stipendiary magistrates present that on the facts disclosed in evidence there was no possible alternative, the Bench finally refused to state a case for the opinion of a higher court in face of the authoritative demand of the representative of the Attorney-General for Ireland. That this should occur in the distressful country is not surprising, although it is a little disconcerting to those concerned in such prosecutions to find the compulsory protection of the working poor against the dangers of labour treated as another injustice to Ireland.

A glimpse of the difficulties attending the enforcement of Factory Acts in extreme cases may best be given by quotation from the report of Miss Deane, one of two lady inspectors temporarily employed during the past year in Donegal. "The struggle in which we found ourselves engaged," she writes, "involved a study of Irish law procedure which cannot but be invaluable to us, and has been carried on with a courage and tenacity which can only be described as dogged on the part of Miss Squire, who has lived for the most part practically under police protection, and who was much cheered by the undoubted sympathy and gratitude of the peasants on whose behalf she fought. ..... Nothing but a saving sense of humour could alleviate the misery of the long car drives of 18 and 20 miles which I took at 5.30 on dark and stormy mornings in November and December in pouring rain to fetch witnesses to the courts, no car-driver in the neighbourhood being available or willing to incur the consequence of aiding 'the Government' by bringing in the witnesses." It is consoling to read the above reference to the gratitude of the peasants on whose behalf all this was done by two ladies who, in the course of the year, travelled 9916 and 8518 miles respectively, but it is also possible to think that in cases of difficulty in which a great deal of time and labour are likely to be expended legal assistance should be afforded to the inspector who, whether man or woman, probably has not too much time in the year for the efficient performance of the primary duty of inspection.

The report of the medical inspector, Dr. T. M. Legge, is the last one given and is naturally one of the most interesting and one of the most important. Nearly half of it is occupied with particulars and comments bearing upon the existence and prevention of lead poisoning. This is not surprising when the numerous industries are taken into account in which lead poisoning may occur. We have spoken of the use of lead in the glazing of earthenware and of the possibility of the danger from its use being lessened in the future either by the observance of the precautions prescribed by the Home Office or by other processes of glazing being substituted for it, and we note another instance of the disuse or improved use of a dangerous substance in the case of glass polishing with putty powder. Putty powder, it is stated, has been dispensed with altogether in certain kinds of work, but as nothing else at present imparts the same brilliancy, putty powder is still used for certain high-class work, such as the polishing of lenses, but it can be and is mixed with wax or pitch which prevents "splashing." In addition, however, to the danger arising from the actual smelting of lead, the manufacture of red and white lead, and the manufacture of china and glass, it must be remembered that lead poisoning has occurred in ironworks and has to be guarded against, to give some instances, in file-cutting, printing, tinning and enamelling hollow ironware, and enamelling iron plates, in several of the processes connected with the manufacture of electrical accumulators, in various kinds of painting, and in the employment of red and white lead, as, for example, in shipbuilding yards. Lead-poisoning is also one of those dangers in which the precautions to be taken do not only rest with the employers but in which the apathy of the workers themselves has to be contended against. As to this Mr. E. H. Osborn, the "engineering adviser," has an interesting note. He writes: "I have been much struck with the variations of the personal factor among the workers in this manufacture; of course, similar dissimilarities are to be found in all industries where so much depends upon personal care, cleanliness, and common sense, without which no code, however searching, can secure its fair success. I noticed a marked contrast between the workers on the opposite sides of the Tyne in these respects. ..... It is odd, too, that personal neglect is more usual among women than among men. This seems of almost universal application in the scheduled trades." Mr. Bond, certifying surgeon of Poole, writing apparently of female decorators in china works in Dorset, says: "I attach the greatest importance to constant and incessant supervision, a doctrine very repugnant to the workers who entertain a great regard for the liberty of the subject."

To pass to other topics dealt with in the medical inspector's report we find interesting notes from Mr. Farnfield, dentist to the Diamond Match Company, Liverpool, on the work done by him. He found about 6 per cent. of those who needed treatment before proceeding to work were prevented either by their own fears or by the ignorance of their parents from availing themselves of his services, and he continues: "With regard to the new hands I have passed 554 into the phosphorous rooms and 271 into the box-room, rejecting altogether 40 per cent. of those examined from bad teeth and gums. They were mostly in a very dirty state, few ever having cleaned their teeth prior to entering the factory. This makes it difficult to determine during a brief inspection the number of fillings they require, but I have noted down 869 fillings and 604 extractions, or, allowing for omissions, an average of two fillings and one extraction for those admitted into the phosphorous rooms and 601 fillings and 739 extractions, or an average of three fillings and three extractions for those to the box-room. ..... The greatest difficulty is at present in getting the requisite number of boys, as their teeth are mostly in a very bad state, and it is very difficult to persuade the average lad of 14 years to trouble at all about them." It will be recollected that the same difficulty occurs in the obtaining of suitable recruits for Her Majesty's army and navy, and it may be suggested that if the compulsory use of the tooth-brush were instituted in public elementary schools it might be classed by some under the heading of "grandmotherly legislation," but it is no more "grandmotherly" to make a child brush his teeth than to compel his parent engaged in a dangerous manufacture to wash before eating or to wear a respirator.

Among other matters dealt with by Dr. Legge we note that he gives the rules in force in the German empire for the prevention of anthrax from handling hair and bristles, as requiring the disinfection of all material not liable to serious damage by such processes as follows: either (1) by the action for at least one half-hour of current steam under a pressure of 1·15 atmospheres; (2) by boiling for at least one quarter of an hour in a 2 per cent. solution of potassium permanganate and subsequent bleaching in a from 3 to 4 per cent. solution of sulphurous acid; or (3) by boiling in water for at least two hours. In order to make the steam process effective, Dr. Legge points out, the bales must be opened—in itself a task involving some danger. Attention is called on another page to the frequent occurrence of tetanus, where workers in jute mills have met with injury; with regard to this Dr. Legge suggests that the soil in which the jute is grown may be particularly rich in tetanus bacilli and states that inquiry is being made in India as to the incidence of tetanus among jute workers there. The usual complete tables are appended to the reports upon which we have commented.

[1] No. I. was published in THE LANCET of July 28th, 1900, p. 285.

# THE LANCET.

*LONDON: SATURDAY, AUGUST 11, 1900.*


IT has been a pleasure to us to report with some fulness the proceedings of the First International Congress on Medical Ethics or Deontology held in Paris, and extending over four days, beginning on July 23rd. Our Special Commissioner has done much by his investigations into the state of medical organisation in Great Britain and in several foreign countries to prepare the way for this Congress, and all the subjects dealt with are of particular interest to our readers. The ethics of medicine are as old as HIPPOCRATES, if they are not older, and it is a proof of their strength that they have for so many ages been recognised and more or less acted on by members of the profession in every part of the world. Of late years, owing to great changes in society and in the organisation of its various classes, it has appeared to many that more definition of ethical principles and a completer organisation of the profession are necessary for the guidance of its members that they may maintain their high position in the esteem of mankind. Accordingly various societies in different countries have been instituted for the purpose of defining, declaring, and enforcing these principles. Most of these societies have arisen out of voluntary effort. Others, as those in Austria and Germany, have been established by law and have been endowed with strong disciplinary powers over all members of the profession. A Congress at which representatives and delegates from the principal of these societies were present must have a powerful effect in helping medical men to assert the claims of the medical profession and to uphold its dignity in their several countries.

The foundation of medical ethics rests on the fact that the relations of the medical profession to society and to its individual members are so serious and confidential as to necessitate a special code of conduct for medical men, while the dignity of the profession depends on the degree to which its individual members respect themselves and respect each other. Dr. GRASSET quoted DESCHAMBRE as saying that for medical dignity to be respected the medical man must first be imbued with the sentiment of self-respect. And he developed this sentiment admirably by saying: "The medical man will first seek to honour his profession by honouring himself. Placing himself beyond the possibility of reproach he will pay every deference to his colleagues and be guided by the sentiment of duty and honour, not by the desire of material gain. If the public are to respect medical men the latter must first respect each other." If such principles could be implanted in all medical men there would be little need of medical organisations, voluntary or statutory, to enforce them. They do exist and are operative in a large majority of the profession, but the question raised in the Congress is, How are we to deal with those who have little or no sense of such principles and how shall the profession be protected from those members of it who are blind to the way of honour and who put their own individual interests above the dignity and interest of the profession? The answer to this question is twofold. First, we must make sure that all medical men know their duty to their profession; and secondly, we must find some means of gently compelling them to do it. It was amply recognised at the Congress that many erring members err from want of knowledge and of thought. There is no adequate teaching of medical morals either in the books or in the schools of medicine. They are taken for granted. Several speakers urged that the subject should be dealt with and taught in the medical schools; others that it should be more fully discussed in books. But there was a general agreement that in all countries and localities there should be an organisation charged with the defining of medical duty in relation to difficult circumstances or new questions. In regard to ethical matters the opinion of men of repute in the profession on questions of conduct has a certain weight, on the strength of which penal or disciplinary measures may properly be taken. The General Medical Council acts on this principle in Great Britain, and its action has been amply supported by courts of law. In Austria and Germany, as we have seen, Chambers have been established by law having, in cases of misconduct, power to fine, or even to take away the right of practice. But it is obvious that such extreme powers must be reserved for extreme offences and that short of such offences voluntary and persuasive means of remonstrance must be chiefly relied on. Even in autocratic Austria Dr. ADLER showed that the powers of the Medical Chamber are not absolute but are controlled by the local government authorities, which may rescind the action of the Chamber when it goes too far.

Dr. DE GOUVÉA of Rio Janeiro showed that medical ethics were at a low ebb in that beautiful capital till the formation of a medical society in the city. This produced good effects which led to the formation of other societies throughout Brazil. Dr. ERNEST JENDRASSIK of Budapest gave a most encouraging account of the work of a medical union which Hungarian practitioners have formed, preferring this to the Medical Chambers created by law in Germany and Austria. It has collected statistics and is seeking to fix minimum fees for insurance work and for medical contract work; it has also established a benefit fund, but its fundamental purpose is to abolish "undercutting." Dr. HANSSON of Christiania showed that the Norwegian Medical Association had dealt with the question of sick club practice, and had laid down the principle that the post of medical officer was not to be accepted unless with the consent of the local branch of the Association. Such reports as these from different parts of the world, while they testify to the value of the Congress, show the variety of opinion prevailing and the need for patience and breadth of judgment. The time has not yet come for an international code of medical ethics. The proposal for a committee to draw up such a code did not take definite form but remained as a pious wish. None the less the Congress has done and will do great good by

ventilating opinions and schemes and by showing that in all countries the same problems are pressing for solution by the medical profession.

THE Presidential Address on the Prevention of Insanity delivered at the opening of the Section of Psychology of the British Medical Association by Dr. PERCY SMITH points out what must be the main lines of advance and attack in dealing with the problem of insanity—viz., the necessity of the checking or prevention of insanity at its sources. The increase of insanity during the past decade has stirred thoughtful minds profoundly. The sociological study of mental disease in relation to the ancestry, collaterals, and descendants of lunatics, the pathological investigation of the morbid conditions present in insanity both during life and after death, and, finally, the study of the annual reports dealing with the care and treatment of the insane in our public and private asylums, must have tended to convince many that progress in the future must be sought in prevention of insanity at its sources. This has been, and always must be, the first and most practical aim of medicine generally, but it would appear that in the province of psychiatric medicine the importance of the principle has not yet been sufficiently realised. For under existing conditions the alienist has been confronted with two main problems—viz.: (1) the classification, housing, and treatment in large public institutions and on a large scale of patients suffering mainly from chronic insanities and allied infirmities of an incurable nature; and (2) the special study and treatment—on the "hospital" system and on a small scale at present—of the acute and curable insanities. With his hands in this way filled he has not had as much leisure as is desirable for considering the prevention of insanity.

The annual report of the Commissioners in Lunacy states that on Jan. 1st, 1899, the total number of lunatics in England and Wales was 105,086, "being an increase on the corresponding number on Jan. 1st, 1898, of 3114, the largest annual increase we have yet had to record." This increase, Dr. PERCY SMITH points out, refers to all classes of patients. The same report shows the following ratios of insanity in England and Wales. In 1869 the ratio was 1 to 418 of the general population, in 1879 it was 1 to 363, in 1889 it was 1 to 337, and in 1899 it was 1 to 302. In Scotland the ratios were as follows: in 1881 the ratio was 1 to 374 of the general population, in 1891 it was 1 to 320, and in 1899 it was 1 to 278. In Ireland the figures were as follows: in 1871 the ratio was 1 to 328, in 1881 it was 1 to 281, and in 1899 it was 1 in 222. The increase of the insane in proportion to population is thus maintained throughout the United Kingdom and is both significant and sinister. The numbers of the insane increase and the county and borough authorities are constantly being confronted by the demand for more accommodation in county and borough asylums. New asylums spring up as the result and the taxpayer has constantly to put his hand in his pocket to defray expenses.

The causes which underlie this condition of things are manifold, but Dr. PERCY SMITH draws attention to three items which may be specially considered—viz., first, the propagation of the race by those of insane inheritance or by those who have suffered from insanity; secondly, the influence of alcohol in the production of insanity and the need for preventive legislation; and, thirdly, the causation of general paralysis by syphilis. Heredity, alcoholism, and syphilis are all potent factors in the causation of insanity. Whilst it is unlikely that the legislature will intervene to place any legal bar to the marriage of individuals of insane inheritance, much may be hoped for from the education of public opinion regarding the baneful effects of heredity in the offspring of parents afflicted with a taint of insanity.

As regards the marriages of congenital imbeciles, chronic epileptics, or those who have been the subjects of one or more attacks of insanity there can be little doubt that prohibitive legislation would be both desirable and even necessary where the welfare of the community has to be considered. Alcoholism is a factor of prime importance in the causation of insanity. The intoxication of married couples on the wedding night has, by quite unimaginative observers, been believed to result in the production of offspring suffering from imbecility and other forms of cerebral disease. The offspring born of parents addicted to chronic alcoholic habits are often known to be afflicted with hereditary drink-craving, grave hysteria, epilepsy, imbecility, and other forms of cerebral and mental disease, the classical works of MOREL, DEJERINE, LEGRAINE, and others furnishing innumerable instances. Similar evil effects are known to follow in those addicted to absinthe-drinking or to the morphia habit, and the deleterious influence is liable to affect the offspring as well. No doubt in many cases the alcoholic is a person who starts life with an unstable nervous system and to a certain extent he is *ipso facto* defective in self-control and goes without much resistance into the paths of chronic alcoholism. But his paths thither are rendered smooth by the great facilities afforded for drinking. The Inebriates Act of 1898 and the new powers for dealing with convicted inebriates, "though almost a dead letter at first in consequence of the supineness of local authorities," says Dr. PERCY SMITH, are now effective and mark the first step in a new legislative departure. The presence of alcoholic intemperance as a cause of insanity may be traceable in about 25 per cent. of all male admissions to asylums, and even those who hold the liberty of the subject so sacred as to wish to leave the alcoholic to drink himself to organic disease and madness and his family to poverty and suffering might turn their attention to the fact "that nearly a quarter of the insane are so, either wholly or in part, from a preventable cause, and that in a large proportion of these cases the ratepayer has to bear the expense."

There can be no question that acquired or congenital syphilis is one of the most potent causes of general paralysis of the insane. Dr. PERCY SMITH also points out that the general paralytic subject can transmit the disease to his children, for during the last few years cases have been recorded of "juvenile general paralysis" in nearly all of which a history of parental syphilis was ascertained and in several of which the father had previously died from general paralysis. If syphilis were made a notifiable disease a first step, Dr. PERCY SMITH thinks, would be taken towards diminishing its fatal sequel in paralysis, but the difficulties of procedure are here well-nigh insurmountable. In

Finland, it is true, as the result of the legislature enabling the compulsory examination and treatment in hospital of suspected individuals, syphilis has much diminished in the course of 20 years; congenital syphilis has become less frequent, and both the hereditary and acquired forms of syphilis have become of much milder type. Finland is not Great Britain, and public opinion is not with us ripe for legislation on this point.

Some of the factors in the production of insanity are capable of being dealt with by way of restriction or prevention. The ravages of alcoholism, the contagion of tuberculosis—a known and potent cause of idiocy and imbecility in the offspring of affected parents—and the marriage of congenital imbeciles, chronic epileptics, and persons who have had one or more attacks of insanity, all these offer themselves for the application of preventive measures. The free and unchecked production and propagation of the lunatic, the idiot, the imbecile, and the neuropath constitute a serious and growing danger to the safety of society, a menace to its public health, and a burden to its resources.

A REPORT upon the condition of the London burial-grounds[1] which the London County Council has just issued deserves more than passing notice from us, for it deals in a practical way with a subject of great concern to the public health, one that is more than any other surrounded by feelings of religious sentiment. The report consists in the main of an excellent account by Dr. C. W. F. YOUNG of burial-grounds in which the London dead are interred, and of an introductory statement by Mr. SHIRLEY MURPHY, who indicates the conclusions at which he has arrived and the course which he thinks should be adopted with a view to bring the method of disposal of the dead into better harmony with health requirements. The report is the outcome of a resolution (adopted by the London County Council at the instance of Mr. SHAW-LEFEVRE) that inquiry should be made as to the condition of the burial-grounds chiefly used by the population of the County of London, as to whether further provision for burial is required, and whether further regulation is necessary in the interests of public health and decency. The information, therefore, which the report supplies is directed to answer these questions. So far as quantity of accommodation for the London dead in existing burial-grounds is concerned it does not suggest any doubt that for the immediate present there is ample provision; but it does indicate, and that very definitely, that the instruction of the London County Council has come none too early. The representatives of London on its County Council, as well as in the Imperial Parliament, should take into serious consideration without undue loss of time the course to be adopted for the disposal of the 100,000 corpses and more which annually have to be provided with resting-places.

The whole trend of the report is towards one conclusion. The inhabitants of London must determine whether the system of interment which is to be practised in the future is to aim at the preservation of the dead as in the past or at the speedy dissolution of all human remains. Upon this question the medical officer of health of the County of London has no doubt. His verdict is that every opportunity should be given for speedy dissolution, and he holds that no new brick graves and no new vaults should be provided in London. Beyond this he points out the advantages that would result from some local representative body having the power to make regulations which could be strengthened from time to time and which would determine the conditions under which interment should be carried out. Public opinion is evidently, as the report shows, moving in the desired direction, but it moves slowly. The wish to preserve as long as possible the remains of those who in life have been loved governs the usual method of interment, while inseparable from this sentiment is the interest of the undertaker. Neither change in sentiment nor change in practice can be suddenly effected, but change would be more speedily brought about if there were guidance by regulations made by those who are in touch with popular feeling and if trade interests could be eliminated by the vesting of all burial-grounds in public ownership. The teaching of Sir SEYMOUR HADEN and of Dr. VIVIAN POORE cannot longer be disregarded. Their work, and especially that of Sir SEYMOUR HADEN, has shown how speedily the earth does its duty when man does not by artificial methods prevent nature from accomplishing her final object, the resolution of organic matter into its ultimate elements. The question which remains is how this teaching can be adopted in the disposal of thousands of human bodies with due regard for the feelings of the survivors and with due regard to the conditions existing in centres of population.

The report points out the unsuitability of clay soil for the purpose of burial, and Dr. YOUNG discusses fully the results obtained under different conditions. Mr. SHIRLEY MURPHY hesitates to accept surface burial as a practical solution of the difficulty without more experience, but he definitely indicates the need for the experiment of surface burial to be made under proper conditions. There should be some opportunity for this to be done soon, inasmuch as the control of burial-grounds has been transferred by Parliament during the present session from the Home Office to the Local Government Board, showing that the matter is intended henceforth to be considered especially in its sanitary relations. The report published by the London County Council sets out the issues well and we are interested in the manner in which it will be received. At a later date we shall discuss in more detail the various questions which it raises.

[1] Sanitary Condition of Cemeteries and Burial-grounds: A report by the medical officer of health presenting a report by Dr. C. W. F. Young, assistant medical officer of health, as to the condition of the cemeteries and burial-grounds chiefly used by the population of the County of London, as to whether further provision for burial is required, and whether further regulation is necessary in the interest of public health and decency. London: P. S. King and Son.

# Annotations.

"Ne quid nimis."

## THE POSITION AT THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

WE publish in another column a further communication from the medical staff of the National Hospital for the Paralysed and Epileptic, Queen-square, and we share with them the surprise which they express in their opening sentence. Apparently to-day (Saturday, August 11th) has been fixed by the board of management for an official

general meeting of governors and subscribers "to consider and determine the following questions—that is to say (1) whether the demand of the medical and surgical staff for direct representation upon the board should be granted; and (2) whether it is desirable to hold a further inquiry into the condition of the hospital." If, as we desire to believe, the persons who have selected this date to make such an inquiry are serious in their intention that the whole truth shall be known, and in their determination to put an early end to a most unfortunate situation, they have taken a very extraordinary course, for we agree with the medical staff that no decision arrived at on August 11th can be regarded as final. The whole matter must be reopened at a meeting summoned at an appropriate time when the various points at issue can be placed fully before the governors. If the misunderstanding between the board of management of the hospital and the medical staff was one that turned upon the insufficient washing of draw-sheets, or even on the scope of the secretary-director's control, then in the general interests of the hospital and of the public, the quickest method of procedure might be the best, simply because it was the quickest. But in this quarrel is involved the whole question of the position of an honorary medical staff towards their hospital. Are medical men when giving their services to these charities to be treated simply and solely as the irresponsible servants of the board of management? Is their complete duty to the public discharged by being blindly obedient to that board in all matters outside the actual prescribing for the patients? The payment, again, by out-patients of money in return for services rendered to them by the honorary staff of a hospital is a procedure so open to abuse that the advisability of a charity adopting it ought to be very closely looked into. All these are large questions and should certainly not be dealt with by a hastily convened meeting in the deadest season of the year.

## THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE final programme of this Congress has just been issued and we are informed that a preparatory meeting will be held at the Faculty of Medicine of Paris this (Friday) morning, August 10th, at 10 o'clock. The Prime Minister, M. Waldeck-Rousseau, will preside over the opening ceremony at 3 P.M. in the great amphitheatre of the Faculty of Medicine. The sections will meet on Saturday at 9 A.M. and the members will visit the Pasteur Institute at 3 P.M. On Sunday, August 12th, there is to be an excursion in the afternoon to Achères, where a portion of the sewage of Paris is utilised for agricultural purposes. The sections will meet every morning from Monday, August 13th, to Friday, the 17th. The afternoons will be devoted to excursions and receptions. On Monday afternoon the members will visit some of the hospitals, the sewers, the filtering-beds, the sanitary museum of the town of Paris, the Institute of Animal Vaccine, &c. On Tuesday afternoon they will be officially received at the Hôtel de Ville by the Paris Municipal Council. On Wednesday afternoon they will be shown some of the sanitary exhibits of the Exhibition. On Thursday afternoon there will be an excursion to the chocolate factory and model artisan village of M. Menier at Noisiel (Seine et Marne). On Friday afternoon, August 17th, the closing ceremony will take place. It had been arranged that M. Loubet, President of the Republic, would receive members of the Congress at the Palace of the Elysée on the evening of August 9th and that there would be a reception by the Prime Minister at the Ministry of the Interior on the evening of August 11th. The first and the second of these receptions have been postponed on account of the funeral of the late King of Italy, but there will be a garden party at the Elysée on August 10th in the afternoon. The private receptions, however, will hold good, and the first of these is given by the President of the Congress, Professor Brouardel, Dean of the Faculty, in the evening, on August 10th, at the Faculty of Medicine, where he has his official residence. On August 13th there will be a subscription banquet at the Auberge des Nations in the Old Paris Street of the Exhibition. For the excursions to Achères and Noisiel, as the number of places is limited, it would be well to apply early at the Faculty of Medicine, rue de l'École de Médecine. Here, in the salle Dubois, is the office of the Congress, where secretaries are in attendance daily to give all the information necessary. Members on arriving in Paris should at once proceed to this office, give their addresses, obtain their cards and insignia, and inscribe themselves for all the excursions, &c., in which they desire to participate. This office is open from 9 A.M. till noon and from 2 to 6 P.M. There is also a room set apart at the Faculty of Medicine for reading and correspondence which is at the disposal of members of the Congress. The wives of members are invited to assist at the opening ceremony and at all the receptions and excursions. It only remains to add that all persons interested in sanitary reform can become members of the Congress as it is open not only to medical men but to sanitary engineers, architects, municipal councillors, and all persons connected with some phase of sanitary work or administration. The entrance fee is £1, which should be sent to Dr. A. J. Martin, Secretary-General, 21, rue de l'École de Médecine, Paris. The Congress, as previously stated, is divided into eight sections, dealing with bacteriology, food-supply, sanitary engineering, childhood, industrial hygiene and unwholesome dwellings, military, naval, and colonial hygiene, international sanitary measures, and the sanitation of the means of communication, ships, railways, &c. These eight sections will meet at or near the Faculty of Medicine; therefore members had better secure rooms in or near the Latin Quarter. In the better class hotels, frequented by university students, rooms can be obtained for from 4*s*. to 5*s*. a day; and life in the Paris restaurants is as good and nearly as cheap as in ordinary times. It is desirable to secure rooms before starting. The Committee of the Congress also can recommend agencies which have undertaken to provide accommodation for the members at moderate and fixed prices.

## JAUNDICE WITHOUT BILE IN THE URINE.

AT the meeting of the Société Médicale des Hôpitaux of Paris held on July 6th MM. Pierre Merklen and Janot showed a case of jaundice in which bile pigment was entirely absent from the urine, *ictère acholurique*. This condition has been only recently recognised—by M. Hayem.[1] In a communication entitled, "Special Form of Colouration of the Skin in certain Dyspeptics: Jaundice without Biliary Pigment or Urobilin in the Urine," he has called attention to a peculiar form of sub-icterus characterised by a chamois-leather tint of the skin, analogous to the xanthochromi observed by Besnier in certain cases of xanthoma, and specially marked in the palms and in the folds of flexure of the fingers. The colouration is certainly a form of jaundice, for in spite of the absence of biliary pigment from the urine the blood serum is tinged with it. The etiology and evolution are not clearly known. According to a second communication of M. Hayem[2] the sub-icterus develops slowly and insidiously, and once established persists, although it is subject to variations. It supervenes in certain dyspeptics presenting the characteristic signs of parenchymatous gastritis and is accompanied by neurasthenic

[1] Bulletin de la Société Médicale des Hôpitaux, May 14th, 1897.
[2] Ibid., March 24th, 1899; THE LANCET, June 3rd, 1899, p. 1506.

symptoms, fatigue, disinclination for work, emaciation, and nervous irritability and depression. The patient shown to the society corresponded completely to the type described by M. Hayem. She was a woman, aged 53 years, who had been treated for chlorosis since the age of 23 years and was subject since the age of 25 years to disseminated and erratic pains which corresponded to the clinical type of general neuralgia of Valleix or painful neurasthenia. For 18 months she had suffered from obstinate dyspepsia with furred tongue, fœtid breath, epigastric pains, constipation, and sometimes glairy stools. For three months there had been a yellow tint of the skin without biliary colouration of the conjunctiva or urine. The tint was of a chamois-leather colour, especially marked on the face, hands, along the crests of the tibiæ, and on the soles. It suggested xanthodermia rather than icterus. The mucous membranes were not coloured and the urine, which was examined on several occasions, never showed a trace of bile pigment. This was in favour of the diagnosis of xanthodermia but the presence of biliary pigment in the blood serum settled the question. Blood obtained by cupping was examined after the retraction of the clot. The transuded serum was of a light mahogany colour; it darkened all the spectrum from blue to violet and gave Gmelin's reaction. After the appearance of the discolouration of the skin the patient wasted, the constipation became more marked than ever, and the neurasthenia increased. Examination of the internal organs was negative; the liver was not enlarged and the fæces were neither bilious nor discoloured. The urine contained neither sugar nor albumin; it amounted to from 1000 to 1200 grammes in the 24 hours, was of specific gravity 1013, and contained about 15 grammes of urea. This oliguria was no doubt in relation with the dyspepsia, for the renal permeability was normal. The pathogenesis of *ictère acholurique* was disputed. MM. Gilbert and Castaigne thought that the acholuria was due, at least usually, to defect of renal permeability; but this case was opposed to that hypothesis. M. Hayem supposed that there was a slight infection of the biliary passages and too little bile pigment in the blood to pass the renal filter. In the present case the icteric tint diminished 10 days after the administration of sulphate of soda, in daily doses of 75 grains, which regulated the bowels.

## THE WATER-SUPPLY OF THE CITY OF LONDON

MORE than half a century ago Mr. (now Sir) John Simon, who was at the time medical officer of health to the City of London, strongly urged in his annual report that the supply of water for domestic use should be constantly instead of intermittently given. We regret to see that Dr. Sedgwick Saunders, the present medical officer of health to the City, in a report which has recently been issued, still finds cause to complain that the East London Waterworks Company has failed to carry out the statutory requirements which have been made that the water consumers in its district shall receive a constant service.

"In October, 1898," Dr. Sedgwick Saunders says, "I reported upon the absence of domestic cisterns in 89 houses at the following places—viz.: 29 in Bishopsgate-street Without, eight in Brushfield-street, four in George and Catherine Wheel-alley, one in Great Alie-street, two in Little Somerset-court, 20 in Mansell-street, 14 in Montague-court, 10 in Mason's-court, and one in Spital-yard.

The necessity for this provision arose from a scarcity of the water derived from the East London Water Company during the exceptionally dry summer season, the supply being only furnished for a limited time at certain periods of the day. The want of these receptacles for storing water occasioned much suffering in the poorer districts, owing to its intermittent delivery.

The Sanitary Committee at once recognised the importance of seeking action, and under the powers conferred upon them by the City of London Sewers Acts, 1848, 1851, gave an order that in all the above-mentioned dwellings cisterns should be erected without delay.

After much negotiation the owners of 59 houses supplied the deficiency without coercion, but in 18 instances it was not until pressure was put upon unwilling landlords by the issuing of 'compulsory' orders that this was effected. In five cases, however, the owners proved obstinate, and the Public Health Department was driven to the only alternative of ordering the works to be executed by its contractors, and in due course the defaulters will be sued for the cost thereof, as the law provides.

The question of doing away with cisterns in domiciles has exercised the minds of owners of house property and others, who argue that a 'constant service' ensures a purer supply of water; and so it certainly does when cisterns are improperly placed under inaccessible roofs or beneath floors without efficient protection from weather, dust, droppings of animals, or other sources of pollution; but if they are constructed in positions where they can be easily inspected and frequently cleansed we may concede the point, but it is only the commonest of common sense to insist upon some relief from the tyranny of the water companies, who, whilst charging the maximum of tax justified by inequitable legislation, give in return the minimum of accommodation in periods of water famine or when any accidental disruption occurs in their mains or other mechanical appliances; in other words, when the so-called 'constant service' becomes irregular.

What is the tenant to do under this contingency? The poor have neither the means nor the leisure to collect and store water for use during the intermissions of supply, and to them the want of water entails an amount of discomfort and uncleanliness that emphasises the bitterness of want and misery."

We do not propose to discuss in detail the various points raised by the paragraphs we have quoted from Dr. Sedgwick Saunders's report, but they naturally suggest one or two questions which are worthy of consideration. When a constant supply of water is given there is no need for cisterns, and water drawn straight from the mains is preferable for all domestic purposes. Under the present statutory regulations, as readers of THE LANCET know, all the London water companies are required to give constant service. This being the case, is it fair that the owner of a house in London should be out of pocket because a water company fails to perform its statutory duty? If a cistern be rendered necessary by the default of a water company, would it not be right that the cost of the cistern should be paid by that defaulting company? A metropolitan water company which fails to give constant service renders itself liable to heavy fines which can be inflicted at the instance of a metropolitan authority. Has the Corporation of London made any attempt to bring this moral pressure to bear on the East London Waterworks Company for its defaults? And if not, why not? Dr. Sedgwick Saunders gives no information on this subject. The City of London is chiefly supplied with water by the New River Company, to which Dr. Sedgwick Saunders in his report, no doubt inadvertently, does a considerable injustice by omitting to differentiate it from the "companies who, whilst charging the maximum of tax justified by inequitable legislation (i.e., charging the price settled by Parliament), give in return the minimum of accommodation." It is but simple justice to point out that the New River Company does not exact the maximum water-rents to which it is entitled, a fact which was clearly pointed out and duly emphasized by the City Remembrancer in the evidence which he lately gave before Lord Llandaff's Commission.

## CYSTS IN THE ABDOMINAL WALL STRUCTURALLY IDENTICAL WITH OVARIAN CYSTS.

IN the *Boston Medical and Surgical Journal* of July 12th Dr. John Homans describes this curious and rare condition. When operating on a very old-standing enormous adherent ovarian cyst weighing 102 lb. he was surprised to find a large cyst in the abdominal wall in the epigastric region

entirely distinct from the ovarian tumour, but of the same character. Two months after the operation, when the patient was seen again, various cysts were scattered about in the abdominal wall. Microscopical examination of an excised cyst showed that it was a malignant cystadenoma of the ovary. The patient died suddenly soon afterwards, apparently from thrombosis. Olshausen mentions a similar case in which with an ovarian cyst there was a parietal cyst structurally resembling a glandular ovarian cyst. Dr. Homans makes no attempt to explain these cysts in the abdominal wall, but it cannot be doubted that they are secondary growths derived from the intra-abdominal ovarian cysts. Probably the infecting elements are conveyed to the abdominal wall through the medium of adhesions.

## SANITARY PROGRESS IN SHANGHAI.

THE evolution of China is one of the most attractive problems in the study of nations, and while the Celestial Empire may at this moment be at the very parting of the ways as regards its future the influence which European methods of sanitation are exerting upon one of China's greatest cities will have at least some interest for the readers of THE LANCET. Dr. Arthur Stanley, the medical officer of health of Shanghai, in presenting his second annual report is clearly impressed with the desirability of not altogether shutting our eyes to certain aspects of the Chinese who, he maintains, "solved the question of economic sanitation long ago." While, he adds, "the ultra-civilised Western elaborates destructors for burning garbage at a financial loss and turns sewage into the sea, the Chinaman uses both for manure." As to this, however, Dr. Stanley is evidently alive to the risk of infection from specifically polluted vegetables which this method involves, although he thinks that to turn the sewage into the river from which the water-supply is derived would be an act of "sanitary suicide." He considers that by modern hygiene, coupled with what is best in Chinese methods, Shanghai might be rendered a particularly healthy place; but overcrowding is the greatest drawback to progress, and the price of building land is so great that Dr. Stanley is of opinion that were the inhabitants polled as to whether they would prefer a lowering in the death-rate or an increase of trade profit they would assuredly select the latter. The estimated foreign population of Shanghai is 5510, inclusive of about 1000 which number represents the average shipping population. The native population is 322,000. The general death-rate among the resident foreign population was, during 1899, 18·87 per 1000 and among the native population only 9·1 per 1000. It would seem obvious from this that the native deaths are not properly recorded and this notwithstanding the fact that the population contains an excess of young adults. As regards the prevention of infectious disease, voluntary notification is in force, and a new permanent isolation hospital is about to be erected. For the control of plague there is a sanitary station under the port sanitary authority, the Imperial Maritime Customs, while in connexion with enteric fever protective inoculation is to be provided for all those who are, by reason of age or opportunity, particularly prone to contract the disease. In respect of malaria it is of interest to note that during the summer of 1900 mosquitoes from different parts were examined but no anopheles were found; steps, however, are being taken to eliminate the breeding places of the mosquito. Small-pox was responsible for nine deaths among the foreign population and 183 among the Chinese during 1899, and in consequence of the disease assuming epidemic proportions in 1899 vaccination and revaccination were much resorted to. There should, Dr. Stanley thinks, be no trouble in persuading the Chinese to adopt vaccination, seeing that the East was the source from which preventive small-pox inoculation had its birth. He suggests that the missionaries might well preach vaccination and revaccination, and he is apparently in favour of some form of compulsion. There was an epidemic of beri-beri among the Chinese prisoners at Shanghai during 1899, and out of 47 cases there were 11 deaths. One of the most encouraging signs of progress is the establishment of a bacteriological laboratory at Shanghai in which bacteriological examinations of one and another type are made, and where plague and cholera prophylactics are manufactured. Aseptic calf lymph is also prepared at the vaccine station, and some 5000 tubes, sufficient to vaccinate 14,000 people, were produced during 1899. Medical practitioners are advised to keep the tubes in the dark and, in summer, in an ice chest. Progress has been made in the general sanitary condition of Shanghai during 1899, and we read of 346 Chinese houses having been drained and of new building by-laws having recently been adopted. Sanitary regulations have been drawn up, and also new dairy regulations, and there are also "regulations for shops supplying perishable food to foreigners." All meat supplied to foreigners must bear the municipal stamp—"killed, municipal slaughter-house." In short, Shanghai is to be much congratulated upon its progress in sanitary matters, and it is to be hoped that the "Boxers" will not be afforded an opportunity of retarding the march of modern sanitation in this city.

## THE POSITION OF SUPERINTENDENT NURSES IN POOR-LAW INFIRMARIES.

IN our issue of Jan. 28th, 1899 (p. 251), we commented upon a paper read by Miss E. Julian, the matron of the Croydon Infirmary, upon the Need of Nursing Reform in Workhouse Infirmaries. The paper dealt mainly with the position of the under nurses and the difficulty which was experienced by the guardians in finding duly trained and qualified nurses ready to serve in workhouse infirmaries. Miss Julian, who is in a position to know her subject intimately, again took up her parable at the annual conference of the Matrons' Council held at 11, Chandos-street, W., on July 5th, the main part of her paper being devoted to the very anomalous position of superintendent nurses or matrons. This, Miss Julian says, is not remarkable—

"Seeing that this office exists in name only, the marvel is not that so few are available but that there are any at all, and this applies not only to the small provincial infirmaries attached to workhouses but to the large parish hospitals which are distinct from the workhouses and under separate administration. In the small workhouse infirmary the superintendent nurse is under the control of the master and matron; in the large parish hospital her position is precisely what the medical superintendent and the guardians choose to make it. The rules framed for the guidance of the superintendent of nurses in the Poor-law training schools of to-day are the same as those laid down for workhouse matrons by the Local Government Board in the Consolidated Orders of 1847 and are practically those of a working housekeeper. It is true that during the last decade through force of circumstances the supervision of the house staff has been handed over to an assistant matron, the care of culinary utensils to the cook, and the laundry to a superintendent, but the matron is still held responsible for the satisfactory performance of these duties notwithstanding. She is in addition required to aid the medical superintendent, and in his absence the assistant medical officer, in enforcing the due observance of all regulations laid down for the government of the infirmary on the part of the female servants therein, but the word 'nurse' is never mentioned in connexion with her duties, all responsibility with regard to the care of the sick and the control of the nursing staff being vested in the medical superintendent. From this it follows that the matron of a Poor-law infirmary, as superintendent of nurses, has no legal status whatever; her position is in no sense assured, but dependent on her surroundings. Every atom of power, any semblance of

authority, the matron may possess has been accorded her by act of grace; she can claim nothing as her bounden right."

The latter portion of Miss Julian's remarks is worded too strongly. All positions in life are what we make them, but we think that in the small workhouse infirmary the care of the sick and the provision for nursing should be vested in the general practitioner who is medical officer to the workhouse, but in the large parish infirmary responsibility with regard to the nursing staff, except as regards purely medical duties, should be, as is the case in any general hospital, vested in the matron or superintendent nurse. In country workhouses the position of the superintendent nurses should be made more independent of the master and matron and more dependent on the medical officer. Miss Julian thinks that the great parish hospitals should be taken over by the State and freed from the union brand and the workhouse taint. So long, she says, as workhouse nurses are regarded as being on a lower plane than those attached to voluntary hospitals so long will the sick poor in rate-supported institutions lack a full measure of skilled attention. There are no doubt difficulties in the way, but until some arrangement is made for separating the deserving poor from the class who never do any work and do not wish to work so long will the workhouse be looked upon as a disgrace instead of a refuge.

## THE HOUSING OF THE WORKING CLASSES.

AN interesting conference was held in London on the last two days of July upon the problems arising out of the overcrowded condition of great cities and the various efforts which have been made to deal with them. Sir Sydney Waterlow and Mr. R. M. Beachcroft, L.C.C., were chairmen of the two meetings held and various other gentlemen whose knowledge and experience qualified them to do so read papers and expressed their views, the general tenor of which might be said to be that whereas the rehousing of the class earning regular and substantial wages presented comparatively little difficulty and gave satisfactory results the question of how to provide wholesome dwellings in which members of the strata below these could and would live had hardly yet been solved. In addition to this there seemed to be a considerable weight of opinion adverse to the provisions already made by Parliament to enable local authorities and individuals to deal with the evils of overcrowding and to replace it by a better state of things, the necessity for the coöperation of individual effort being fully recognised. A resolution was passed that "the conference is of opinion that the present method of dealing with insanitary areas is extravagant and unsatisfactory and urges Parliament to provide some less expensive and more expeditious mode of procedure." It is certainly beyond question that legal processes in the United Kingdom are, as a rule, both cumbrous and costly, but at the same time the powers given under the Housing of the Working-classes Act will strike many as considerable and of such a nature that it should be impossible for them to be hastily employed or for the liabilities which they imply to be undertaken without due consideration.

## THE STUDY OF INEBRIETY.

THE Society for the Study of Inebriety has appointed a committee of medical men to inquire into the relation of heredity to the production of inebriety. The president is Dr. Wynn Westcott, coroner for North-East London, and the committee includes such well-known names as Mr. Victor Horsley, Dr. Sims Woodhead, Dr. Archdall Reid, Dr. Heywood Smith, Dr. Harry Campbell, with Dr. Thomas Morton as secretary. Much progress has been made with the investigation, and the medical profession is now asked to supply evidence on the following important subject: "The committee are fully satisfied that drunken parents tend to have children who become drunkards, but they earnestly desire to obtain evidence bearing upon the question whether a parent who himself inherits *no* special tendency to inebriety can, as the result of mere intemperate habits, entail upon his children a potential inebriety." Communications will be gratefully received by the president or secretary, and may be addressed to 396, Camden-road, London, N.

## THE LAMBETH WATERWORKS COMPANY.

A CORRESPONDENT complains in the *Times* that the Lambeth Waterworks Company has again lately failed to give a constant water service. Each metropolitan vestry and each individual water-rent payer now has power to punish a defaulting water company. It appears that the public spirit and energy which animated Mr. Archibald Dobbs do not co-exist in the district of the Lambeth Waterworks Company. It may be safely predicted that the full statutory fine inflicted on a peccant water company would be more effective than any number of letters to the newspapers. And the Courts are open.

## THE LATE DEBATE ON THE SOUTH AFRICAN COMMISSION.

IN the debate on the second reading of the Appropriation Bill a very lively encounter took place between Mr. Burdett-Coutts and Mr. Balfour. Mr. Burdett-Coutts attacked the South African Commission in strong terms. He contended that it was divested of all the power requisite to get at the truth, that witnesses would be afraid to give evidence before it lest they should injure their future prospects, and he appealed to Mr. Balfour to take a more serious and sympathetic view of the question than the Government had hitherto done. Mr. Balfour, who has throughout spoken with a certain degree of asperity, which is quite unusual with him, in connexion with this subject, replied to Mr. Burdett-Coutts and indignantly repudiated the correctness of such statements and the inferences which might naturally be drawn from them. For our part we can only regret the manifestation of any irritation or contentious spirit in the matter. We are quite content to leave the inquiry in the hands of the Commissioners in the full assurance that if Lord Justice Romer requires any further powers to strengthen his hands in the investigation over which he presides or considers that anything further is required to protect and safeguard the witnesses he will lose no time in representing what is either requisite or expedient. What everybody desires is that the inquiry should be thorough—that the whole truth should be elicited and boldly stated without favour or affection to anyone. The precautions which have been taken seem to us sufficient to impart assurance to the most timid and we cannot believe that under such circumstances any witness will shirk a duty which he owes alike to his conscience and his comrades, any more than we can believe that the members of the Commission will fail to conduct the investigation throughout with absolute impartiality. If Mr. Burdett-Coutts really desires that the whole truth should be elicited he cannot perform a greater service, we think, than by writing to his correspondents in the spirit we have indicated. Mr. Balfour towards the end of the debate made the important statement that the Government had decided on appointing the Commission before Mr. Burdett-Coutts had brought forward his charges. At the conclusion of the campaign—as everybody foresees and the Government is pledged to do—an exhaustive inquiry into the whole conduct of the war in South Africa must inevitably take

place. The Commission now sitting is only part, and a very limited part, of a big subject.

## THE OPEN-AIR TREATMENT OF PHTHISIS FOR THE POOR.

A MOVEMENT is on foot for providing for the poor of the metropolis a hospital for the reception of phthisical patients in which to carry on the open-air treatment. The movement originated with the board of management of the Poplar and Stepney Sick Asylum District. The managers doubtless thought that what was so essential in the case of the rich was still more so in the case of the poor whose power of resistance and recuperation is apt to become fatally impaired at an early period of tuberculous disease. It was found on inquiry that in this particular district alone there had been 65 cases of phthisis which might have been saved by this treatment. Accordingly the managers called together the medical officers and clerks of the unions comprised in the district. After this they sent a deputation to the Local Government Board on the subject. The Board expressed full sympathy with the views of the managers. The Board at the same time have suggested that the guardians of districts should not act seperately, but that such a provision should be made for the metropolis as a whole and that the management of it should be under the control of a metropolitan authority. They further suggested that the managers should invite a conference of the representatives of each Poor-law authority in the metropolis on the subject and have further communication thereafter with the Local Government Board. We highly approve the object and learn with gratification that the board of management of the Poplar and Stepney District have sent to each board of guardians in the metropolitan district a circular inviting a conference. It is desirable that every board should send a representative in sympathy with the object and with power to support the furtherance of it. We are not quite so sure that one huge institution for the whole metropolis is desirable or that this should be labeled a hospital. The congregation of too many such cases is depressing, and the name of sanatorium or convalescent home is to be encouraged rather than that of hospital. These are details. But as to the main object there can be no difference of opinion, and without advocating extravagance the institute should be pleasantly situated and generously administered with a view to the comfort and cheer of the patients.

THE Colonial Office has received a telegram to the effect that during the month ended August 2nd there were 10 cases of plague in Mauritius all of which proved fatal.

# NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Famine: latest Mortality Returns.—The Plague.—Breeding-grounds of Anopheles in Calcutta City.—Sickness and Mortality in India.*

THERE are still about five millions of people under relief and the mortality in the famine districts is very high. Cholera is the chief cause of death. At Ajmere-Merwara during June the death-rate was 180 per 1000 and in Bewar 144 per 1000 per annum. The worst districts were those of the Panch Mahals and Khandesh, inhabited by the Bhils and other forest and low caste tribes, where a death-rate of 256 per 1000 per annum was recorded. In Dhandesh cholera alone accounted for 63 per 1000 out of a rate of 150. Other districts in the Bombay Presidency were also severely affected. No returns are available for the native States but the terrible mortality amongst those who are crowding over the border into British districts tells its own tale. With all this terrible distress the prospects of the monsoon are very disheartening. Almost the whole of the famine tracts and North-Western India are still rainless.

The plague continues everywhere to decrease. Last week the number of fatal cases in the whole of India was only 227, Calcutta returning 107, Bombay City 62, Bengal Presidency 28, and Bombay Presidency 11. Only one case was reported at Aden.

The report of the chairman of the Calcutta Corporation has just been published. In it he directs attention to the plague measures during the past year and states that entire reliance was placed upon disinfection. He says that the change of policy has been justified by the result. "Not only were the people generally more pacific but information was obtained much more freely of plague cases." The difference between the normal and actual mortality is accounted for by the number of plague and suspicious cases registered. In addition to disinfection of the room where the plague patient was found attempts have been made to disinfect adjoining rooms and with some success. As I have before reported the system adopted seems to obtain information of nearly all the cases of plague which have occurred, notwithstanding that considerably less than half of the cases are seen by responsible authorities during life. The number of deaths from small-pox and cholera were both less than the average.

Experiments have been made by the health officer and his assistants in Calcutta during the past four months on the breeding-grounds of anopheles. The larvæ have been found in a large number of places, especially in small tanks containing rather foul water and low forms of vegetation. They were not generally found in the filthiest tanks containing sewage or in drains. The most favourite breeding-ground seemed to be excavations in the ground containing water. The water on paddy fields did not contain them, nor were they found in wells. There was great difficulty in exterminating them from tanks containing much vegetation, but other pools were easily covered with kerosine.

The annual report of the Sanitary Commissioner with the Government of India has been recently issued and like the immediately preceding volumes is much more than a mere compilation of statistics and local reports. Many parts of it prove very interesting reading. It deals as usual with the health of the British and native armies, with the vital statistics of the general population, with vaccination, and with various sanitary works. The mortality in the British army in 1898 was 20·05 per 1000, as compared with 22·93 for the previous year and as compared with 13·33 for the native army. Of this amount no less than 10·17 was due to enteric fever, which thus constitutes 51 per cent. of the total deaths and is unfortunately still on the increase. Hepatic abscess caused 8 per cent., heat-stroke 6 per cent., and dysentery 4 per cent. Amongst many civilian officers there is a tendency to put down to heat-stroke cases which cannot be easily differentiated from the "anomalous" fevers and the same tendency seems to exist on the military side. The heading of "heat-stroke" doubtless includes many cases of fever which have little or nothing to do with the heat at all. The sickness in the British army is chiefly caused by ague and venereal diseases, the former causing 27 per cent. of the total sickness, the latter 25 per cent. It is interesting to note that in the native army ague caused no less than 41 per cent. of the admissions. Compared with former years cholera has markedly declined. There were no less than 689 deaths from enteric fever, and the average number of men constantly sick from this one disease was 321, while other fevers were very small in amount. It is said that the British army is at present a youthful army, with 90 per cent. of the men under 30 years of age, whereas the corresponding percentage in 1871–79 was only 67. The figures for age and length of residence repeat former reports in the dangers to young soldiers and new-comers. It is satisfactory to find that the admission rate for venereal diseases has much improved, but this is explained partly by the widespread adoption of treating the affected men as out-patients. The death-rate among officers in the British army was 16·26 per 1000 and among those in the Indian army it was 10·18, both rates being much lower than in the preceding year. In the native army the chief causes of death were pneumonia and remittent fever, while the chief cause of admissions to hospital was ague. What "remittent fever" means is not very

clear; the title seems to cover a multitude of difficult diagnoses. Native troops suffer but slightly from enteric fever, and the death-rate from this cause is put down at only 0·13 per 1000, and forms only 1·2 per cent. of deaths. as compared with 50·7 per cent. amongst British troops. Natives are more liable to ague and so-called remittent fever, and apparently much less often attacked with "simple continued fever." Taking these statistics as a whole, it may be concluded that were it not for the prevalence of enteric fever among the British the actual liability to "fevers" would be greater amongst the native troops. With regard to venereal disease, there were only 40 admissions per 1000 men among native troops, against 363 for every 1000 among British troops. The Gurkhas, as usual, suffered proportionally more than other native troops.

July 5th.

## PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending June 23rd are as follows: Remaining at the beginning of the week, 76; admitted, six; discharged 14; died, none; remaining at the end of the week, 68. The totals up to the end of the week are as follows: Cases, 284; deaths, 98; discharges, 118; "contacts" isolated, 1586; "contacts" remaining, 91; cases among "contacts," seven. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

June 26th.

The returns of plague in Sydney for the week ending June 30th are as follows: Remaining at the beginning of the week, 68; admitted, 12; discharged, 14; died, three; remaining at the end of the week, 63. The totals up to the end of the week are as follows: Cases, 296; discharged, 132; died, 101; "contacts" isolated, 1686; "contacts" remaining, 111; cases among "contacts," seven. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

The larger number of cases admitted during the week came from localities still more widely scattered than during recent previous weeks; and, as time goes on, it becomes more and more difficult to trace them to dwellings within areas known, or on good grounds presumed, to be infected—that is, by harbour-infected rats. On the other hand, no probable source of infection for them can be fixed upon; these cases are as little connected with each other as (with few exceptions) have been all those which preceded them. Personal communication between infected and clean families clearly has been no factor in the rise and maintenance of this epidemic at Sydney.

Nevertheless, rats are not the sole possible source of the disease; here as elsewhere plague appears to have been contracted under circumstances which excluded diseased rats, though only in a single instance. The quarantine ground may be described as having been divided into three parts: one contains the hospital, one the convalescent quarters, and the third the "contact" camp. The two former are fenced and "contacts" and staff are alike prevented from entering; however, while the hospital fence secures a true isolation, the convalescent fence is only designed to prevent mingling of "contacts" and convalescents. But there is an exception: a scavenger enters the convalescent enclosure during the night only—at times, that is to say, when the convalescents are in their beds. It should be further noted that convalescents are treated as such only when they would be fit for release but that their buboes continue to discharge. This scavenger fell ill of plague after having performed similar duties for about six months. He was a young man in perfectly good health and was the only member of either staff, permanent or temporary, who had escaped inoculation—probably because he was already at work when the plague began, having been originally engaged in connexion with small-pox. On his right hand he had six unhealed, but not quite recent, grazes, of which one was slightly inflamed, and on the fore finger of the same hand he had several cracks or chaps on its external surface which ran horizontally to its anterior surface. His buboes were axillary and cervical on the right side. Bacteriological examination of liquid got from some of the scabs revealed no bacilli, nor were any present in serum drawn from a bubo; but this was taken two days after Yersin serum had been administered and after his temperature had fallen. His attack was slight. Notwithstanding the negative result of the bacteriological examination there was no room for doubt that his disease was plague in the opinion of those best able to judge. After a quite exhaustive inquiry into the conditions under which this man lived and worked at the quarantine ground (which he had not left during the long term mentioned) it seemed most likely that he had become inoculated in the right hand from dressings discarded by the convalescents; yet none of them reached the convalescent wards until long after the time when, according to the best information, bacilli have disappeared from the pus discharged from open buboes.

One other observation noted during the past four weeks is interesting. It has already been remarked that neither minor nor ambulant cases accompanied the beginning of this epidemic nor occurred during the greater part of its course. The first case recorded was the first case which occurred, and it was mild. The next, which happened just a month later, was fatal and it was immediately followed by many others among which the death-rate was high. After that the epidemic continued for many weeks with a steady virulence or intensity which yielded on an average a fatality of about 33 per cent. among whites. Lastly, the term now set in commenced; two or three cases were discovered almost by accident and were of the class known as ambulant. But besides this the virulence of the infection manifestly declined so that nearly all the new cases were of little apparent gravity. Recalling for a moment the fact so often pointed out already—namely, that the epidemic has certainly not been maintained by communication of the disease from person to person (whatever the few exceptions may have been)—it appears that both the primary virulence of the poison and its subsequent enfeeblement must have been independent of the agency or intervention of the human body. That the first case of all was slight may be nothing to the purpose; yet there is no evident reason why it should have been so were the virus derived from the same source as that with which the second, quickly fatal, case was infected. However, it was an example of inoculation by the flea, and it had shown the bleb which is said to be wanting when the implanted virus is very active. But, as regards manifestation in man, it is quite plain that there was no gradual exaltation of virulence of the infection by repeated passages through the human body (the possibility of this being assumed), nor can it be argued plausibly from the facts that the decline of virulence, now become apparent, has been the consequence of similar passages. The fact begins to appear that the whole process went on quite independent of man, who merely suffered incidentally and who was not of importance to the maintenance and diffusion of the disease. This statement, in my opinion, might have been expressed in more general terms. At all events, for the future the possibility of infection by rats and the subordinate possibility of infection by fleas must be excluded before other modes of infection need be seriously discussed.

July 3rd.

TOTNES HOSPITAL.—The annual meeting of this institution was held on July 30th. The report showed that 45 in-patients had been admitted during the year and that there was a favourable balance of £56 remaining. The committee stated that satisfactory progress has been made with the building of the new hospital. The Duke of Somerset was elected patron and Mr. A. M. Singer was elected president.

VACCINATION FEES.—The Vaccination Committee of the Cardiff Board of Guardians at their meeting on August 3rd decided to recommend the guardians to approach the Local Government Board with a view to the reduction of the minimum fees of the public vaccinators. It was stated that during the first year which has elapsed since the passing of the new Act 3743 vaccinations had been performed, the fees of the public vaccinators amounting to £1209. The year previous to the passing of the Act 5770 vaccinations had been performed, for which the public vaccinators had received £392 in fees.—At the meeting of the St. Germans Board of Guardians, held on August 2nd, it was stated that the cost of vaccination for the years ended March, 1898, 1899, and 1900, amounted to £23, £30, and £133 respectively.

# THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE,

HELD AT PARIS, AUGUST 2ND—9TH, 1900.

THE Thirteenth International Congress of Medicine was opened in Paris on Thursday, August 2nd, under the patronage of the French Republic. The arrangements of the Congress have been made by the Government Department of Congress and the President of the Congress is M. Lannelongue. M. Odilon Marc Lannelongue is Professor of Surgical Pathology in the Faculty of Medicine of Paris and Surgeon to the Hôpital des Enfants Malades. He was enrolled an Honorary Fellow of the Royal College of Surgeons of England at the recent centenary of the College.

The following are the Executive Committee:—President: M. Lannelongue. Secretary-General: M. Chauffard. Treasurer: M. Duflocq. Members: M. Bouchard, M. Bouilly, M. Brouardel, M. Dieu, M. Gariel, M. Le Dentu, M. Malassez, M. Nocard, M. Raymond, M. Rendu, and M. Roux. Secretaries: M. de Massary and M. Léon Weber.

The first outward and visible sign of the thousands of medical men attending the Thirteenth International Congress of Medicine was seen on the morning of the last day of July when the Rue de l'École de Médecine was blocked by cabs containing medical men from all parts of the world anxious to go through the formalities which were necessary for official acceptance as members. Though nothing authoritative was given out and the tickets for the different fêtes and entertainments were duly distributed there was a very general opinion quite early that the sad end of King Humbert of Italy would mean the abandonment of the official receptions. This sombre beginning of the Congress was not relieved by the monotonous proceedings at the first general meeting held in the Salle des Fêtes. Most of those who attended this dreary function found their way into the grounds of the Exhibition and in the brilliant sunshine of that Thursday afternoon the Exhibition certainly was a revelation of what can be done by the French in building substantial stone edifices which at once attract attention and demand admiration by reason of their exceeding elegance and beauty. Properly to appreciate the brilliant architectural *tour de force* achieved the spectator should proceed in one of the swift passenger steamers plying on the Seine from the Pont d'Iéna to the Pont Alexandre III. Both banks of the river between these points are lined by veritable palaces of glistening white stone, affording a spectacle well exemplifying the French capacity to rise above criticism in matters of taste. But this is not the place to attempt a description of the Exhibition.

Some little disappointment has been expressed at the small attendance from Great Britain. This is attributable to many causes, but most certainly the general idea that there would not be sufficient hotel accommodation was fallacious, for suitable lodging and good food at reasonable prices, considering the circumstances, are to be had without undue difficulty. The suspicion that the reception of the English would not be of the warmest has been signally disproved by the hearty welcome accorded to them. Certainly the impression prevailing at the Hôtel Trocadéro, where many of the British section, including Sir William Mac Cormac, Sir T. Lauder Brunton, Sir J. Burdon Sanderson, Sir Felix Semon, and Sir Dyce Duckworth, are staying, is that their reception has been most cordial and sincere. On arriving in Paris the first place to go to was the École de Médecine where, in the roomy corridors round a refreshingly cool-looking fountain set in a shrubbery under shady trees, the members of the Congress found officials for the different nationalities waiting to distribute the insignia denoting membership and to impart information to strangers from every country. It was here that the paucity in numbers of the British section was most forcibly demonstrated, for the two or three individuals gathered at the part devoted to Great Britain contrasted strongly with the crowds surging round the Russian and German sections. After receiving the official card of entry to the Exhibition most members repaired across the road to the Faculté de Médecine, where the ladies' committee inscribed the names and addresses of members' wives and daughters and entertained the lady visitors in a sumptuously furnished room forming a pleasant haven of rest.

## THE POSTPONEMENT OF FESTIVITIES.

A little while ago fears were entertained that one or more of the four medical congresses would suffer in consequence of international mourning. It was then thought that in the event of official confirmation being received of the massacre of the ambassadors and other Europeans at Peking many of the official entertainments would be postponed. There was no established etiquette compelling such a course because, fortunately, the wholesale massacre of ambassadors was a disaster so unprecedented that the framers of even the most elaborate protocols had never foreseen such an occurrence; still, it was hardly likely that illuminations, music, and dancing would be organised by a Government on the morrow of such a disaster, and therefore it was widely rumoured and believed that many of the proposed festivities would not take place. This anticipation has been realised, and this at the very time when it was thought most likely to occur, but its cause was totally unexpected. It is not for the ambassadors and Europeans at Peking that all the Courts are in mourning—for however precarious their situation it would seem that for them there is still hope—but for the King of Italy. A fortnight ago the general secretary of the International Congress of Hygiene, Dr. A. J. Martin, was discussing this matter and he remarked that he hoped that the mourning for the victims of the Boxers would be over by August 10th when that Congress begins. This hope will presumedly be realised. What was expected has happened and yet the cause is utterly different and altogether unexpected. So many of the projected entertainments have been postponed which, at least for those who are remaining for but a short time in Paris, is equivalent to being totally abandoned. On Tuesday, July 31st, the members of the International Congress of Deontology and of the Medical Press Congress were to have been entertained at a grand fête at the Hôtel de Ville. This was postponed at the last hour. On August 5th the members of these Congresses, together with those of the Thirteenth Medical Congress, were to have been received by the President of the Republic, M. Loubet, at a garden party at the Elysée. This has likewise been abandoned, and other official receptions will probably share the same fate. No doubt the congresses will achieve their respective missions, but the more cheerful side of these gatherings has been sadly clouded over.

## THE BANQUET TO LORD LISTER.

It is generally agreed, however, that public sorrow and mourning must not interfere with the private hospitality shown to the foreign visitors and guests. Therefore the private banquet organised in honour of Lord Lister by Professor Charles Richet and the Scientia society was not put off. At the Restaurant of the Congresses, opposite the Congress Hall in the Exhibition grounds, the leading professors of the Faculty of Medicine and some foreign members of the Congress of the Medical Press and the Deontological Congress met on Wednesday, August 1st, to welcome Lord Lister. It was a very quiet gathering of thoughtful earnest, and learned men who had all made their mark in the world of science and who all profoundly admired Lord Lister's career and work. At dessert Professor CHARLES RICHET was the first to rise and tender his thanks to Lord Lister for having come "to receive the homage of our

admiration." Throughout the world there was no surgeon who was not deeply indebted to Lord Lister and there was no physician who did not feel equally indebted to Pasteur. These two names would illuminate their century; their names would live throughout posterity. When a man by his genius had saved thousands and thousands from untold suffering he deserved more than their admiration—he was entitled to their love and gratitude. If all who had benefited from Lister's work were there, even the great Exhibition itself would not be large enough to hold the assembly.

Dr. BOUCHARD spoke next and recalled how some 17 years ago, when Lord Lister appeared before the Congress then meeting at Amsterdam, an immense acclamation arose, especially from the Dutch. After Lord Lister himself those who were most astonished by this ovation were the English and the French members present. Lord Lister was not then a prophet in his own country, and yet had ever a discovery been so quickly acknowledged? A hundred years after Harvey scientists were still discussing whether the theory of the circulation of the blood was true. This century commenced in the noise of battle and civil discord and yet in the midst of this trouble a man came and endowed the world with the benefits of vaccination. The century ended with the curse of war and the shame of abominable assassinations and then, said Dr. Bouchard, "you come and show us how to heal wounds. We wish in the name of the suffering peoples of the whole world to honour you as our great benefactor."—Professor GUYON spoke in the name of the Faculty of Medicine and Dr. LUCAS CHAMPIONNIÈRE related how 32 years ago he had heard Lord Lister explain his theories. He was then the object of hostile criticism and yet how rich with new developments and possibilities had he rendered the intervening time. "You acquired the conviction that there was no spontaneous generation; why, then, should it exist in surgery? That was your new faith, and when I repeated this in France I was called the apostle of a new religion; and I have merited this title by reason of my faithfulness to your teaching. ..... All new discoveries of the 30 years are your tributaries; none of them would have been possible but for you. We can remember the miserable condition of surgery and how great was the mortality. Nélaton said that a statue in gold should be raised to the person who was able to prevent what we now know as 'sepsis.' You have deserved that statue and our only regret is that at present we cannot offer it to you."—Dr. PINARD spoke for obstetric surgery, which he thought was more particularly indebted to the Listerian methods. The terrible mortality at the maternity hospitals was now a thing of the past. He concluded by exclaiming: "Lord Lister, when we are asked why you are illustrious we reply because you have driven back Death itself; because in all you have done you have only caused tears of joy and gratitude."

After a few words of admiration on behalf of the Paris medical students by the President of the Students' Club Lord LISTER rose to reply. He spoke slowly, gently, and in French. When he received the invitation to that banquet, he said, he was overwhelmed by the honour; but he accepted it because he interpreted the invitation as an expression of the respect of French scientists for the noble science of surgery and for the Royal Society of which he was President. He also thought that such a fête given by such eminent Frenchmen to an English scientist was a striking illustration of the happy fact that though there were animosities—or, rather, he would prefer to say misunderstandings—science knew nothing of them. Scientists had learned to respect each other—better still, to love each other—whatever might be their nationality. He had often stated, and he was pleased to repeat it, how much he was indebted to Pasteur. He had ever loved physiology and surgery, but he had lamented the disastrous results that followed even the best and most skilful operations. He saw that the chief evil was due to changes that occurred after the operation and to a cause arising not from within but from without the patient's body. He did what he could to guard against this, but all efforts were useless till Pasteur threw a powerful light on the subject. Pasteur had suggested a possible course which he, the speaker, had done his best to follow. That was all. If the results had been so beneficent as generously described by the various speakers that night it had been in a great measure due to accident. Lord Lister then renewed his expression of gratitude for the reception he had enjoyed and said that the memory of such a demonstration would never be effaced from his mind.

It would be difficult, nay, impossible, to fully describe the effect produced by Lord Lister's speech. The simple, brief sentence, "That was all," was more particularly commented upon. The extraordinary modesty and simplicity of bearing of the great British man of science evoked endless expressions of surprise. How was it possible to receive so many honours and yet not to be in the least degree spoilt by them? That seemed to be considered as wonderful and as exceptional as the services and the discoveries which all present sought to honour in the person of Lord Lister.

Lord Lister was then conducted to the Medical Club in the Avenue de l'Opéra, where he received a great ovation. The president of the club, Dr. Pozzi, wished Lord Lister in eloquent terms the heartiest welcome and suggested that a marble tablet should be put up in the club in commemoration of Lord Lister's visit. The greatest enthusiasm prevailed throughout.

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## THE OPENING CEREMONY.

(FROM OUR SPECIAL COMMISSIONER.)

By half-past one in the afternoon of Thursday, August 2nd, a long line of cabs was hurrying over the Pont de la Concorde, manœuvring round the Place des Invalides and seeking short cuts to the rear of the Gallery of Machines where is situated the nearest entrance to the Hall of Festivals. The man in the street was somewhat amazed by the presence of so many persons in full dress at this early hour, together with the display of many orders and decorations and brilliant uniforms, and all apparently going in the same direction. The weather, rendered cool by recent rains, was delightful and the members of the Congress for the most part rode in open carriages, to the great satisfaction of the Parisian crowds who were thus better able to contemplate the distinguished visitors and guests of their great town. The garde municipal à cheval guarded the approaches of the great hall, and, within, the republican guards, with their best plumes and newest uniforms, kept the passage clear for the members of the Congress. Though on that very day the computation had been made that the Congress numbered 5739 members—and there were wives, relations, friends, and journalists present not included in this number—still the great Hall of Festivals was not half full. It may be remembered that last year I described a conversation I had with Dr. Chauffard. The secretary-general of the Congress then lamented that there was no suitable hall in Paris for the opening ceremony. There had been some 5000 members when the Congress met at Moscow and there might be twice as many when it met in Paris. We did not then anticipate that a war would considerably reduce the British contingent or make sufficient allowance for the competition of other congresses and the fear of the cost of living in Paris during the Congress—a fear, by the way, which events have not justified, at least for those who knew their way about. Dr. Chauffard and myself did not then realise that a great Hall of Festivals would be built. I suggested the Trocadéro, but Dr. Chauffard is an artist and he could not bear the idea of bringing together delegates from all the world in a hall which could only boast of its size and which altogether failed to illustrate the artistic taste and capacities of the French people. Dr. Chauffard must now be well satisfied. No one can fail to have been impressed by the artistic beauty and grandeur of the Hall of Festivals. The domed stained-glass roof shed a rich yellow light on the great circle below which was about half covered with velvet benches. Between the four entrances on the four sides of the circle were vast tribunes or rising galleries where some hundreds of people could be seated. One of these served as the platform and was luxuriously furnished with gilt and red silk chairs, on another of these tribunes there was a military band, and the remaining two were occupied mainly by ladies. The benches in the body of the hall were divided by broad avenues, and each division was allotted to members under various classifications. On the platform academic and military uniforms helped to enliven the scene. The President of the Congress, Dr. Lannelongue, was resplendent in the bright green embroidery of the uniform of the members of the Institute, and Professor Marey was also in the same cheerful dress. Those who belonged to the Academy of Medicine but not to the Institute had their coats embroidered with more sober colours, violet and gold. Among the distinguished crowd occupying the platform I noticed M. Faillières, President of the Senate,

talking to his fellow Senator, the celebrated surgeon Dr. Labbé. Professor Bouchard, who presided over the French Section at the Berlin Medical Congress, was not far from Dr. Dujardin-Beaumetz, the chief of the sanitary services of the army, who ranks as a general of division, and Dr. Cuneo, chief of the sanitary services of the navy. At one time there must have been not far from 150 persons on this vast tribune.

At a quarter past two the republican guards advanced into the body of the hall and cleared the central passage and made an open space at the foot of the tribune. Five minutes later the band played the "Marseillaise." Everyone rose and strained to get a glimpse of the President of the Republic; but in spite of the national hymn which generally heralds his presence the President was not there. While the audience were still looking and wondering Dr. Lannel ongue had taken the chair and half sentences or stray words were heard—"an appalling crime"—"sympathy"—"prevents the President of the Republic attending any public"—"sympathy of the whole assembly"—"horror at such an attempt"; and though but few heard a complete sentence everyone understood perfectly what was meant. Then the assembly sat down; and, after having explained why M. Loubet was absent, Professor LANNELONGUE proceeded to read the opening discourse; but soon there arose a strange sort of sound, like the beating of pebbles by the waves on the seashore. It was the effect of whispered conversation complicated by the incalculable echoes of the great hall. Professor Lannelongue read in a loud and distinct voice and slowly, but it was like speaking to the ocean. He said that the object unceasingly pursued was the improvement of mankind, and for this absolute freedom of research was necessary. Such researches would be materially facilitated if a nomenclature more in harmony with present knowledge could be universally accepted. After pointing out that the idea of an International Medical Congress was first brought forward at Bordeaux in 1865 Professor Lannelongue paid a handsome tribute to the help and support given by medical men of all nations and cordially welcomed all the members of the Congress.

M. MONIS, the Minister of Justice, followed and in the name of the French Republic greeted the leaders of civilisation. The French Government was anxious to show its respect for a profession representing devotion to humanity and for men who had come from all parts of the world to promote the cause of science based on truth.

The General Secretary, Dr. CHAUFFARD, followed, and then came the long procession of foreign representatives, headed by Dr. VON BERGMANN of Berlin, who spoke in a loud voice and was greeted with great applause. Though portly in figure his coat was almost entirely concealed by the numerous orders, stars, and decorations that have been conferred on the renowned German surgeon. Then appeared four other members; their names were not announced, though one of them was stated to be Dr. CASTILLANI of the Argentine Republic. They spoke in dumb show and fortunately very briefly. Dr. HINGSTON of Canada, who came next, was heard a little better and met with a hearty ovation. I caught some words about science that recognised no frontiers, and about duty. When he sat down, after uttering but a few words, a delegate from Chili spoke, and then Dr. CARTEJARENA on behalf of Spain. America, Greece, Japan, and other nations had their speakers, but the only real orator was the representative of Mexico. He knew how to step forward across the broad platform and was the only speaker who had the courage to go right forward to the place specially devised for the speakers to stand. He knew also how to manage his voice, and though at that moment no special interest was felt with regard to Mexico everyone was delighted to see a speaker whom they could hear. It is true that he indulged freely in platitudes, but then they were so well delivered that it was a great relief after the weariness of the previous inaudible speakers. He extolled Pasteur and the happy country that had given birth to a man who had won the title of a citizen of the world. When a brave man died all died with him; but when a man of genius died he did not disappear. Such men only died like the sun to reappear very soon, for their works continued to illumine the world. After more speeches suddenly the band began to play a lively tune, and it was inferred that by this time every nation had had its say.

But the ceremony was not over. The best was to come. Professor VIRCHOW of Berlin had to deliver an address on Traumatism and Infection, alluding to the influence of the French schools on science. He set to work in true German style thoroughly and completely to develop his thesis. He spoke in German, and very few persons present could have understood him even if they had been able to hear him. This finally broke the patience of the audience, which soon melted away, and three parts of the persons present had disappeared by the time the learned professor had finished. The gist of his remarks was as follows. Traumatisms might be defined as an alteration of any portion of the *living* body brought about by external violence. Traumatisms might be divided into visible, such as wounds, and hidden, such as contusions. A wound being necessarily accompanied by a solution of continuity it was very prone to collect foreign matter, either in bulk or finely divided, as in the case of dust. This was the way in which harmful matters brought about infection. Contusions, on the other hand, were capable of infection only by internal substances. There were cases, however, where a contusion without any superficial lesion was produced by external violence and in which, despite the integrity of the surface, infection supervened. Such, for instance, were the dangerous inflammations of the marrow of the long bones, although in such cases the skin, the subcutaneous tissue, the muscles, and the periosteum showed no alteration. Innumerable microbes were found in the affected parts of the marrow. Whence did they come? That was a question which could very rarely be settled by observation but which opened the door to hypothesis. General opinion at the present day favoured the theory of bacterial origin, according to which an infection already existing in the blood must be presupposed, produced at the seat of another wound, and carried to the focus of the secondary manifestation. Some surgeons considered that there must be some very minute erosion of the surface at the seat of contusion. Both these explanations were theoretical and had no definite proof. It was extremely difficult to prove that the traumatism and the infection were synchronous. Observations were on record where the infection preceded the traumatism and others in which it developed in a part wounded a long time previously. In cases of this kind a decision could only be arrived at by a careful consideration of the history of the case. If this was not to be obtained the anatomical points of the affection must be looked into. The great *savant* was proceeding to illustrate this point by special examples when a large part of the audience dispersed. There is not a centre of scientific thought in the world where Professor Virchow's inimitable achievements are in higher repute than in Paris. The apparent discourtesy was due to the fact that he was almost inaudible and speaking in a language with which many were not familiar.

It was then announced that Professor PAVLOV from Russia, who was to have delivered a discourse, had been detained through illness. The faithful few who had remained in the great hall then quickly dispersed. It must be confessed that this opening ceremony was dull.

In the evening Dr. Lannelongue received more than a thousand members of the Congress. It was a brilliant entertainment. There was some good music and then the children's ballet corps of the Grand Opéra danced and appeared bearing flags of the different nationalities. The band accompanied this display with the national hymns of Russia, England, Germany, Austria, and France.

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### THE GENERAL ASSEMBLY AT THE SORBONNE.

On Monday afternoon a general assembly of the whole Congress was held in the new hall of the Sorbonne. This magnificent building can seat 3000 persons and there were probably close upon 2000 present. The President of the Congress, Dr. LANNELONGUE, opened the proceedings at 12.15 P.M., and the General Secretary, Dr. CHAUFFARD, read out a long list of honorary presidents of sections whose nominations the assembly at once and readily notified. Professor LIKHATCHEFF then read on behalf of Professor Pavlov, who was absent through illness, the paper which he should have communicated at the opening ceremony. It dealt with Experimental Therapy as a new and fruitful method of physiological research. This lengthy and technical paper described many experiments made with dogs and concluded by a special homage to Claude Bernard.

Dr. LANNELONGUE then explained that Professor Baccelli was to have read the next paper, but in consequence of the national mourning refrained from doing so. He expressed,

on behalf of the Congress, sympathy for their Italian colleagues and called on Professor Burdon Sanderson. Speaking in French Sir J. BURDON SANDERSON explained that 47 years ago he had come to Paris to terminate his medical education and felt especially honoured, at the close of his career, at being thus able to speak in France to such a distinguished audience. These introductory remarks were delivered with some timidity and hesitation and only a few persons seized their meaning and faintly applauded; but when he entered into the subject matter of his paper—Some Modern Pathological Problems—his voice rose, his pronunciation improved, and the force of his diction as well as the subject matter of his remarks elicited several outbursts of applause. Professor JACOBI from the United States followed and gave a very interesting account of the growth of the medical profession in America, of its medical education from its crudest beginning to the present day, and of the American medical press. This was all quite new to the greater part of the audience and was consequently welcome and entertaining. These three papers were lengthy and sufficed to fill up the afternoon. Indeed, a good many persons left before it was over, though others came in to take their place. I do not know whether many persons noticed the admirable ventilation of the hall which in this respect is one of the model halls in Europe. The fresh pure air was filtering in all the time from every seat and was so carefully propelled forward that its passage could only be just faintly perceived by those who specially sought to note its passing. The readers of THE LANCET may remember the full description and illustrations of the system employed which were published in your columns some 10 years ago when the new hall had only been in existence a few months.

### THE FÊTE AT THE LUXEMBOURG PALACE

As already announced all the official entertainments have been postponed, and it was at first generally supposed that the fête to be given at the Palace of the Luxembourg announced for August 6th would likewise be abandoned. This ancient palace being now the meeting-place of the Senate it was naturally supposed that the Upper House was desirous of receiving the members of the Congress, and this could not have been otherwise than an official reception. It appears, however, that these conjectures were mistaken. It was the members of the Bureau, or managing committee, and the committees of the sections who had organised the fête, and they had simply borrowed the *locale* of the Senate for that purpose. Therefore, though the Congress is indebted to the Senate for a certain measure of hospitality—namely, the use of the Senate House—nevertheless it was not the Senate that was giving the *fête*, and therefore it fell under the denomination of a private and not an official entertainment. Consequently it was not postponed, and as it was the only large festivity occurring during the week everyone made a point of going there, and the number of members has considerably increased since the opening day. On August 5th it amounted to 6170, and including the wives and families of the members, together with various officials and notable personages who are not members of the Congress, the number of those who were invited must have amounted to some 10,000. The programme was most attractive. In the gardens there was to be a military band, in the ballroom there was to be dancing to an orchestra of 45 musicians, and in the Salle des Fêtes another orchestra of 45 musicians were to accompany Madame Litvinne and M. Renaud from the Grand Opéra who, with others, sang selections. This was to be followed by an operetta, some dancing, and recitations by M. Mounet-Sully, of the Comédie Française, and Madame Sarah Bernhardt. Obviously there were here all the elements necessary for a most refined and enjoyable *soirée*. Unfortunately the results were entirely marred, firstly, because by far too many invitations were issued; and secondly, because there were no stewards within the building to guide the guests and to prevent crushing.

In the streets, round the Palace, there were a great number of police who with their white staffs regulated the traffic and got the carriages in and out of the great yard with perfect order and promptitude. But after this all semblance of organisation ceased. The cloak-rooms provided were altogether too small and the attendants were overwhelmed. Many guests had to wait half an hour, some a longer time, before they could get numbers for their cloaks, and this in a terrible crush of people. Then when they attempted to enter the Palace they found that there was only one door and that it was only four feet wide. At first, however, this only meant some delay and some squeezing. But the early arrivals soon found that the building was getting intolerably hot and overcrowded. The seats to hear the music were all filled at a very early hour. To stand closely packed in the aisles between the seats or in the passages outside where nothing could be seen or heard became both dull and wearisome, and before 11 in the evening a strong outward current set in. But by that time the banquet given by the surgical section at the Hôtel of the Palais d'Orsay, which is not far off, had terminated, as also a number of private dinners, and a large crowd of late arrivals coming from these minor entertainments now flocked to the Palais du Luxembourg. It was at this point that the want of stewards became manifest. Those who were already tired and wanted to go home knew of no exit save the door by which they had entered; and here and in the approaching passages they met the incoming crowd. Soon a terrific contest occurred between the out-goers and the in-comers which often resulted in a deadlock. Sometimes one side had the advantage, sometimes the other. For my part I was for a good quarter of an hour unable to move either backwards or forwards and had some difficulty in keeping my coat on my back. Several gentlemen had their collars torn off, their neckties disappeared, and fearful havoc was made of the ladies' dresses. I do not, however, believe that anything serious occurred, though some ladies must have suffered from the alarm which they very naturally experienced. There were, it appears, other doors intended to be used solely as exits, but not one person in 20, perhaps not one in 100, knew of their existence. The struggle at this one door probably lasted for a couple of hours; in any case, I was present for more than an hour while it continued. Reaching finally the open I witnessed a most remarkable sight. Here in the great yard, with its old-fashioned huge square paving-stones that in the olden days supplied the principal material for throwing up barricades, were gathered in clusters from 200 to 300 ladies and gentlemen. A few chairs had been discovered and some were quietly sitting down enjoying the cool of the evening. Ladies in low-neck dresses, officers in embroidered uniforms, and all the gentlemen in evening dress, contented themselves with loitering in the yard intended exclusively for carriages, and watching the struggle at the one door and hearing the stories of those who come out of the broiling crush from within. A great many guests, after waiting a considerable time, went home and never succeeded in entering the Palace at all. Among those who were thus patiently and modestly waiting outside in the yard I noticed the Dean of the Faculty and Madame Brouardel. This morning Professor Brouardel told me that he finally discovered a small back entrance by which he managed to gain admittance. In his opinion also the chief blunder was the want of stewards to show people where to go and what to do. In the dancing saloon though the band piped there was no dancing worth mentioning in consequence of the crush. On the other hand, some German members specially distinguished themselves by conducting the most effective raids upon the buffets, carrying away the provisions, which they put upon chairs, and, grouping round these extemporised tables, managed to make hearty meals on sweets and sandwiches. As it is the custom in France to dine at seven or eight o'clock it is not generally thought necessary to provide substantial fare so soon after dinner. Commenting on the evening and its mishaps the *Fronde* of this morning says: "Our regret for the manner in which our guests were treated is somewhat lessened by the utter want of consideration some of them displayed towards us. Some foreigners thought fit to come to this entertainment in travelling jackets and we perceived some women wearing boating caps."

## THE SECTIONS.

Early on Friday, August 3rd, the different sections opened their sessions, and although under paragraph marked B of what is termed "Analytical Programme of Business" it was specially pointed out that members had a right to take part in all the sections it is unlikely that many medical men did much more than attend one or two, perhaps only visiting some of the others. The sections, numbering 26, were scattered over a wide area and some trouble was experienced in finding the different buildings where the meetings took place. The École Pratique accommodated three sections in a large amphitheatre. Under the presidency of Professor

Tillaux Dr. Ceccherelli of Parma was addressing a crowded audience. The next section visited was that of Pathological Anatomy, which was reached by climbing several untidy staircases, past rooms apparently containing many dogs to judge from the great noise of barking. Pathological anatomy on the opening morning had not attracted a great number of members, and the section for Histology, which was situated across a court and down a passage, had still fewer votaries, perhaps caused by the heavy rain which was falling, deterring members from going across the open yard. In the Faculté de Médecine were three sections—Legal Medicine, Internal Pathology, and General Pathology—and these were soon reached by crossing the Rue de l'École de Médecine. Legal medicine was drawing a small audience, but internal pathology was very popular and the air of the theatre was correspondingly noticeable. General pathology had a fair number. The next place visited was the Sorbonne, which held six sections. The sections on Obstetrics and Gynæcology were at the end of long passages and were crowded, and after having lost the way several times in more long passages the section for Surgery in Children was chanced upon; this was attended by many, and after another tramp along more corridors the crowded amphitheatre for Neurology was visited. The sections for Pediatrics and Physiology were full, and then after a little difficulty in finding the way out of the enormous building of the Sorbonne the Faculté de Droit was entered after a short walk. Here the laryngologists and otologists had two spacious rooms, and everything seemed to be well arranged and properly organised. Descriptive Anatomy and Comparative Anatomy were installed at the Collège de France. A sharp walk along the narrow Rue St. Jacques brought me near the École de Pharmacie, where I found the International Congress of Chemists holding council together. This building contained the sections for Therapeutics and Psychiatry, which were only fairly full. The Val-de-Grâce Military Hospital was the next place to visit, and there the Military, Naval, and Colonial sections were located. This was evidently an old building, but the organisation for the Congress was perfect. It was possible to walk in and by simply following the clearly printed instructions to arrive at the places of meeting without any loss of time. The bright uniforms of the officers and the pleasant politeness of everyone connected with this hospital rendered the way of the stranger easy and a visit to the wards and laboratories most interesting and agreeable. Few members, however, seemed to be aware of this section and fewer still seemed to find the way there. Bacteriology was located at the Pasteur Institute, but it was only after a long and jolting drive that it was reached. Here the members were inspecting the buildings and again it was remarked that the distance probably deterred visitors from attending. Another long jolt in a Paris cab and the Necker Hospital was reached, where, after passing a few instruments displayed by enterprising firms along a passage, the section for Urinary Surgery was found holding its second session with a full number of members. The section for Dermatology was the scene of an animated discussion, carried on in German and French, but the care that had been taken suitably to organise this section repaid the labour expended in reaching it, though it seemed a very long way out, being situated at the St. Louis Hospital. The photographs and drawings displayed in a large adjoining room well deserved the attention which they attracted. Leaving the somewhat argumentative dermatologists, the next visit was to the Hôtel Dieu, where the ophthalmologists had their section, and its central position and comfortable arrangements no doubt helped to swell the numbers present. In the Assistance Publique, quite close by, the section for Diseases of the Mouth held their discussions. The distances between the sections were found to be a great disadvantage during the Congress, it being in consequence difficult to secure large meetings for certain subjects.

## I.—BIOLOGICAL SCIENCES.

Work under this heading was divided into three sections—viz.:—

*A, Descriptive and Comparative Anatomy; B, Embryology and Teratology; and C, Physiology and Physiological Chemistry.*

Several important contributions were made, among which may be mentioned a paper by M. Armand Viré on the Influence of Environment upon the Sensory Organs of Subterranean Dwellers, and one by Professor F. le Double, Professor of Anatomy in the Medical School at Tours, on the Variations in the Muscular System of Man. He divided the variations generally noticed into three classes—retrogressive, progressive, and monstrous—and laid down some excellent practical rules for rendering the work of future observers in these fields more fruitful. For example, Professor le Double would like to have one or two recognised human malformations selected by all anatomical congresses or anatomy sections of international congresses as matters for particular attention, and in the interval between the meetings the anatomists of the world should make simultaneous investigations in various dissecting-rooms for information in the indicated direction. This suggestion shows that Professor le Double understands how a congress should be used, how it may be made a place for the interchange and general advancement of science. To the section of Histology Dr. Hénocque, of the Laboratory of Physics and Biology of the Collège de France, contributed an interesting paper in which he reviewed the assistance given by spectroscopy and microscopy to general anatomy.

## II.—MEDICINE.

### INTERNAL PATHOLOGY.

*Pathogenesis of Gout.*

Dr. P. LE GENDRE (of the Hôpital Tenon, Paris) read a paper on this subject. After enumerating several theories of gout he said that all of them were open to chemical, physiological, or pathological objections; the most plausible of them could only account for a fit of the gout and could not explain the permanent derangement of the cellular nutrition which was transmissible by heredity and formed the connecting link between successive gouty attacks in the individual and also between gouty manifestations in father and son. Clinical statistics had proved (1) that gout occurred with exceptional frequency in persons whose progenitors or descendants suffered from diseases of the class known as arthritic or from diabetes or obesity, and (2) that gout was often associated in the same individual with one or other of these maladies. The numerical relations established between the diseases of the arthritic group justified the attribution to each of them of the pathogenic course of events demonstrated to be true for one of them by Dr. Bouchard who had shown that diabetes consisted in a diminution of the power of the tissues to effect the combustion of sugar—i.e., to complete the transformations of carbohydrates. If gout was clinically of the same nature as diabetes it was very probable that in the gouty there was an impairment of metabolism as regards nitrogenous matter, an inability of the tissues to effect the complete destruction of albumin. Among the consequences of the incomplete destruction of waste products must be reckoned the loading of the organism (*a*) with certain acids (oxalic, acetic, lactic, &c.) which might diminish the solubility of uric acid, although it might not be necessarily in excess in the blood, and (*b*) with certain organic bodies the toxic action of which might contribute to produce the phenomena of gout. Clinical statistics showed that simple albuminuria and interstitial nephritis were frequent in gouty subjects. Acquired gout was brought on by excess in food which was either nitrogenous or rich in oxalic acid, or by over-free use of certain fermented beverages; it might also be due to want of bodily exercise, to over-fatigue of the nervous system, or to lead poisoning. Gout was hereditary because the defects of the cells of the progenitor were continued to those of the offspring through the ovule or the spermatozoa.

Dr. WILHELM EBSTEIN (Göttingen) read a paper on the same subject. He said that gout was a disease more or less chronic and depended on a hereditary diathesis which was almost always congenital and to which the name of uric acid diathesis had been given. With respect to the essential cause of the uric acid diathesis only hypotheses could be put forward. The close relations which existed between uric acid and the nucleins rendered it probable that in the uric acid diathesis there was an abnormal state of the cellular nuclei or of the protoplasm of the individual in question. The individual predisposition, which could be followed through whole families and successive generations, was a very important feature of the uric acid diathesis. A variety of conditions seemed to contribute to the development of the uric acid diathesis

and to its transformation into actual gout, some of them being as follows: (1) all the circumstances being equal gout manifested itself earlier and with more severity when the uric acid diathesis was well marked than when it was not; (2) personal habits, such as idleness and luxurious living, or the combination of these two in a high degree, or the abuse of alcohol, favoured the development of gout and temporary variations might very often be attributed to those conditions; (3) certain acute and chronic toxic influences in presence of the uric acid diathesis favoured the development of gout, among which some bacterial toxins were of great importance, and the relations of gout to rheumatism, syphilis, lead-poisoning, and influenza must be kept in mind; and (4) neither contagion nor climate had any influence as regards gout. Uric acid seemed to be the poison which produced gout. The question whether other products of the organism, such as the alloxur bases or nuclein bases, also played a part was not yet decided. It was probable that it was only the uric acid formed at the expense of the nuclein substances of the human body, and not that formed at the expense of the nucleins of the food, which had an influence on the pathogenesis of gout. It was not yet proved that in gout uric acid was formed in excess; Dr. Ebstein considered that an increased formation of it was not indispensable, but was nevertheless very probable. The history of leukæmia showed that gout was not the result of over-production of uric acid (estimated according to the quantity of uric acid excreted in the urine), for in some cases of leukæmia there was an excretion of uric acid greater than ever occurred in gout. Uric acid was a chemical poison but not a septic one. Its effect was not the same either on animals of different species or on animals of the same species but of different ages. Inflammatory and necrotic changes of the tissues in question were the necessary consequence of the presence of uric acid which ultimately caused total necrosis. When the tissues were quite dead, but not before, the acid deposited itself there under the form of crystalline acid urate of sodium, called mono-natrium urate by Tollens and sodium biurate by Roberts. Tollens thought that uric acid circulated in the blood and in the alkaline fluids of the human body in this same alkaline combination, and not, as Roberts supposed, in the form of sodium quadriurate, a salt which Tollens has more correctly called hemi-sodium-urate. It might be admitted without hesitation that the mono-natrium urate of Tollens (sodium biurate of Roberts) could deposit itself in the crystalline form in tissues the vitality of which had been destroyed either by uric acid or by some other poison. In order to understand the pathogenesis of the different symptoms of gout it was necessary to presume the existence of primary articular gout and primary renal gout. The former was the commonest variety of gout and did not prevent the patients from attaining an advanced age. Primary articular gout developed itself at first under the influence of retained uric acid, this retention being localised because it affected only a single part or some parts of the human body. In primary renal gout there was from the outset a generalised retention of uric acid which affected all parts of the body and was always caused by primary structural disease of the kidneys.

Sir DYCE DUCKWORTH (London) followed with a paper on the same subject. Sir Dyce Duckworth's conclusions were as follows. 1. Gout as a morbid condition depended on an inherent vice of nutrition which was manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys and probably in the liver. 2. This trophic disorder or inadequacy (*ralentissement de nutrition*) led to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood (gouty urichæmia). 3. Histology threw no light upon the intimate nature of this defect which thus related to cellular potentiality, possibly under neuro-trophic influence, and not, so far as was known, to structural alteration. 4. This textural disability or a tendency to it might be primarily acquired and also transmitted as a fault, thereby inducing from time to time urichæmia with gouty manifestations in the descendants. 5. In most instances under conditions which provoked it, and in some cases independently of these, attacks of gout might grow up and come to a crisis. Such crises were attended by an alteration in the solubility of the uric salt in the blood whereby irritating crystals of biurate of sodium were produced and precipitated in various parts of the body. 6. A paroxysm of gout, the sites of its occurrence, and its metastases were determined by nervous influences, probably dominated from the bulbar centre, and the local attacks alighted either in the joints or in textures which had been weakened or rendered vulnerable by impaired nutrition owing to past injury or over-use. 7. This central neurosis was an essential and transmissible feature in the pathogeny of gout and pertained to the arthritic diathesis generally. 8. The urichæmia of gout was peculiar and unlike that which was induced by other morbid conditions, but the occurrence of urichæmia in the gouty was by itself inadequate to induce attacks of gout. 9. Uratic deposits in any part of the body might be removed in course of time but were apt to be permanent in the least vascular tissues. 10. Uratic deposits might occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysms. 11. The clinical features of gout indicated that both *hæmic* changes (due to inherent morbid tissue metabolism) and a *neuro-trophic disturbance* acted as pathogenic factors, and consequently gout was to be regarded as a neuro-humoral malady.

### *Diagnosis of Renal Insufficiency.*

Dr. CH. ACHARD and Dr. S. LAACHE read papers upon this subject. Dr. Achard dealt chiefly (1) with the results of cryoscopy applied to the urine and blood serum, an index of the permeability of the kidney being thereby obtained, and (2) with the conclusions to be drawn from the elimination of a foreign body (usually methylene blue) in the urine.

Dr. LAACHE said that treatment ought to be prophylactic by preference, but if that was impossible the well-known methods of treatment in kidney disease ought to be followed. Special attention must be given to the state of the heart.

### *Muco-membranous Colitis.*

Dr. ALBERT MATHIEU (of the Hôpital Andral, Paris), Dr. F. BOAS (Berlin), and Dr. JULIUS MANNABERG (Vienna) read papers upon this subject. Dr. MATHIEU said that constipation, often spasmodic, was the rule in muco-membranous colitis. Diarrhœa, which was always of short duration, was the result of an attack of catarrhal colitis. There was always in muco-membranous colitis a secretional irritation of the mucous membrane. The disease only showed itself in its full intensity in persons predisposed by previous neuropathic tendency. Nervous derangement produced hyperæsthesia of the walls of the large intestine and interfered with its motility. In treatment, castor oil, copious enemata, and belladonna were useful. Drastic purgatives, astringent injections, and massage should be avoided.

Dr. BOAS said that the only positive diagnostic symptom was the existence of the characteristic mucous masses; other symptoms, such as tenderness of the colon, coloptosis, moveable kidney, and intestinal atony, went no further than supporting the diagnosis. It was absolutely necessary to decide whether the muco-membranous colitis was idiopathic or a complication. Differential diagnosis was required only as between muco-membranous colitis and colitis mucosa. By frequent observations and the systematic employment of intestinal injections a decision would be almost always possible. The clinical history of muco-membranous colitis was exactly parallel to that of habitual constipation, and methods of treatment which were suitable for the one were also suitable for the other.

Dr. MANNABERG said that a distinction must be drawn between enteritis membranacea and colitis mucosa. By the former name was understood a sub-acute or chronic catarrhal affection of the large intestine accompanied by evacuations particularly rich in mucus. Colitis mucosa was the name of a morbid condition characterised by paroxysmal attacks of colitis followed by the evacuation of masses of mucus. The former variety was, in fact, only a catarrh of the large intestine, accompanied by an abundant evacuation of mucus; it had in a general way the same pathogenesis as catarrh of the large intestine. Colitis mucosa had, on the contrary, a special pathogenesis. In the great majority of cases its basis was a general neuropathy (hysteria or neurasthenia) and there was a tendency to consider it as a neurosis. The paroxysms might be induced by certain factors of occasional occurrence, the principal of which were diseases of the genital organs (both in the male and the female), mental disorders, constipation, irritating rectal injections, and organic diseases of the intestine. The pathological anatomy of enteritis membranacea was the same as that of enteritis in general. With regard to colitis mucosa, in the very rare cases in which an

examination had been possible, either in the living or the dead subject, no appreciable lesion of the mucous membrane had been discovered.

*Pulmonary Œdema.*

Professor BASCH (Vienna) read a paper upon this subject. He said that the primary pathogenic condition of pulmonary œdema was the stoppage of the capillary circulation in the alveoli from the increased blood-pressure in the left auricle. The second was that there was a free supply of blood from the right side of the heart coming through the pulmonary arteries. The mechanical consequences of these two conditions were the enlargement of the pulmonary alveoli and the increase of the resistance of the alveolar walls. The enlargement was produced by the lengthening of the capillary vessels and the increase of resistance by the high tension of the blood in the capillary network. To these two consecutive processes might be added exudation into the alveoli, a natural consequence of the impeded circulation in the lungs. The enlargement of the alveoli and the increase of resistance in their walls created a mechanical obstacle to respiration and a consequent impairment of the aeration of the blood, giving rise to the sensation of dyspnœa, which was only the expression of the disproportion between the respiratory effort and its effect. This morbid sensation was aggravated proportionately to the increase of carbonic acid which accumulated in the blood through the interference with its aeration. It over-stimulated the respiratory centres and threw the respiratory muscles into forced action. The difficulty became greater when intra-alveolar exudation was added to the preceding conditions of enlargement of the alveoli and increase of resistance in the lungs. Mere exudation without concomitant enlargement did not interfere with respiration so much as was believed. Persistent dyspnœa increased the carbonic acid in the blood, and death of the heart from general asphyxia was the result. Cardiac dyspnœa, cardiac asthma, and pulmonary œdema had their starting-point in muscular insufficiency of the left auricle, and not only in primary insufficiency which was characterised by low arterial pressure but also in secondary insufficiency which was characterised by increase of the arterial pressure.

Professor MASIUS (Liège) said that œdema was an abnormal accumulation of lymph, and that acute pulmonary œdema was only a particular variety of it presenting two peculiar characters depending on the activity of the pathogenic process and on its special situation; these were (1) the accumulation of fluid in the lymphatic tissue combined with the more important symptom that fluid collected in the alveolar cavities either by rupture of their walls or by exudation through them; and (2) the suddenness with which the phenomena appeared. The theories of the pathogenesis of this œdema regarded in a general way were three in number: (1) the purely mechanical theory which attributed the œdema to a great increase in the lateral pressure in the capillary vessels and which ought to be rejected; (2) the opinion of Hamburger and Heidenhain which considered that lymph was secreted by the endothelial cells of the capillary wall and that œdema was an exaggeration of this function; and (3) the theory of Starling, Winter, and Théaulon, which ascribed the genesis of œdema to modifications of the osmotic relations between the liquids on each side of the vascular wall and to variations in the permeability of this wall. Two prominent facts had here to be considered. In the first place, an active, simple, non-inflammatory hyperæmia of the vessels without obstacle to the flow of liquid was by itself incapable of producing œdema. In the second place, lesions of the capillary walls, involving an increase in their permeability, were an important factor in œdema. Clinically, pulmonary œdema occurred in three forms. 1. *Inflammatory œdema*, which was probably a reflex vasodilatation, developed under the influence of some causal factor and followed by a direct lesion of the walls by microbes living in the interior of the normal pulmonary parenchyma. 2. *Œdema of stasis*, which was by far the most frequent and was met with in diseases of the heart especially in commencing stenosis, in diseases of the vessels such as aortitis or arterio-sclerosis, and in diseases of the kidney such as primary sclerosis. Much experimental work had been done on this subject, but the conclusions were often contradictory. The fact which appeared best established was that œdema might be produced under the influence of an increase of pressure in the pulmonary arteries arising from an increased activity of the right ventricle concomitant with a stasis due to inaction of the left heart. 3. *Toxic œdema*, which was hardly known except in experimental research, examples being the œdema produced by muscarine and by iodine.

M. TEISSIER (Paris) said that acute œdema or serous apoplexy of the lung must be distinguished from the varieties of pulmonary œdema, the evolution of which was generally slow or chronic, and which had a mechanical or passive origin. The special nature and different origin of acute œdema were indicated by its sudden onset and by the absence of fibrin in the effused fluid. Clinically it was distinguished by premonitory sensations of tickling in the throat or painful intra-thoracic tension and by intense dyspnœa, accompanied by continuous spasmodic cough and soon followed by frothy-red expectoration, with abundant fine râles to be heard over the œdematous region. For its production either infection or the previous action of a toxic agent was necessary. Among infective conditions, acute articular rheumatism, influenza, puerperal septicæmia, typhoid fever, and pneumonia held the first place. The requisite toxic action was exercised chiefly by Bright's disease and by alcoholism. This preponderating influence of infectious and of toxic influences was proved by experiments on the artificial production of pulmonary œdema by means of muscarine, prussic acid, salicylate of methyl, nitrite of amyl, and even by the injection of salt solution. Heart-disease was another important factor. Acute œdema of the lung was distinguished from passive and chronic œdema not only by its pathogenesis and symptoms, but by the fact that these two varieties of pulmonary œdema have a totally different prognosis, acute œdema being often extremely dangerous and capable of causing the death of the patient in a few hours. With regard to treatment, experience had shown the undeniable value of blood-letting. Atropine had given only negative or untrustworthy results. Morphia was dangerous and ought not to be employed.

*Ulcerations of the Stomach.*

Professor DIEULAFOY (Paris) made a report upon this subject. He did not take into consideration all the symptoms and all the complications of gastric ulcerations, but selected a few types, including (1) erosion, which was the smallest of the ulcerations but might nevertheless lead to copious hæmorrhage; (2) lesions of the mucous membrane somewhat larger than erosion, and for which he proposed the name "exulceratio simplex"; (3) simple ulcer (*ulcus simplex*), the most formidable complications of which were hæmorrhage and perforation; and (4) specific ulcerations of the stomach due to tubercle and syphilis.

## THE MEDICAL DISEASES OF INFANCY.

*The Artificial Feeding of Infants.*

Professor A. JACOBI (New York) read a paper on this subject. He said that the results of the analyses of human milk were contradictory, that no two were alike. Alterations in different periods of lactation which were asserted by some were denied by others; those caused by menstruation, sickness, or ingesta were either well understood or dimly appreciated, but rarely measurable. The nature of its proteid, whether uniform or compound, was not sufficiently known. Whether there was an essential quality that was beyond the domain of chemistry was not known. That was why so many and so different iron-clad rules had been established for the selection of substitutes and why the uncertainty had rendered experimentation with commercial substitutes by chemists, and even by respectable clinicians, so common. If human milk were a uniform body the demand for an exactly equivalent substitute would be justified. Nature, however, was more liberal in allowing latitude than a chemist. Heat both improved and injured milk. When milk was exposed to from 68° to 70° C. for 10 or 15 minutes the bacterium coli and the bacillus lactis aerogenes were destroyed; after long exposure this heating killed pathogenic germs; at 80° C. it coagulated albumin and changed the taste and odour of the milk; even at 70° C. it changed casein so as to impair its value for dairy purposes. In boiling a part of the albumin was deposited, the lecithin was destroyed, and the fat was altered both chemically and physically. Serious changes appeared to take place through long boiling, both in casein and in nuclein. High temperatures continued for hours were required to destroy some of the long-lived spores; their injuriousness, however, was not entirely clear. Boiled, pasteurised, or sterilised cow's

milk was never woman's milk; it was not a curative agent; it afforded, however, the great advantage of destroying fermenting and pathogenic germs; that was why it was indispensable in large cities and during the prevalence of certain epidemics, and wherever fresh and unpolluted milk was not accessible. When employed as exclusive infant food cow's milk watered or not was liable to cause constipation, or diarrhœa, rickets, and scurvy. To preserve its bactericidal effect heat should be followed by immediate and rapid cooling, but not freezing. Ample dilution of the artificial food of the infant, and particularly of the newly-born, was required because of the heterogeneous composition of cow's milk; even those who were as usual put to an incompetent breast required water to combat loss of weight and the tendency to nephritis and to nephrolithiasis, the former of which was still more frequent than the latter, indeed very frequent. A large amount of liquid did not interfere with the motility of the stomach and did not cause dilatation, firstly because the normal infant was no glutton and secondly because absorption began at once. Easy and equal digestibility of the casein in woman's and in cow's milk was either asserted or denied by good observers. When cereal decoctions were mixed with cow's milk its casein was claimed and proven to precipitate in fine tufts. On the other hand, cereals were said to have no such effect any more than water. The digestibility of a certain amount of amylum, such as was contained in cereals, had been erroneously and persistently denied when it had long been proven both by experience and by experiments to exist. Cereal decoctions were the proper diluents for the surplus casein of cow's milk. Milk sugar was partly absorbed in the stomach, partly in the intestine, and partly changed into lactic acid. It was required for digestion and was an antiseptic. Not enough of it, however, could be given to have the latter effect to the same degree that was exerted by flours. Besides, milk peptones disappeared with acid fermentation. That was why milk sugar should not be given in large quantities but other carbohydrates in its stead. Cane sugar should take its place particularly as for the purposes of digestion there was milk sugar enough in cow's milk that formed part of every artificial food, and because there was a ferment in the intestine of the young which inverted cane sugar and rendered it absorbable. Besides, every other carbohydrate had the same power to protect albumin against putrefaction. Fat was added to cow's milk for the alleged purpose of increasing its nutritive property by preventing the loss of the fat and albumin of the tissues and by loosening and separating the minute particles of casein. It should be remembered, however, that even human milk often contained so much fat as to cause "fat diarrhœa," that the normal infant in the fæces eliminated unchanged fat in goodly quantity, that moreover the fat globules of cow's milk were larger, less numerous, and less absorbable than those of woman's milk, that the two fats were not equal chemically, and that the urine was liable after feeding with cow's milk fat to contain ammonium, and the gut toxins. The mineral constituents of cow's and human milk were different. The addition of chloride of sodium to artificial foods was required both for physiological and chemical reasons. Home-made artificial foods were preferable to the proprietary foods of the market for many reasons. The separation of the component parts of cow's milk by mechanical means and the recomposition of the same was a procedure of doubtful value. The experience of the physician and of the well-directed public at large was equivalent at least to laboratory and library theories based on facts that were *sub judice*.

Dr. O. HEUBNER (Berlin) read a paper upon this subject. He said that a scientific set of rules could not be drawn up for the artificial feeding of children except by a study of the healthy infant born at full time. As rules for feeding a healthy workman could not be laid down by the study of a diet of an invalid, so a normal infant could not be fed by studying the difficulties or successes obtained in feeding unhealthy children. This, however, was what medical men very generally did, because they were so constantly brought into relation with invalid children. The common sense of nurses, however, had always understood that nothing could replace the milk of the mother so well as the milk of some animal. The milk of the various domestic animals, especially that of the cow and of the goat, did not differ more from the milk of a woman than the various sorts of meat differed the one from the other, such, for instance, as pork and beef, which the healthy child, like the adult, could eat alternately. The intestine of the healthy infant was capable of digesting the milk of the cow just as well as the milk of a woman. The labour of digestion, however, was greater in the former case than in the latter, for large proteid molecules required a greater digestive effort than the small hydro-carbon molecules, and cow's milk was very rich in the former, while the milk of a woman was rich in the latter. Other difficulties of artificial feeding arose from infection or decomposition to which the milk of an animal was always exposed before the child got it. As regards this danger, the sterilising of milk was one of the most important advances made during this century. There was no need to boil milk for half an hour, it was quite enough to boil it for five or ten minutes, and even if the milk was only heated for 25 minutes to 65° it appeared to be sufficiently sterilised without undergoing any disagreeable modification either in its taste or in its nutritive value. If a dyspeptic infant had to be artificially fed it was quite another affair, for the digestive power was considerably weakened. It was not so much the proteid matters of the milk which offered the greatest difficulty, but the fat. There were various ways of getting over this difficulty. The quantity of fat and of proteid substances could be lessened by diluting the milk with boiled water and adding sugar so as to bring it up to the proportions which existed in the milk of a woman—that was to say, 7 per cent.; instead of the sugar some other carbohydrate might be added, such as powdered biscuits. On another plan the milk might be peptonised. Another plan was to add skim milk or to replace the sugar of milk by another sugar—namely, maltose. These were the principal plans which had been adopted in the preparation of artificial milk.

Dr. MONTI (Vienna) read a paper upon the Scientific Principles involved in Preparing from the Milk of an Animal an Equivalent Diet to the Milk of a Woman. He pointed out that the acidity of cow's milk could be reduced to that of the milk of a woman by the addition of carbonate of potassium. Coagulation should be arranged so as to take place in the same manner in the milk of the cow as in the milk of a woman. To do this equal quantities of cow's milk and of butter-milk should be mixed together and a little carbonate of potassium added. The proportions of casein, of fat, and of sugar could all be arranged to be in the proper proportion by the use of a mixture of milk and butter-milk.

Dr. AXEL JOHANNESSEN (Christiania) read a paper upon the Sterilisation of Milk and Mode of Use. He pointed out that to sterilise milk completely by boiling at the ordinary atmospheric pressure it would be necessary to cook it for several hours; but sterilisation could be carried quite far enough by other methods, of which the best and simplest was pasteurisation at 70° C. Great care should be taken to look after the milk-supply so that the supply of raw milk should be as free from germs as possible. The milk after pasteurisation should be cooled down to about 17° C. and used within 12 hours.

Dr. VARIOT, of the Hospital for Sick Children, Paris, read a paper upon the Sterilisation of Milk from a commercial point of view so as to be applicable to the needs of a great town. He described the plan adopted in Paris which was as follows. The milk was put in bottles holding a quarter or half a litre. It was raised to a temperature of 115° C. and the bottles were then sealed by corks covered with paraffin. Milk so treated would keep 15 days or more. At the Belleville Dispensary 150 litres of this milk were distributed per diem to poor children. The greater number of these children could take this milk without difficulty, beginning at the age of from two to three months. At an earlier age than this it must be diluted with a third or a fourth of boiled water and a little sugar added. Even wasting babies had improved by the use of this milk, and out of 800 cases there had never been an instance of Barlow's disease. Rickets was quite exceptional as well as marked constipation or anæmia.

Professor D'ESPINE (Geneva), Dr. MARFAN (Paris), Dr. CONCETTI (Rome), Dr. VIOLI (Constantinople), Dr. ESCHERICH (Gratz), Dr. SEITZ (Munich), Dr. SCHLOSSMANN (Dresden), and Dr. GRAANBOOM (Amsterdam), took part in an interesting discussion.

*Gastro-Intestinal Infection in Children at an Early Age.*

Dr. ESCHERICH (Gratz) read a highly technical paper upon the Part played by Microbes in Gastro-intestinal

Diseases. He pointed out that by the use of the Gruber-Widal reaction it was possible to differentiate the variety of the bacillus coli existing in one individual both from that existing in another individual and also from those which were introduced with the food. Gastro-intestinal affections due to the action of bacteria must be classified according to their etiology.

Professor A. BAGINSKY (Berlin) read a paper upon the Gastro-Intestinal Affections of Children from the point of view of pathological anatomy. These he divided into—I.—Functional troubles comprising acute dyspepsia not marked by any important anatomical changes. II.—1. Anatomical alterations: (*a*) lesions of a catarrhal nature, such as sub-acute dyspepsia, accompanied by cellular infiltration of the mucous membrane; (*b*) infantile cholera with destruction of the intestinal epithelium over a large surface; (*c*) chronic gastro-intestinal catarrh; and (*d*) intestinal atrophy. All these latter processes—namely, from *a* to *d*—were accompanied by vomiting, diarrhœa, and colic. Assimilation was impaired and the functions of the liver and of the pancreas were disturbed. 2. Anatomical lesions localised in the follicles. These might be divided into (*a*) simple follicular enteritis accompanied by a moderate degree of fever, a slight pain, and the secretion of blood; and (*b*) severe infectious follicular enteritis. In this there were destruction of the mucous membrane and the formation of abscesses. III.—Both functional troubles and the more severe morbid processes were due to infection or intoxication produced from within. Such were the direct action of the normal microbes of the intestine the virulence of which was exalted under particular circumstances. They could also be produced from without by the influence of toxins derived from the food or by microbes introduced with the food which became virulent in the intestine or finally some poison might be contained in the food. IV.—Those morbid processes which were most often developed during the heat of the summer were caused by the common saprophytes or their toxins, but these microbes were not specific. Septicæmia arising from the intestine was very rare. Cases had been reported where the infection had been localised in the kidney and where the infarct had gone on to suppuration or necrosis.

Professor FEDE (Naples) read a paper mainly dealing with the Symptoms and Treatment of Chronic Forms of Gastro-intestinal Infection. The clinical features noted were very various as they depended upon the intensity, the duration, the complications, and the atrophy which followed the disease. As to treatment, rules of hygiene and of diet came in the first rank. In very acute cases nothing should be given but water and, as a rule, artificial feeding by means of a feeding-bottle should be given up and a wet-nurse substituted. It was of great importance to clear out and to disinfect the intestine. This could be done by such drugs as castor-oil or calomel and by washing out the intestine with some disinfectant solution.

Dr. MARFAN (Paris) read a paper upon the Causes of Gastro-enteritis in Infants. He said that dyspeptic gastro-enteritis arose mainly from improper feeding, that infectious gastro-enteritis was principally caused by germs in the milk of the cow being conveyed into the digestive tract. Toxic gastro-enteritis resulted from the introduction of some chemical poison into the digestive tract. Poisoning by drugs was not uncommon, but the usual source of poisoning was milk, due to its containing toxins which had been produced by the action of germs before sterilisation. Other kinds of gastro-enteritis were consecutive to various maladies, such as, for instance, measles, influenza, or diphtheria. Infantile cholera or summer diarrhœa seemed to be due to a combination of circumstances—namely, some alterations in the digestive secretions set up by the hot weather which brought about a kind of self-poisoning, the increased growth of microbes in the milk of the cow under the influence of high temperature, and, finally, the formation of microbes of toxins before sterilisation.

### *Infantile Tuberculosis.*

Professor D'ESPINE (Geneva) read a paper upon Prophylaxis in Infantile Tuberculosis. He said:—1. Infantile tuberculosis was a parasitic affection acquired by contagion in the child in the same way as in the adult. There were, however, exceptional cases in which the infection was congenital, being acquired by way of the placenta. 2. The source of the contagion in the immense majority of cases was from the sputum of tuberculous adults. 3. Another source of contagion was by way of the milk of cows, or very occasionally of goats, which were suffering from tuberculosis of the mammary gland. This mode of infection played a more important part in the infant than in the older child. 4. In infants up to the age of two years kissing by their mothers or nurses who were affected with phthisis appeared to be the usual mode of transmission. Sometimes contagion was carried directly by aspiration into the bronchi of saliva which contained bacilli. 5. In the child of between two and six years of age tuberculosis was very frequent and, as a rule, commenced in the bronchial glands. The greater frequency of tuberculosis between the ages of two and six years was explained by the habit which children had of putting everything in their mouths and of sucking their fingers. 6. From the age of six years up to that of puberty the frequency of tuberculosis commenced. There was a very real danger of contagion owing to the circumstances of school life, but in D'Espine's opinion this danger had been exaggerated. 7. The infection of tuberculosis occurring through the skin was very exceptional. 8. Hereditary predisposition played an important part in the production of tuberculosis in the child. It was therefore necessary that prophylactic measures should be specially applied to the children of tuberculous parents. Measures of prophylaxis might be divided into two classes—namely, those which went to diminish the danger of contagion and those which raised the resistance of the child to the infective organism. In the first class measures directed towards giving the child a supply of healthy milk might be included. Precautions must be taken that the nurse under whose care the child was placed should be free from tuberculosis. If the mother was phthisical the infant must be suckled by a healthy nurse. If the child came of a tuberculous family the general prophylactic measures recommended by the Academy of Medicine must be attended to. In schools no phthisical person should be allowed to be either a master or a mistress. Measures for raising the resistance of the children were as follows. The building of homes in the country to which poor and weakly children could be sent. Holiday camps should be provided for scholars and any predisposition to tuberculosis in its earliest manifestations should be fought against by sending children either to some mountain station or to the sea.

Dr. HUTINEL (Paris) read a paper on Heredity in Tuberculosis. He spoke as follows: Tuberculous heredity might show itself in three ways—by a transmission of the germ itself, by transmission of the predisposition, or in various nutritive trouble. 1. (*a*) Transmission of the germ at the time of conception was at present nothing more than a hypothesis; and (*b*) it was possible, however, that the fœtus could be infected before birth through the placenta. 2. Heteromorphic heredity. 3. Hereditary predisposition. 4. Prophylaxis. From the point of view of prophylaxis the part played by the medical attendant was very important. He should pay special attention to—1. The protection of tuberculous children against infection by bacilli. 2. In tuberculous children one great danger to be guarded against was the existence of latent centres of tuberculosis which were capable of giving rise to auto-infection. 3. In phthisical children all troubles incident to growth ought to be carefully attended to where there was any suspicion of a predisposition to tuberculosis.

Professor MOUSSOUS and Dr. RICHARDIÈRE (Paris) both read papers upon the Clinical Forms of Tuberculosis in Early Life. These papers tended to show that the tuberculosis of early life was usually of a generalised form, or perhaps it should be said that it started as a local disease of one organ and became generalised during the later period of its course. The favourite point of starting of the disease was the lymphatic glands. In cases of doubtful diagnosis Professor Moussous considered that the serum reaction which had been studied by Arloing and Courmont was of great value. Dr. Richardière, however, considered that at present this method could not be universally used.

### *Acute Non-Tuberculous Meningitis.*

Dr. MYA (Florence) read the first paper upon this subject. By far the greater number of cases of meningitis of infancy, he said, were produced by the micro-organism of Weichselbaum, meningococcus intracellularis meningitidis. The clinical types of disease brought about by this micro-organism could be reduced to two—(1) the acute type characterised by stiffness of the neck, vomiting, rigidity of the muscles, and high fever. If a post-mortem examination

was made the whole surface of the brain would be found covered with a fibro-purulent exudation. The micro-organism was easily found and would bring about the typical symptoms of the disease in animals if injected into the sub-dural space. The disease generally lasted from three to 10 days. 2. The sub-acute type produced a disease which might last for some months, and the disease described by Carr as *simplex basis posterior meningitis* belonged to this category. The symptoms were much the same as in the acute disease, only generally very much less marked. The micro-organism was only very sparingly found, and if injected into animals did not produce the same symptoms. There was a form of meningitis which was only very rarely observed and which was due to the streptococcus pyogenes; but this form was almost always secondary to septicæmia developed within the cavity of the skull.

Dr. NETTER (Paris) read a paper upon the same subject. He said that a variety of cases of meningitis was due to other causes than tubercle; for instance, meningitis might arise as secondary to various diseases such as otitis, typhoid fever, or pneumonia, or it might be a primary disease such as was seen in epidemic meningitis. With regard to the diagnosis Dr. Netter said that it was impossible to put too high a value upon Kernig's sign. Cases where this sign had been met with where there was no meningitis were so rare that they were almost justified in asking whether the absence of meningitis was really definitely proved. As to treatment that by means of hot baths introduced by Anfrecht was of the greatest value.

## III.—SURGERY.

### GENERAL SURGERY.

### *Pancreatic Surgery.*

Professor CECCHERELLI (Parma) arranged his conclusions under 24 headings, of which the following were the principal:—(*a*) Emaciation, presence of fat in the fæces, sugar in the urine, bronzed skin, jaundice, and pain were met with in the majority of pancreatic affections. (*b*) Complete extirpation of the pancreas was difficult on account of its deep situation and its intimate connexion with important viscera rich in vessels and nerves. (*c*) Surgical intervention was more justifiable at the small end of the pancreas than at the head. (*d*) Extirpation should not be attempted in cases of tuberculous or syphilitic lesions. In partial extirpation one of the two canals must be left. (*e*) Pancreatic tumours were generally either blood cysts following injuries or retention cysts. In the latter case surgical intervention was useful, but should be limited to excision of the cyst. It was necessary to keep in mind the question of opening Wirsung's canal and the probable discharge of pancreatic juice into the abdominal cavity. (*f*) Pancreatic calculi might be extracted. (*g*) Necrosed fragments of the pancreas might be removed. (*h*) In suppurative or gangrenous pancreatitis the rule was to do nothing during the acute stage. For the treatment of abscess or gangrene of the pancreas three routes were available—the lumbar extra-peritoneal, the transpleural, and the median supra-umbilical. (*i*) In hernia of the pancreas caused by injuries reduction and even fixation might be performed. (*j*) In contusions and wounds of the pancreas, if there were hæmorrhage it might be arrested either by sutures or by tying the bleeding vessels. Clots of blood in the abdominal cavity should at the same time be removed. (*k*) Experimental pathology justified the fixation of moveable pancreas. (*l*) If from any cause the duct between the pancreas and the duodenum became closed a new passage might be made for the pancreatic juice or a pancreatic fistula might be established. (*m*) Stitches through the pancreatic parenchyma did no harm, and were tolerated as in the kidneys, the liver, and the spleen. (*n*) In suturing the pancreatic duct the stitches should not pass into the interior of the duct, as concretions were liable to be formed on them. (*o*) Regeneration of the pancreas had been observed. (*p*) After complete extirpation of the pancreas great development of the glands of Galeati had been observed, and especially a karyokinetic increase in the epithelia, leading to the supposition that the missing gland might be thereby replaced. (*q*) The thermo-cautery or galvano-cautery ought not to be used in extirpation of the pancreas.

Mr. MAYO ROBSON (Leeds) commenced his report on the same subject by stating that he was convinced that pancreatic affections were much more common than was usually thought. He based his remarks on his personal experience, he having operated on 40 cases of pancreatic disease and having seen a considerably larger number of cases in which operation was either not consented to or not thought advisable. Under "anatomical considerations" he dwelt on the importance of posterior drainage where practicable in acute and in suppurative pancreatitis. For reaching the main pancreatic duct he had found it practicable to incise the second part of the duodenum and lay open the termination duct from the papilla.

*Cancer.*—In over 50 cases which he had seen he had found cancer usually to occur after 40 years of age and he believed that the cases occurring earlier in life were in many instances chronic interstitial pancreatitis, which might resemble cancer not only in the symptoms but in the naked-eye appearance after death. After describing the symptoms he remarked on the importance of distinguishing between cancer of the head and that of the body and tail of the pancreas; he then discussed the diagnosis and advised that especially in young subjects, but also at times in older patients, a hopeless prognosis should not hastily be given before surgical treatment had been tried, as if the case turned out to be chronic interstitial pancreatitis a cure might result from treatment. In describing the treatment he thought that excision of the pancreas for cancer could seldom be feasible or justifiable except in those cases where the disease was limited to the body or tail of the organ, and then only when it was caught in an early stage. Of the 15 cases on which he had operated for the relief of symptoms by cholecystotomy or cholecystenterostomy, nine recovered and lived for some time in greater comfort. The important fact, however, that some of the cases operated on and thought at the time to be cancer of the head of the pancreas, but which recovered and were now in perfect health, showing the tumours to have been chronic interstitial pancreatitis and not cancer, led Mr. Mayo Robson to advocate operation in all cases not too far advanced, especially in young or middle-aged patients, not because much good would be done if the case were truly cancer, but under the hope that the tumour might be inflammatory and not malignant.

*Pancreatic cysts.*—He had operated on five cases of pancreatic cyst for which as a routine treatment he advocated incision and drainage which he had performed in four cases with three recoveries. In one case the cyst was so easily enucleated that it was removed in that way and the patient made an uninterrupted recovery, but his experience, not only in his own case, but others seen under the care of his colleagues, would lead him to believe that incision could only rarely be justifiable. In none of his cases were any pathognonomic symptoms present and he thought that the diagnosis must usually be made from the physical signs.

*Pancreatitis.*—He drew a parallel between the inflammatory diseases of the liver, such as infective and suppurative cholangitis and chronic interstitial hepatitis and similar diseases of the pancreas and its duct. He believed he had seen functional ailments of the pancreas ending in recovery that would come under the heading of infective catarrh of the pancreatic ducts, and he adduced positive evidence of suppurative catarrh of the ducts as well as of chronic interstitial inflammation of the gland. He believed that as diagnosis became more perfected these diseases would be more frequently recognised and awarded their proper place in medicine. He assented to the pathological classification proposed by Fitz, of dividing acute pancreatitis into suppurative, hæmorrhagic, and gangrenous pancreatitis, but for clinical purposes he considered the subject under acute, subacute, and chronic pancreatitis. In discussing the etiology he laid stress on bacterial infection as being the essential and immediate cause, but enumerated a number of extrinsic causes, such as gastro-duodenal catarrh, injury, and pancreatic and biliary lithiasis. The mode of infection he believed was nearly always through the ducts. He discussed the symptoms, signs and diagnosis, and remarked that although pancreatitis was a disease without exact pathognomonic signs the diagnosis could usually be arrived at by a careful study of the history, mode of onset, and the combination of symptoms and signs. A case of acute infective pancreatitis coming under Mr. Mayo Robson's observation was related; also four cases of the suppurative form which were operated on after abscess had formed; of two, in which the pus was evacuated by an incision in the loin, recovery followed; and of two opened from the front both died. In both cases leakage of pus

had previously occurred into the stomach and the pus had been vomited. In one case of suppurative pancreatitis in which rupture of the abscess occurred into the bowel the patient was too ill when seen to bear operation, and gradual recovery occurred without surgical treatment. The treatment of acute infective and frequently that of suppurative pancreatitis practically resolved itself into that of peritonitis commencing in the superior abdominal region, and Mr. Mayo Robson laid stress on the getting rid of inflammatory products by lumbar drainage if practicable, although it might be necessary to make the diagnosis by an anterior incision. In the acute form he drew a comparison between gangrenous appendicitis and acute infective pancreatitis and considered surgical treatment just as necessary in one as the other as soon as a probable diagnosis could be arrived at. If there be great distension in the epigastrium it would be easier and safer to make the exploratory incision in the left costo-vertebral angle. Treatment other than operative in order to get rid of distension, relieve pain, fever, and other symptoms until a definite diagnosis could be made was also considered. The details of reaching the abscess when found were also discussed, whether the collection be lumbar, subdiaphragmatic, epigastric, or pelvic.

*Chronic interstitial pancreatitis.*—Mr. Mayo Robson laid great stress on the importance of this disease which he believed was often mistaken for cancer of the head of the pancreas and which he believed had not received much attention either from clinical observers or from pathologists, certainly not as much as it deserved. His experience in this class of cases had resulted from his having operated on a considerable number of cases of jaundice depending on obstruction in the common duct, the obstructive jaundice, wasting, paroxysmal attacks of pain and ague-like seizures having given rise to the suspicion of gall-stones and the absence of relief by medical treatment having rendered surgical treatment necessary. He argued that its recognition was of vital importance since it was a disease not only capable of relief but of absolute cure by surgical treatment. He illustrated his assertion by a brief report of 15 cases on which he had operated with recovery in 14. In the fatal case, operated on when the patient was almost too ill for recovery, a necropsy showed a simple cirrhosis of the head of the pancreas. In another case in which relief was given by cholecystenterostomy, but in which there was a recurrence of the trouble owing to closure of the opening followed by death three months afterwards, a necropsy showed chronic interstitial pancreatitis and not cancer, as the course of events had led those observing the patient to suppose would be found. Mr. Mayo Robson believed that chronic interstitial pancreatitis with inflammation in the pancreatic duct was a regular accompaniment of gall-stones in the common duct, and that it frequently continued after the original cause had passed; this observation had been confirmed by Dr. J. H. Ferguson of Edinburgh, who said that his almost universal experience in cases where death had resulted from infective or suppurative cholangitis was that beads of pus could be expressed from Wirsung's duct. The cases related illustrated the symptoms and the treatment by cholecystotomy, which at once removed tension and allowed the pancreatic duct to empty the organ of its infective products. Doubtless at times the manipulation of the head of the pancreas which occurred during the operation might detach calculi and inspissated mucus or pus from the pancreatic duct. The simulation of malignant disease of the head of the pancreas by chronic interstitial pancreatitis should lead the surgeon to hesitate in declining operation in any case of distended gall-bladder with jaundice where the patient was able to bear it, as, although little good would be done if the disease were malignant, should the disease prove to be inflammatory a real and permanent cure might be brought about. After some remarks on hæmorrhagic pancreatitis, which in Mr. Mayo Robson's experience of three cases had always been traumatic and associated with effusion into the lesser peritoneal sac, he discussed the subject of pancreatic calculi, which, both from the paucity of specimens in the museums, from the very few examples found post mortem, and from the very few recorded cases, he believed must be a rare disease, and usually only recognised by the pancreatitis and the obstruction to the common duct with infective cholangitis to which the calculi gave rise. For their removal he recommended exploration of the duct through an opening in the second part of the duodenum, of which operation he gave examples. In conclusion, he looked forward to the time when pancreatic diseases would be awarded the place they deserved in the diagnostic efforts of the physician, and when the surgeon would be called on much more frequently to treat them at a stage when operation, whether exploratory or curative, might be undertaken with every hope of temporary success or permanent cure.

Dr. JULES BOECKEL (Strasbourg) described at considerable length the details of operations on the pancreas.

*Radiography in the Study of Fractures and Dislocations.*

Dr. G. MANOURY (Chartres) said that in order to lessen the chances of erroneously interpreting the appearances shown by radiography it would be desirable to mark certain data on the photographic plates, especially the point where a perpendicular drawn from the focus to the plate met the latter. Radiography had rendered great service in the diagnosis of fractures by revealing the number of the fragments, their form, their position, the overlapping of their ends (which when the photograph was well taken corresponded with sufficient exactness to the shortening of the limb), their displacement in different directions, and the position of splinters. For the purpose of gaining an accurate knowledge of the nature of a fracture it was necessary to take radiographs of it at different angles, usually a front view and a side view. It was possible for a fracture to be unrecognised, even though the bone was examined in various directions; this, however, was very rare. Radiography was useful in all fractures. Among those in which it was most valuable the following might be mentioned: fractures of the upper extremity of the humerus, which so often produced stiffness and ankylosis attributed to periarthritis; fractures of the lower end of the radius which frequently accompanied lesions of the carpus; fractures of the leg, especially those involving the articulation of the tibia and the tarsus, in which last radiography was the only means of obtaining exact information as to the relations of the astragalus, tibia, and fibula, a matter of great importance in the prognosis and treatment of these fractures; fractures of the astragalus, which were some years ago erroneously considered to be very rare; and finally, fractures of the metatarsal bones, the anatomical lesion of a condition well known to military surgeons, the cause of which had for a long time been discussed without its real nature being suspected. The formation of callus might be studied by means of radiography. At the end of 12 days there appeared at the ends of the bones a slightly shaded area which became gradually darker. In certain cases, especially in oblique fractures of the tibia, the callus might remain invisible for a long time, even after consolidation appeared to be complete. Radiography was as useful in the treatment of fractures as in their diagnosis, facilitating reduction, and enabling the position of the ends to be inspected, and, if necessary, corrected, during the process of consolidation. Radiography also showed in what fractures wiring was required, examples of which were to be found in fractures of the elbow and ankle. Radiography had not done so much for dislocations as for fractures, but a certain number of unrecognised dislocations had been diagnosed by this means. Unfortunately, it gave no information as to the most frequent causes of irreducibility.

Professor E. VON BERGMANN (Berlin) said that their knowledge of fractures had during the last ten years made two important advances—firstly, the operative treatment of certain simple fractures by the exact apposition of the fragments, and secondly the recognition of the seat of fracture and of the pathological anatomy of the osseous lesions by means of radioscopy and radiography. Without doubt there were manifest local causes which hindered the consolidation of fractured surfaces. It was known, for instance, that the interposition of muscular fibres prevented the formation of callus in cases of fractured femur. Unfortunately, it was not possible by means of the Roentgen rays to make sufficiently sure of this to warrant the making of an incision. This accident might, however, be inferred when the view obtained with the fluorescent screen showed the fractured surfaces at a distance from one another (dislocatio ad longitudinem) and between them a more or less transparent interval which was always of the same width whatever position might be given to the fractured limb. Other local causes of non-union were nevertheless disclosed plainly by the Roentgen rays, occurring principally in fractures communicating with joints and in fractures of small bones. Fracture of the patella was a good example. Malgaigne

deplored the frequency of the cases in which these fractures remained ununited and long before the antiseptic era he recommended a species of cutting operation—namely, the application of his sharp hooks. Malgaigne's hooks, however, were much more dangerous than incising the skin and uniting the fragments with silver or aluminium bronze wire. Examination of recent fractures of the patella by means of the Roentgen rays disclosed three obstacles to bony union. 1. Inequality in the size of the two fragments. The upper fragment being much larger than the lower one they could only be brought into apposition by means of a suture. 2. Multiplicity of the fragments. In addition to the principal fragments there were small fragments or splinters which made their way between the principal surfaces and prevented coaptation. 3. Displacement of the fragments. One of the fragments underwent a movement of rotation, so that the fractured surface of the other fragment met it on its outer aspect and the two fractured surfaces could not be brought into contact. All these various displacements being rendered visible by the Roentgen rays it became evident that an operation was necessary to gain access to the seat of fracture, so that the conditions above enumerated might be dealt with and the fragments wired. In his clinic Professor von Bergmann had obtained perfect bony union in more than 25 cases of this kind. The operations proved that callus was of a bony and not of a fibrous nature; photographs taken with the Roentgen rays clearly showed not only this but also the firm bony union and the metallic sutures embedded in the callus. Fractures of the patella were generally treated by operation. The question of operation was different in other fractures, as, for instance, in those of the lower end of the radius, a subject which had been specially studied by Dr. E. Gallois, whose treatise, "Étude Radiographique et Expérimentale," had greatly added to their knowledge of the subject. The treatment of fractures of the patella was almost always the same, but the case was different with fractures of the lower end of the radius, the treatment of which varied according to the nature of the fracture and the displacement of the fragments. Professor von Bergmann showed in a series of photographs taken in the surgical clinic of Berlin University the most important varieties of these fractures. Fractures of the tarsal and metatarsal bones were almost unrecognised before the discovery of radioscopy. The symptoms of these fractures were attributed to an inflammatory swelling of the foot or to a contusion, and they were treated by massage which increased the displacement of the bones. When the fracture was recognised and its position ascertained it must not be disturbed, but must be immobilised completely. Professor von Bergmann showed photographs of these fractures also.

*Treatment of Infected Wounds.*

Dr. OSCAR BLOCH (Copenhagen) argued that from a practical point of view every wound without exception ought to be considered to be infected and that infection and its complications were due to the retention of secretions containing microbes. Antisepsis and drainage ought therefore to be the rule and in order to avoid reinfection the wound ought to be dressed rationally. Carbolic acid was, he said, the best antiseptic, and the best applications were sterilised gauze dressings containing aqueous solutions of carbolic acid, and cotton wool. He had little confidence in internal antiseptic treatment, in febrifuge treatment, or in serum treatment, including the use of anti-streptococcic serum.

Dr. FELIX LEJARS (Paris) said that every accidental wound ought to be treated as an infected wound, even though no indications of such infection might be present. The treatment ought to consist in careful cleansing at as early a period as possible, assisted if need be by excision, care being taken not to impair the vitality of the cells which form the natural defence of the living tissues and which have to be assisted in their protective actions. Sterilised water, artificial serum, and sterilised or boiled compresses fulfilled all requirements under this head. Antiseptic solutions were injurious when concentrated, and when diluted to such an extent that they did not interfere with the protective cells their action was in reality only a mechanical and cleansing one. Suppurating wounds should be exposed to the air, cleansed, drained, and dressed with some absorbent material. In cases of infected wounds, whether suppurating or not, specific serum treatment was indicated, but their resources in this respect were unfortunately very limited; anti-tetanic serum was only a prophylactic; anti-streptococcic serum had been employed chiefly in puerperal infection and erysipelas. In some foul and gangrenous wounds oxygenated water was useful. In certain cases artificial serum treatment aided the natural resisting power of the organism, increased the blood-pressure, and promoted diuresis.

*Intestinal and Gastro-Intestinal Anastomoses.*

Dr. ROUX (Lausanne) said that intestinal anastomosis by lateral apposition was the most practicable of these procedures. Anastomosis was preferred in cases of numerous adhesions, of inoperable tumours, and of certain inaccessible inflammatory conditions, such as tubercle and actinomycosis. It was a preliminary operation in cases of operable tumours occurring in very feeble patients and in cases of pyostercoral fistulæ it was often quite successful. Gastro-enterostomy, on account of being less dangerous, preceded pylorectomy if the state of the patient rendered it desirable. In non-malignant disease of the pylorus and stomach, for which an easy evacuation of the gastric contents was required, gastro-enterostomy was preferable to pylorectomy and pyloroplasty. It was much superior to gastroplication and gastropexy. An ordinary sewing needle was the best instrument for suturing because it was only in this way that primary union of the mucous membrane could be obtained. Murphy's button was the best contrivance of its kind; it was reserved for the cases where it was necessary to count the minutes. In all these operations there was a surprising proportion of deaths from pneumonia.

Dr. SOULIGOUX (Paris) said that in the treatment of cancer and stricture of the bowel intestinal anastomosis was the most usual principal operation or it might be a complementary operation. In cases of acute or even of chronic obstruction of the bowel the formation of an artificial anus was to be preferred. When there was retardation of the onward movement of the fæces without obstruction, if there was a moveable tumour which could be easily removed enterectomy ought to be performed, but this operation ought to conclude with an anastomosis either latero-lateral or termino-lateral. If the tumour was adherent anastomosis was the only available operation. For cicatricial stenosis of the pylorus, or of the first portion of the duodenum, or for hour-glass contraction of the stomach gastro-enterectomy was the best operation.

## THE SURGICAL DISEASES OF INFANCY.

*Congenital Dislocation of the Hip.*

Professor HOFFA (Würzburg) read a paper upon Cutting Operations in Congenital Dislocation of the Hip. He pointed out that in cases of this deformity the operation without cutting was the one to be preferred. The cutting operation which was the best for children of from three years up to eight was that in which a new cavity was made for the head of the femur by the operation after the manner invented by Hoffa and Lorenz. This operation must be done neither too early nor too late. The best time for it was between the ages of three and eight years. That surgeon would succeed best who was able to carry out complete asepsis. The wound need not be stitched. The after-treatment was of the greatest importance as the muscles were thereby strengthened. Ankylosis did not occur except when the wound suppurated and when the operation was done at too advanced an age. Complete cure was more often obtained when the deformity was on the one side than when it was on both, and it might be said that by the Hoffa-Lorenz operation a cure was quite possible both in the anatomical and in the functional sense. There was no reason to fear any interference with the growth of the pelvis owing to the formation of the cavity in this operation. In cases of one-sided deformity in patients who had passed their eighth year osteotomy was the operation to be recommended.

Dr. ADOLPH LORENZ (Vienna) then read a paper upon the Bloodless Treatment of Congenital Diseases of the Hip-joint. This treatment, he said, was to be preferred to the operative, for the latter was not without its dangers (2 to 10 per cent. mortality according to different statistics). The ankyloses and contractures, which frequently followed, required a tedious after-treatment. The injury to, or the extirpation of, the Y-shaped cartilage of the acetabulum might result in subsequent deformity of the pelvis, on account of disturbances in development. Among the bloodless methods the treatment by means of portable apparatus could be said to be without limit; but, as a rule, without result, in spite of this fact. The gradual reduction of the head of the femur

by means of bed extension was only successful in very young children. The treatment was tedious and the confinement of active children in extension beds was detrimental to their general health. The bloodless reduction under narcosis overcame all the difficulties. Under the proper age limits it was entirely without danger. These limits were, for unilateral dislocations, the ninth or tenth year; for double dislocations, the seventh or eighth year. Ankyloses and contractures need not be feared. The bloodless reduction was performed either over the upper rim of the acetabulum by means of horizontal extension or over the posterior rim by means of vertical extension. This latter procedure was preferable, since the stronger development of the posterior rim allowed the success of the reduction to be more readily recognised. The typical reduction, over the posterior rim, was performed (without instruments) in the following manner. First, the tense adductor muscles were torn (subcutaneously) in forced abduction, by means of pressure and stretching (*myorhexis adductorum*). Secondly, the thigh, having been flexed to a right angle, was stretched vertically with the hands and adducted 90°, pressure being made at the same time upon the trochanter. The success of the reduction was manifested by positive physical and clinical signs, and could be verified by means of the radiograph. The principle of the after-treatment consisted in centering the weight of the body upon the base of the acetabulum, the base of the acetabulum resting upon the reduced head of the femur. From functional irritation the acetabulum became wider, and was deepened especially by the budding out of its upper rim. To keep the head of the femur within the acetabulum (retention), the thigh was (thirdly) fixed in extreme abduction and slight over-extension for a period of from four to five months. The extreme position was then replaced by a median position of the joint (slight flexion and lessened abduction), and the thigh was again rendered immobile for from four to five months. During this period of immobilisation the patient must be up and about as much as possible. The final treatment was carried out by means of massage and gymnastics, especially of the pelvi-trochanteric muscles, without the application of any mechanical supports. The examination with the radiograph showed that in many cases a complete anatomical restoration of the hip-joint and an ideal cure of the dislocation had been attained, inasmuch as the acetabulum had been concentrically widened and deepened under the pressure of the body weight. In another series of cases the acetabulum had been excentrically widened towards its upper extremity by the formation of a new bony upper rim. In still other cases the head of the femur could not be retained within the pan. The latter remained unchanged, an anterior superior dislocation resulting, so that the anterior crest of the ilium engaged the head of the femur. Up to the present the anatomical result had been good in about one-half of all cases. In the other half the result had been indifferent; but even in these cases where the anatomical result had miscarried, the functional result as regards endurance and symmetry in locomotion had been excellent and very much better than the result of the bloody reduction. The pathological lordosis of the double dislocation disappeared entirely. Had the bloodless reduction been unsuccessful the operative reduction by means of arthrotomy could then be performed, in which the acetabulum was left intact and the after-treatment carried out according to the principle of the bloodless method.

Dr. KIRMISSON (Paris) read a paper on the same subject. The principal point upon which he insisted was that the displacement should be reduced by means of an extension apparatus, and that the position thus obtained should be maintained by the use of an apparatus which should keep the limb in the same position as those employed in the treatment of ordinary hip disease.

Dr. BRADFORD (New York) read a paper on

*The Treatment of Pott's Disease when the Deformity has been Developed.*

The treatment of Pott's disease should consist, he thought, of such general measures as would promote normal metabolism and repair, and of measures to further the cicatrisation of the bony tissues involved in the tuberculous process by the protection of the affected parts from injurious pressure or jar. If a deformity had been established, its treatment presented for consideration (1) methods of connexion of the existing curve; (2) the arrest of any further development of the curve; and (3) the diminution of the progressive increase of the curve. The measures to be employed necessarily varied according to the pathological conditions as well as to the portion of the spinal column affected. The method of corrective treatment for the deformity depended upon the pathological condition of the diseased portion. Where the process was acute correction was easy; where it had existed a long time and cicatrising osteitis had been established much force was needed. Where bony ankylosis had taken place section or fracture of bone was necessary for correction. The best method of applying correcting force would naturally be that which caused the least waste of force and the least injury to the tissues. Traction under some conditions exerted force unnecessarily upon the secondary curves. In the cervical region traction was efficient. In the mid-dorsal region traction separated the diseased vertebræ, but force applied antero-posteriorly was equally, and sometimes more, efficient and exerted less strain on the unaffected parts. Corrective treatment, however, depended for its efficacy upon subsequently retaining the spine in proper position. This was necessary for a long period. The amount of correction to be aimed at depended also upon the amount of possible repair. The dangers of forcible correction, though not great if judgment were used, were not to be overlooked. On the other hand, correction with relief of pressure on the cord was often found beneficial when paraplegia was present In cases where much force was needed (fracturing bone previously affected by tuberculous osteitis) corrective methods demanding the use of considerable force were not to be recommended. Osteotomy of the kyphos was not advisable. In certain portions of the spinal column, and in certain pathological conditions, it was inadvisable to attempt the correction of the deformity. Where the deformity was not great, even in growing children, the curve could be held in check by a proper retention apparatus thoroughly employed. Plaster jackets applied to the patient in a straightened position (without an anæsthetic) or steel appliances adjusted to secure a like position carefully and constantly employed during the period of most rapid growth, formed a proper method of treatment and offered promise of success in checking an increase of the curve or even in diminishing it. Where, with a complete cure, osseous ankylosis had become established, or where a marked cervical or high dorsal curve had developed, it was undesirable to attempt correction. An arrest of the increase of the curve was sometimes difficult in the faulty growth of a distorted though not actively diseased spine or from the mechanical difficulty in securing requisite spinal fixation for a long period. In these cases treatment resulted in a diminution of the increase of the curve as the patient grew. This increase was often due to the development of compensatory curves, secondary to the kyphosis, but not directly occasioned by the tuberculous process, and could be diminished by mechanical treatment.

*The Therapeutic Indications in Appendicitis.*

Dr. ROUX (Lausanne) read a paper on this subject. He said the great thing to know was what one should not do. Purgatives should be absolutely forbidden throughout the whole course of the disease. Even during convalescence they should be replaced by enemata. The patient should not be moved if it could possibly be helped. Opium might be given or an injection of morphia. Ice might be applied to the seat of the disease; only caution must be used and warm applications should succeed the cold. As to the indications for operation, if the diagnosis was certain and if it was made within the first 24 or 36 hours, which very rarely happened, an operation at this stage was no more dangerous than an operation done *à froid*. After 36 hours—and this time had generally elapsed before any medical man and especially a surgeon had been called in—the operation of Dieulafoy might be carried out. Just as an operation would be quite justified if performed early, so it was uncertain in its results and often dangerous if performed during the intermediate period. But if the fever and the pain and the rapidity of the pulse persisted operation was justifiable. It was also justifiable when the fever became hectic and it was undoubtedly indicated if the patient had attacks of shivering or if the pulse kept very rapid while the temperature fell. By the surgeon attending to these rules it was possible that he might let a few patients die who were suffering from the septicæmic form but he would avoid killing a great number of others.

Dr. JALAGUIER (Paris) read a paper upon the same subject. He said that every appendix which was diseased ought to be

excised and the operation should be practised *à froid*—that was to say, when the general phenomena of infection had disappeared and when the local lesions had lost their activity. Too much hurry in operating exposed the patient to the risk of disturbing the favourable course of the disease, for the acute stage of appendicitis generally terminated by a localisation of the lesion and by its resolution when it was treated from the beginning by rest, careful diet, ice, and opium. Too hasty intervention was liable to give rise to another danger—that was to say, it was quite possible to operate upon the patient who had not got appendicitis but some of the diseases which simulated it. The only reason for intervention during the acute stage was to empty the abscess of its septic contents and to drain it very freely. In cases of very chronic appendicitis giving rise to frequent acute crises resection of the appendix was in most cases sufficient to effect a cure. In some cases, however, it would be found necessary not only to remove the appendix but to divide various bands, to free coils of intestine, or to resect portions of omentum which had become chronically inflamed.

## URINARY SURGERY.

### *Conservative Operations in Renal Retention of Urine.*

Dr. KÜSTER (Marbourg) opened the discussion on this subject. He said that renal retentions could be divided into two groups: (*a*) primary retention—i.e., cystic or sacculated kidney; and (*b*) secondary retention—i.e., suppurating kidney, of which he should say no more, as that condition almost invariably called for a radical operation. The term "sacculated hernia" was applied to all the instances of primary retention produced by any obstacle to the flow of urine, whatever be the contents of the sacs. As a general rule these obstacles were situated in the ureter and almost invariably in its upper third. Renal retention due to some obstacle in the renal pelvis should be treated by a conservative operation—i.e., the affected kidney should be preserved even if the other kidney was healthy. Conservative operations might be divided into four groups. (*a*) Fixation of a displaced kidney (nephropexy of Guyon). This simple operation must be combined with others, such as detachment of the ureter. (*b*) Formation of an anastomosis between (1) one part of the ureter and another, (2) the renal pelvis and the ureter, and (3) the renal pelvis and the bladder. All these operations should have for their end the avoidance of dead spaces, which were conducive to the formation of urinary calculi. Without this precaution the procedure was harmful. (*c*) Plastic operations with or without resection of the ureter. 1. Pyeloptychy (Israel). 2. Excision of valvular formations in the ureter and transverse suture (Fenger). 3. Resection of a kink in the ureter. Oblique resection was preferable to transverse, which might only lead to the formation of a fresh stenosis. 4. Uretero-pyelostomy (Trendelenburg and Küster). (*d*) Partial resection of the kidney. 1. Resection of the pelvis with suture (Albarran). 2. Wedge-shaped section of the renal substance in cases of hydronephrosis occurring in a horse-shoe kidney.

Dr. CHRISTIAN FENGER (Chicago) continued the discussion of the subject. Remittent or commencing retention (and all retention was, in its early stages, as a rule, remittent) was a condition in which they should always consider the possibility of saving kidney tissue by re-establishment of the free passage of the urine. The obstruction might be located in the calyces, in a branch of the ureter, in the bottom of the pelvis, or origin of the ureter, or in the ureter. Obstruction in the first two places caused a local or partial cysto-nephrosis and demanded for the relief of the condition bisection of the kidney from its convex surface and division of the partition walls. Stenosis at the exit of the ureter (valve-formation, oblique implantation from unilateral dilatation) required operations which varied in accordance with the absence or presence of stricture at the upper end of the ureter. If there was no stricture at the upper end of the ureter the valve-formation might be overcome by a trans-pelvic operation (Fenger, Mynter, Trendelenburg, Küster), or by extra-pelvic operation, which he preferred. If there was a stricture of the ureter at its exit from the pelvis, as might be expected in infected cases, they might resort to extra-pelvic plastic operation (Fenger), or to resection of the strictured end of the ureter, implantation of its upper divided end into the pelvis (Küster). If the stenosis or obstruction was located in the ureter it must be dealt with according to the laws laid down for surgery of the ureter—namely, resection and reimplantation, or Dr. Fenger's plastic operation. Were the results of these, so to speak, tentative conservative operations permanent, or did relapse eventually occur? In five of his cases no relapse occurred. The conditions were as follows:—1. Valve-formation; trans-pelvic operation; no relapse six years later. 2. Stricture at the upper end of the ureter; extra-pelvic operation; no relapse six years later. 3. Valve-formation of lower branch of the ureter; extra-pelvic operation; bisection of kidney, division of partition walls; no relapse after three years. 4. Excision of valve in the ureter by Dr. Fenger's plastic operation; no relapse after three years. 5. Stone in upper end of the ureter removed by Dr. Fenger. One year later a plastic operation on the ureter was performed by another surgeon. Six months later complete occlusion of the ureter at the site of the second operation was relieved by Dr. Fenger's plastic operation; no relapse after one year. In two cases relapse occurred under the following conditions:—1. Valve-formation without stricture, intra-pelvic operation, relapse of stenosis, occlusion of pelvic orifice; nephrectomy one year later. 2. Patient operated on by another surgeon, later by Dr. Fenger; operation was incomplete, failed, and nephrectomy was finally necessary.

M. BAZY (Paris) followed who said that renal retention was said to exist when the urine remained permanently in the renal pelvis or calices owing to some obstruction to its outflow. This obstacle might be situated in any part of the ureter, in the bladder, or in the urethra. To-day he should only consider the first named. Obstruction might be due to stricture, to a kink, or to a vicious insertion, or to a calculus. (The sites of these various obstructions were then considered.) Renal retention might be remittent, intermittent, or chronic, and, what was very important, septic or aseptic. Conservative operations were not indicated except when the kidney appeared capable of doing its work. But in a case where there was only one kidney a conservative operation was indicated whatever was the state of that kidney. Treatment would vary considerably according to the circumstance of the case. Calculi might be removed; kinks sometimes got well spontaneously or might be removed by nephropexy. Abnormal insertions were amenable to treatment by plastic operations. Strictures could be in exceptional cases dilated or got rid of by an anaplastic operation. Such operations might be performed by the transperitoneal route in aseptic cases or by the lumbar route in septic cases. Transplantations of the ureter into the bladder should be done by the abdominal route. Operations by the vaginal route should not be done. Infection of the ureter or renal pelvis was no contra-indication, but renal abscess contra-indicated any anaplastic operation.—Dr. LEGUEU (Paris), Dr. KUMMEL (Hamburg), Dr. D'ANTONA (Naples), Dr. NANU (Bucharest), and Dr. CASPER (Berlin) joined the three previous speakers in a debate.

### *The Value of Surgical Interference in Tuberculous Affections of the Bladder.*

Dr. SAXTORPH (Copenhagen) made the first contribution at the Congress to this subject. He said that the question of surgical intervention in tuberculous disease of the bladder must be answered by a reference to the origin of the infection and its extent. Miliary tuberculosis of the bladder—if, indeed, it existed—was only a part of a general tuberculosis, was not amenable to surgical treatment, and would therefore not be considered here. Vesical tuberculosis almost always arose from an old pulmonary tuberculous focus—sometimes from a very old one. The vesical infection occurred in two ways: (1) the tubercle bacilli were carried by the blood-stream to the kidney, whence they were transmitted to the bladder and infected its mucous membrane (descending infection); and (2) the bacilli were carried in the blood-stream to the prostate, the vesiculæ seminales, the testicle, or the epididymis, whence they infected the vesical wall by contiguity (ascending infection). The bladder was apparently very resistant to the infection of tubercle and was hardly ever infected primarily by the blood-stream (hæmatogenic infection). Vesical tuberculosis, then, being always of a secondary nature there was no radical treatment except removal of the source of infection by nephrectomy and more or less total resection of the ureter or by destruction of the tuberculous foci in the genital organs. If this mode of treatment could not be carried out any attempt at radical treatment of vesical tuberculosis would be found to be as useless as attempting to divide water into pieces with a knife.

The infection centre having been removed vesical tuberculosis might either undergo spontaneous cure or might be treated surgically. Surgical treatment, whether in the male or in the female, should always be undertaken by the abdominal route. The bladder being opened the diseased mucous membrane might be removed by scissors, cautery, or curetting. The patient should be in Trendelenburg's position and the bladder sutured or drained according to circumstances. After-treatment, both general and local, was indispensable. All surgical treatment should be undertaken as soon as possible after the diagnosis had been made certain by the discovery of bacilli in the urine. If the infection centre could not be removed palliative treatment might be undertaken for the relief of pain. Thus the bladder might be opened by the abdominal route and the most diseased patches scraped. Drainage must be employed. It might be opened by the perineal route in the male and scraped and drained. In the female the bladder might be curetted through the urethra. The bladder might be washed out with a view to avoiding cystitis. The general health must be attended to.

Dr. HOGGE (Liège) followed with a paper upon the Surgical Treatment of Tuberculosis of the Urethra, Prostate, Testicles, and Vesiculæ Seminales. After discussing medicated topical applications he passed on to consider cutting operations for tubercle of the prostate. These operations, he said, had given good and lasting results in the hands of Guyon, Albarran, Zuckerkandel, and others. In tuberculosis of the testicle and epididymis total castration would appear to be from a study of the published results an operation only to be done exceptionally. The method of election was a conservative one consisting in resections. To sum up the matter, when the tuberculosis affected the prostate, the vas deferens, the vesiculæ seminales, the epididymis, or the testicle, an operation should be the rule when an abscess or fistula was present with or without fungation. The particular operation to be undertaken varied with the predilection of the surgeon, but some operation should certainly be done, as operation had a greater curative effect and was less risky for the patient than waiting and a purely medical treatment. Another element of doubt was the best stage of the disease at which to operate. Some surgeons counsel early operation in the initial phases of the disease, while others—and those the greater number—advised an expectant treatment. With regard to the extent of the operation, recent results of operations in which the disease was very widely removed would seem to show that for the future surgeons would be well advised to adopt free extirpation.

*The Value of Surgical Intervention in Renal Tuberculosis.*

Dr. POUSSON (Bordeaux) read a paper upon this subject. He said that surgical intervention for tuberculous disease of the kidney had hardly been in practice for more than 15 years, but operations multiplied so rapidly that from 1892 to 1895 he had been able to record an imposing series of statistics to which he had been able to add details of 161 cases collected in view of this paper.

I. *General results.*—(*a*) Immediate results. In 600 cases the mortality was 22·33 per cent. In the 161 cases which he had recently collected the mortality fell to 11·68 and in the practice of some surgeons it had further dropped to 8·95 per cent. (*b*) The operative mortality respectively of nephrotomy and nephrectomy was, taking all the cases together, nearly equal—namely, 20·8 per cent., as against 21·47 per cent. In the personal statistics of certain surgeons, however, incision of the kidney was more deadly than its extirpation in the proportion of 18·51 per cent. to 6·54 per cent. (*c*) The causes of death after either operation were suppression or deficiency of the urinary secretion. This occurred in 51 deaths out of 128. Other causes of death were shock, peritonitis, and injuries to other viscera or important vessels. Secondary results.—Of 63 cases operated upon by nephrotomy 39 died in the following year from progressive tuberculosis or other causes due to incomplete operation, and 24 were alive, of whom some were known to be living after the lapse of three, five, and even 10 years. All these patients, however, had lumbar fistulæ. Of 335 patients operated upon by nephrectomy 42 died within the year from diffuse tuberculosis and 295 others were living as follows: at the end of one year 33, from two to three years 41, at the end of five years four, at the end of six years seven, at the end of eight years two, and seven out of 105 had a fistula.

II. *Results in the different forms and clinical circumstances of the disease.*—Indications and contra-indications. (*a*) Of 10 patients operated upon for pain or hæmorrhage in the purely bacillary stage none died. The patients lived for a long time afterwards and preserved an actively working urinary apparatus. Intervention, then, having for its aim the removal of a quiet bacillary focus was undoubtedly legitimate. (*b*) In mixed infections the results were not so good. (*c*) Bilateral cases of lesion might be operated upon except when the other kidney showed very definite bacillary infection. A slight nephritis was no bar to either nephrotomy or nephrectomy. (*d*) As to the bladder the reflex pains of this organ often disappeared after operation. (*e*) The condition of the lungs and other organs and the age and sex of the patient have the same bearing upon these operations as upon any other.

III. *Results following upon different methods of operation.*—Choice of methods. (*a*) Nephrotomy should not be employed in the nodular or miliary form of tuberculosis. In the hydronephrotic form it should be always employed. So far it had been almost exclusively employed in the pyelonephrotic form, but, as a rule, only gave temporary results and even when most successful was followed by a fistula. (*b*) Primary nephrectomy was the operation of election; its mortality was only 21·79 per cent., whereas that of secondary nephrectomy was 30·76 per cent. The latter operation was, however, of considerable service. (*c*) With regard to the relative merits of the extra peritoneal and trans-peritoneal routes the former with a mortality of 21·2 was far preferable to the latter with a mortality of 34·04. (*d*) Partial nephrectomy should be altogether discarded.

*The Remote Effects of Operative Treatment in Hypertrophy of the Prostate.*

Professor A. VON FRISCH (Vienna) read a paper upon this subject. He said that of all the various operations for hypertrophy of the prostate only those which had for their object the complete removal of that portion of the prostate which prevented the free flow of urine offered any chance of lasting success. Such were subpubic and perineal prostatectomy, lateral prostatectomy, and Bottini's operation. The effects of all these were the more lasting in proportion as the passage was freed and remained free from cicatrisation. Operations done under the eye evidently answered best to these conditions, and such were the different prostatectomies. But they were always serious undertakings on account of the age and general feebleness of the patients in whom they were required. Bottini's operation was less dangerous, but not so free from risk as some would have them believe. Both classes of operation gave good and lasting results, even where the bladder was dilated and its muscular wall was apparently partly paralysed; a good result will follow if the obstruction be completely removed. However, no precise line of conduct could be laid down so as to assure success. The lasting effect of all these operations might be discounted by the formation of the new scar tissue or by a new hypertrophy of the gland.

Dr. F. LEGUEU (Paris) followed with a paper on the same subject. He said that there were three classes of operations for this condition: (1) operations on the testicles; (2) cystotomy; and (3) prostatectomy. 1. Of these, operations on the testicles sought to bring about atrophy of the prostate. In lieu of castration, which was considered by some to be too severe, division of the vas deferens or section of the vessels and nerves of the cord had been proposed. But all these were inferior in value to castration. As regards the remote results of double castration they were not so good as the early observations which did not take a long enough space of time into consideration would have had them believe. The prostate certainly shrunk but the patient improved to a far greater degree than could be accounted for by the diminution observed. The attacks of pain were less frequent and the contractility of the bladder improved so that the residual urine was less in quantity. But, after all, there was only amelioration and not permanent cure and comparing the results of castration with those of other methods it was doubtful whether the advantages of it were worth the sacrifice. 2. Cystotomy sought to make a meatus above the pubes. It doomed the patient, however, to incontinence of urine and the bladder could never empty itself completely. 3. Direct interference with the prostate appeared to be more and more the operation for the condition of hypertrophy. Bottini's operation could not yet be fairly judged from the point of remote results. Besides it was done in the dark and patients often relapsed owing to the new passage closing up again. Partial prostatectomy gave excellent

results in partial hypertrophy, but was of no use where the prostate was uniformly enlarged. Total prostatectomy could give very good results and apparently if undertaken by the perineal route at an early enough date before grave complications had set in seemed to be the operation of election for hypertrophy.

*The Remote Effects of Structural Lesions in Urethral Stricture.*

Mr. REGINALD HARRISON (London) read the first paper on this subject.[1] He summed up the conclusions to be drawn from his paper as follows. 1. That there was evidence to show that in peri-urethral strictures of the deep urethra the effects of divulsion as practised in Perrève's and Holt's operations might be limited to rupturing the dense stricture bands in the submucosa of the urethra, whilst the mucous membrane itself might escape any serious injury or laceration and was merely restored by stretching to its original dimensions. Here a permanent cure might result. On the other hand, where the mucous membrane was in itself the seat of stricture and formed part of the latter structurally, it was necessarily much torn or lacerated by the process of a sudden divulsion and the pathological condition consequently became assimilated with that of traumatisms of the urethra from external violence accidentally applied, which were followed by strictures of the most contractile and recurrent form. 2. That there was evidence to indicate that where the entire thickness of a stricture could be included within an incision of moderate dimensions made by an internal urethrotome the normal calibre of the urethra might be completely and permanently restored. Where this happened it might be concluded that all the fibres of contraction constituting the stricture were divided at the time of operation. And further that the converse was equally true. There was also evidence to show that the absence of recurrence under such circumstances was not necessarily dependent on the use of a bougie, though the latter was a precautionary measure which should invariably be advised. 3. That in the case of multiple strictures or strictures of the deep urethra of considerable dimensions either in their length or thickness treated by an internal incision of corresponding proportions, apart from other considerations, the tendency to reconstruction and recurrence with an additional amount of cicatricial material was frequent, the latter being probably due to the circumstances under which healing takes place in wounds of these dimensions so situated. 4. That lesions of the urethra demonstrated in various ways the poisonous effects that unprotected and confined urine was capable of exercising both on the body generally and on the tissues in constant contact with it, and that the liability to such effects was greatly diminished where drainage rendered these conditions of the urine impossible. 5. That in the case of recurring strictures previously treated by incision and in primary strictures of such length or extent as to require an internal section of a corresponding size, or as to which there might be doubt as to whether it would be safely possible so to include them, that for the purpose of the operation and its results such wounds should be made with due regard to other surgical principles than the one pertaining to the division of the contraction. 6. That there was direct evidence to show that the tendency to recontraction and recurrence of stricture after internal urethrotomy was largely diminished by the concurrent employment of systematic and thoroughly efficient urine-drainage, such as the combination of external urethrotomy, or perineal puncture, affords.

Dr. HERESCO (Bucharest) followed with a paper on the same subject. He said that they had to-day to consider the remote effects of internal urethrotomy, of external urethrotomy, and of resection of the urethra. Of these, internal urethrotomy was specially practised in cases of gonorrhœal stricture. Recent researches had shown that gonorrhœal stricture was really due to a sclerosis more or less complete and so simple section could not bring about a definite cure. Experiments upon animals agreed with clinical observations in man that if dilatation did not follow section of stricture cicatrisation was bound to follow. Dilatation was therefore the indispensable complement to internal urethrotomy. Internal urethrotomy, whether the incisions be superficial or deep, was bound to relapse. The date of this relapse varied according as dilatation was regularly kept up or not. He had known it occur five weeks after operation. In another patient it occurred at an interval of four months, in another at six months, and in others at one, two, and three years respectively. It had been known to occur after 30 years. External urethrotomy was practised in cases of so-called impermeable stricture, or where the stricture was complicated with fistulæ. Dilatation was indispensable, as in the case of internal urethrotomy. Relapse, however, was bound to occur, although Post, Van Buren, and Sayre have reported cases of cure lasting from 20 to 25 years after operation. Resection of the ureter was only feasible in cases of traumatic stricture. The essential condition for success was that there should be no suppuration. He would sum up his conclusions as follows. No cutting operation could bring about a lasting cure of stricture except resection of the urethra in certain conditions. Internal urethrotomy for gonorrheal stricture brought about no permanent result, it merely facilitated dilatation. Without dilatation the stricture would certainly relapse. The date of this relapse was uncertain, it might occur at any time from a few weeks to 12 years, and depended on the nature of the stricture and the regularity of the dilatation. External urethrotomy was open to the same objections as internal. But when the perineum was full of fistulæ and indurations external urethrotomy presented many advantages over the internal operation. Resection of the ureter under certain conditions brought about a permanent cure, but such conditions were rarely found. All cutting operations should be followed by persevering dilatation.

Dr. ALBARRAN (Paris) followed on the same subject. His paper may be shortly summed up as follows. In non-complicated inflammatory strictures the following methods were employed: electrolysis, dilatation, internal and external urethrotomy, resection, and autoplastic operations. Of these slow electrolysis gave better results than the rapid method, but there were not enough reported cases at present upon which to found a definite opinion as to remote results. Progressive dilatation gave good results, but had to be followed by the use of the dilating catheter. Internal urethrotomy could only be considered as the first step of dilatation. External urethrotomy was of use only in strictures of limited extent and must be followed by dilatation. Resection of the urethra in limited inflammatory strictures of the perineal region gave good results. If the stricture could be completely excised a permanent cure might be hoped for. Resection of the penile urethra might lead to curving of the penis. In inflammatory stricture complicated with fistulæ and tumours external urethrotomy should be performed. In traumatic stricture the operation of election was resection.

## IV.—OBSTETRICS AND GYNÆCOLOGY.

### OBSTETRICS.

*Etiology and Nature of Puerperal Septicæmia.*

Dr. DOLÉRIS (Paris) read a paper on this subject. The genius of Pasteur, he said, had determined the microbic nature of puerperal septicæmia. They owed to him their notion of the existence, the virulence, and the contagiousness of puerperal pathogenic bacteria. The ordinary pathogenic germs found in puerperal septicæmia were the streptococcus, staphylococcus, gonococcus, and bacillus coli communis. Researches had shown that amongst the pathogenic organisms certain anaerobic forms, such as the bacillus putridus, must be included. A further conclusion was that some saprophytic anaerobic organisms could develop and act as true pathogenic germs, notably in cases of placental retention. The association of different species led more certainly to infection. The septicæmic condition caused death from toxic poisoning, which produced either nervous inhibition or intestinal paralysis. The staphylococcus might cause death by visceral metastases. The theory of autogenesis had recently received a new interpretation, according to which the pathogenic organisms existing in the pathological vaginal secretions should not be considered as saprophytic, and since autogenetic infection could not be distinguished from that due to saprophytic organisms this amounts to denying its existence.

Speaking on the same subject Drs. MENGE and KRÖNIG (Leipsic) understood puerperal fever as a malady of the puerperium in which pathogenic organisms infected the body as a whole. Fever might be entirely absent. They were unable to distinguish between the organisms which acted purely by their toxic properties and those which penetrated the tissues, nor could they distinguish with certainty between

[1] The paper is published in full on p. 391.

a fever due to one or the other. The organisms causing puerperal fever were: streptococcus pyogenes puerperalis, staphylococcus, gonococcus, bacillus coli communis, bacillus diphtheriæ, diplococcus pneumoniæ, and certain imperfectly known organisms developing in the absence of oxygen, since they found them in puerperal lesions. The infection could be either autogenetic or heterogenetic. Gonorrhœal puerperal fever was to be regarded as due to the spread of an infectious process already existing in the body, not as an example of autogenesis. As the various organisms mentioned did not exist as saprophytes in the vaginal secretions of pregnant women an autogenetic infection by these organisms could not have as its seat of origin the vaginal secretion. Infection with anaerobic bacteria could not be denied since they were unable to distinguish with certainty between the anaerobic organisms causing puerperal fever and the anaerobic saprophytic organisms present in the vaginal secretion of pregnant women. Clinically they regarded as rare and of favourable prognosis an infection due to pathogenic organisms of saprophytic character derived from the skin of the external genitalia. The possibility of a puerperal infection being caused by organisms present as saprophytes in the cervical canal, the cavity of the uterus, or the tubes could be rejected since these cavities never contained such organisms. With regard to heterogenetic infection the number of germs present undoubtedly was a matter of importance. The difficulty in attempting to determine the varying degrees of virulence of different organisms was very great. They could only say that when an organism had lived a saprophytic existence for some time that its virulence was greatly diminished. Insufficient hæmostasis and marked lesions of the genital tract played an important part as predisposing factors. The primary seat of infection was most commonly the placental site or the endometrium; much less commonly the cervix, vagina, or perineum. The streptococcus had a great tendency to spread beyond the primary seat of infection either by the lymphatics or blood-vessels, while the staphylococcus often remained limited to the endometrium.

*The Treatment of the Apparent Death of the Newly-born.*

Dr. RIBEMONT-DESSAIGNES (Paris) read a paper on this subject. As a result, he said, of numerous causes which might occur during its birth the child might when born present the appearance of apparent death. Two varieties of asphyxia occurred, the blue and the white, while at times cases were met with in which both forms were present at the same time. Since in practice asphyxia was most commonly due to obstruction of the air passages by mucus or amniotic fluid charged with meconium it was necessary to (1) free the air passages, and (2) to facilitate the entrance of air into the lungs. As the mucus frequently only occupied the throat it was often sufficient to clear it out by means of the finger wrapped in a handkerchief. Cutaneous friction with or without alcohol, ether, brandy, eau de Cologne, warm baths, mustard baths, hot or cold baths, were often sufficient to excite respiratory movements. Rhythmical traction on the tongue might set up the respiratory reflex. If these procedures failed it was necessary to commence artificial respiration. Of the various methods available insufflation was the only one that fulfilled the two conditions necessary—viz., to clear the air passages and to facilitate the entrance of air. And, further, the insufflation should be instrumental. The apparatus employed should admit of aspiration of the foreign matters present, and it should not carry into the lungs a quantity of air greater than their capacity. To fulfil these conditions the instrument must be constructed upon anatomical principles. The insufflator formed upon the model introduced by him in 1877 fulfilled the necessary conditions. (1) Its introduction was easy owing to its curve and the shape of its end; (2) its curve assured its remaining in the air passages; (3) it prevented the reflux of air from the larynx; (4) it readily permitted of the aspiration of the fluid and mucus filling the bronchial canals; (5) it was easy to determine whether it was in its right position or not; and (6) the bulb attached permitted only of a quantity of air entering sufficient to distend the lungs without over-distending them.

*Definition of a Still-birth.*

Dr. F. H. CHAMPNEYS (London) in the next paper gave a definition of "still-birth" and divided the two stages of asphyxia into "apoplectic" and "pale, the worst cases being common when the head came last and therefore not being due to pressure on the head. Asphyxia he defined as an exaggeration of physiological "air-hunger" or "necessity for breathing," and after discussing its mode of production and the causes and consequences of premature inspiratory efforts he narrated some remarkable instances of survival of apparently dead children. The objects of artificial respiration he described as (1) removal of foreign bodies from the air-passages; (2) procuring the patency of the air-passages; (3) excitation of the circulation; and (4) ventilation of the lungs. With regard to ventilation of the lungs he considered only two methods of manipulation efficient—namely, that of Schultze and that of Silvester. The method of Silvester produced unnatural superior costal respiration and was the more powerful. The methods of Marshall Hall and Howard he considered useless for children.

Dr. SCHULTZE (Jena) also read a report on this subject. Asphyxia, he said, of newly-born children was the result of some interference with the placental circulation during the course of labour. It was therefore a species of suffocation. Treatment consisted in putting into action as soon as possible—and this was most important—pulmonary respiration. The venous condition of the blood was in a child born asphyxiated already beyond the normal; it no longer acted as a stimulus to the medulla. The spinal cord could, however, still react to other forms of irritation. One of the best of these was the application of cold. When the condition of asphyxia was still further marked the medulla no longer reacted. It was necessary then to restore its excitability. This result could best be obtained by establishing the pulmonary changes and by stimulating the circulation. By the insufflation of air it was possible to set up normal respiration but this did not improve the circulation. The best methods were those which acting upon the thoracic parietes provoked within the thorax regular variations in the atmospheric pressure. Such methods were those of Silvester, Marshall Hall, or his own method of swinging the infant. His rules for the treatment of such cases were as follows: 1. If the child was blue leave the cord uncut, clear out the mouth, and excite the cutaneous reflexes. If this prove insufficient cut the cord and plunge the infant alternately into cold and then hot water. 2. If the child be pale and flaccid cut the cord, clear out the mouth, and then proceed to artificial respiration. Commence by a forced movement of expiration. There was no better method of clearing the air passages. Repeat the movements of expiration and inspiration from eight to 10 times a minute and then place the child in a hot bath. The artificial respiration might then be repeated if necessary. If natural respiration be established but remain superficial plunge the child into cold water. A child born asphyxiated should not be considered as completely re-animated until it cried continuously and vigorously.

## GYNÆCOLOGY.

*The Treatment of Cancer of the Uterus.*

Dr. RICHELOT (Paris) read a paper upon this subject. Total extirpation of the uterus by the vagina was, he said, a rational method, because it enabled them to deal completely with the disease and to get entirely beyond its limits. It was a relatively benign operation, the mortality of the reporter amounting to about 6 per cent. It was an efficacious operation. Ott had had cures extending over 12, 11, 10, eight, and six years; Landau after nine and a half, eight, seven, six, five, and four years; Ledentu and Pozzi after six years; Quénu, Terrier and Hartmann, and Routier after five years. The speaker had had cases alive 12½, 12, 10, nine, eight, six, four, and three years after operation. Making all allowances he was able to show at least 18 per 100 who had been definitely cured. The improvement that had occurred in technique had lead to a revival of the operation of abdominal hysterectomy. Equally to be condemned were those surgeons who advocated extensive operations of this kind both for cases of cancer where the disease had spread beyond the uterus and those who recommended them in cases where the disease was still limited to that organ, with the proviso that in either case such an operation enabled them either to remove all the affected tissue or to make sure of being well beyond the limits of the disease. No true comparison could be made between cancer of the breast and cancer of the uterus and it was impossible even by such an operation as abdominal hysterectomy to make sure of removing all the affected tissues. Cancer was primarily local and secondarily infective. A microbic origin for the disease was as yet unproved. Personally he was led to consider cancer as a trophic lesion independent of external causes. One proof amongst others

was heredity and another the relation between cancer and arthritic troubles. A hundred times he had seen cancer and arthritic troubles transmitted, coinciding or alternating in such a fashion as to convince him as to the pathological family in which they should be placed. And it was the mysterious action of the economy which determined the degree of cellular anarchy, modified its evolution, and settled its prognosis, which enabled them to see things as they really were. It was that which enabled them to combat the evil but at the same time traced out well-defined limits, which ensured their success or their failure. One knew how remarkably variable was the course of a cancer of the uterus. Another remarkable fact was the well-known better prognosis in the case of a cancer of the body of the uterus. In brief, it might be said that a cancer of the uterus passed through two periods, while it still remained limited to the uterus, and when it had passed beyond its limits, and that the duration of these two periods was influenced by some unknown condition, possibly some "morbid temperament." What, then, should be their aim? Undoubtedly to operate at a time when no cancerous cell had progressed beyond the limits of the uterus. If they succeeded in doing this and in removing all the morbid growth then they might well speak of a definite cure, and they might even neglect the predisposition of the organism to reproduce another cancer. The proper treatment of cancer at the present day was to anticipate its spread and not to attempt to overtake such spread once it had begun. And, indeed, the organism itself came to their assistance. Intervention was not always without avail even when it appeared to be a little late. Such cases were difficult to recognise. It was justifiable, however, to adopt the abdominal operation in the presence of a limited spread of the cancer to the vaginal wall, rendering a vaginal operation impossible, but not indicating any real diffusion of the cancer. The operation was also justifiable in the presence of a tumour of slow growth the course of which they had been able to follow for some time. In such cases he had adopted abdominal hysterectomy without regarding it as a sovereign remedy and duly recognising its limitations. He had endeavoured to show that vaginal hysterectomy was capable of obtaining definite cures and that abdominal hysterectomy was a useful resource in a small number of cases, but that applied to cancers which had already become diffused it was an imprudence, and to cancers still very limited an illusion. That was to say, he differed from those who saw in the first an operation always incomplete, merely palliative, and in the second, the only operation which removed all, the only operation which was logical and rational. He would say that that operation was truly curative which preceded the cancerous infiltration—that which pretended to pursue it was really merely palliative.

Dr. DMITRI DE OTT (St. Petersburg) came to the following conclusions on the same subject:—1. Surgical treatment was the only successful method of combating cancer of the uterus. 2. The peculiar functions and structure of the uterus required a special study of the cancers that attacked it. Conclusions drawn from cancer in other parts of the body were only applicable in certain special cases. 3 Total extirpation of the uterus should be practised in all cases of cancer of any part of the organ, since the procedure gave the greatest amount of success. Removal of the ovaries and appendages should only be practised under special conditions. Removal of the retro-peritoneal glands could only be carried out by the abdominal route. This method should not be practised as a rule since it was much more dangerous and the results were not sufficiently good. Total extirpation by the vagina was to be preferred to all other methods. Morcellement in the cases where the uterus was of large size or the case complicated by the presence of fibroids was a method of great value. In cases of pregnancy complicating cancer of the uterus vaginal extirpation should still be carried out. The operation could be practised up to the seventh month and after opening the *cul-de-sacs* and ligaturing the uterine arteries the size of the organ could be readily reduced by the removal of the ovum. If the pregnancy was still further advanced and the child viable the latter might be delivered by abdominal section and the uterus, if practicable, removed by the vagina. It was best not to close the peritoneal opening but to lightly plug it with iodoform gauze. The ultimate results of operation undertaken for cancer of the body were much better than those undertaken for cancer of the cervix. Total extirpation should be practised even in advanced cases, since it tended to alleviate the condition of the patient, and especially in view of the difficulty of making an exact diagnosis of the extent of the disease. The mortality of the operation should not exceed 2 per cent. and the proportion cured with no sign of recurrence after six years was 10 per cent., extirpation having been practised even in the most advanced cases.

Dr. THOMAS S. CULLEN (Baltimore) then briefly referred to the gradual improvement in the operation for carcinoma of the uterus, commencing with amputation of the cervix as practised by Schroeder and his contemporaries, abdominal hysterectomy as recommended by Freund, the catheterisation of the ureters as employed by Pawlick and Kelly, and the more radical operation consisting in the removal of the iliac glands as advocated by Ries, Rumpf, and Clark. He then pointed out the danger of implanting carcinomatous into healthy tissue, as was very likely to occur when the radical operation was performed. He described in detail the operation as performed by Werder of Pittsburgh. In this operation the chances of implanting carcinomatous tissue were reduced to a minimum. The various stages in the abdominal operation, where the cancer was limited to the cervix, he described as follows: (1) removal of broken-down carcinomatous cervical tissue, preferably a few days before; (2) insertion of ureteral bougies if desired; (3) ligation of the ovarian vessels and round ligaments; (4) freeing of the bladder from the uterus and broad ligaments; (5) opening of broad ligaments and freeing of the ureters to the points at which they enter the bladder; (6) ligation of the uterine vessels near their points of origin; (7) and (8) dissection of bladder free from vagina and rectum; (9) removal of pelvic lymph glands; (10) freeing of vaginal fornices; (11) closure of pelvic cavity by uniting the vesical peritoneum with that of the rectum, an assistant meanwhile making strong traction on the cervix from below; (12) closure of the abdomen; (13) ringing of the vaginal vault with a thermo-cautery or knife, thus freeing the uterus and its surrounding vaginal mucosa; and (14) application of a light gauze pack to the space left in the vaginal vault. Thus the uterus was freed on all sides, the vagina dissected loose from the bladder and rectum, and the pelvic and abdominal cavities closed before the operator came in contact with the carcinomatous cervix. Even then there was little or no danger of transplantation of carcinomatous tissue. The speaker then briefly analysed 176 cases of carcinoma of the uterus occurring in the Johns Hopkins Hospital during the last six years.

### *Cervical Metritis.*

Dr. S. POZZI (Paris) read a paper introducing this subject. His conclusions were as follows:—1. Acute or chronic inflammation of the cervix could exist for a long time isolated and without invading the body of the uterus. 2. At times the acute lesions of the cervical mucous membranes readily invaded the mucous membrane of the body, and the chronic lesions of the cervical parenchyma of inflammatory origin (sclerotic or sclero-cystic degeneration, partial or total) in a short time produced some effect upon the nutrition and the anatomical condition of the body of the uterus. 3. The operation of trachelorrhaphy was inferior to biconical resection of the cervix and should be abandoned. 4. A large number of acute, subacute, or chronic inflammations of the cervical mucous membrane in nulliparæ were due to insufficiency of size of the external os uteri and the difficulty of drainage that resulted. The most important part of the treatment consisted in restoring by operation to a sufficient extent the patency of the external os.

Dr. DOEDERLEIN (Tübingen) followed, saying that at the present day the causes of the inflammatory diseases of the cervical canal and of the cavity of the body of the uterus were to be found in a microbic infection. Modern bacteriological researches had shown that the external os uteri formed a boundary between a lower part of the genital tract containing micro-organisms and an upper containing none. The alkaline cervical mucus proved destructive to organisms introduced from without and so formed a protection not only to the cervix but to the body of the uterus, the tubes, and the peritoneal cavity. Amongst pathogenic organisms the only two that played any important part in the production of cervical metritis were the gonococcus and the tubercle bacillus. Gonorrhœal infection of the cervix was very common, the means of defence of the cervix being unavailing against the gonococcus, but tuberculous infection limited to the part was very rare. Tuberculous, syphilitic, and diphtheritic lesions of the cervix were quite different from so-called cervical metritis. Tuberculosis

of the cervix played an important part in the production of cervical metritis. The mucous membrane of the cervical canal was disposed to hyperplasia, the formation of polypi, and to inflammatory induration or erosions. The mucous membrane of the vaginal portion was disposed to changes in the epithelium, that was to say, to papillary and follicular erosions. The etiology of cervical metritis demanded further study both from the bacteriological or clinical point of view.

Dr. MENDES DE LEON (Amsterdam), speaking on the same subject, said that the pathological lesions of the neck of the uterus, which were known as cervical metritis, were difficult to separate clinically from chronic inflammation of the body of the uterus and especially from chronic inflammation of the mucosa. One might distinguish two varieties, the form due to bacteria and that not due to bacteria. In view of the great difficulty in determining the etiology of the chronic form it was best to distinguish them by their clinical signs, and to speak of a catarrhal endometritis or of a pseudo-endometritis, the catarrhal form being characterised by the presence of leucocytes in the stroma, and the pseudo-endometritic form by an abundant glandular proliferation and augmentation of the stroma. It was only in the gonorrhœal and septic inflammations that one saw the inflammatory process penetrating into the substance of the uterus and so leading to a true metritis. In the etiology of non-infectious conditions of the endometrium hyperæmia of long duration played a most important part. With regard to the septic and specific inflammations of the uterus their origin was to be found in the presence of organisms of various kinds which had found their way into the uterus either during the puerperium or through some lesion the result of an operation, or even in the case of certain specific organisms through the intact mucous membrane. With regard to the question as to whether a cervical metritis could remain limited to the cervix or not there was some divergence of opinion. In 100 cases examined with Dr. Van Tussenbroek he found only nine cases of simple cervical catarrh. On the other hand, he found 55 cases of catarrh of the body, of which 39 were circumscribed and 16 combined with cervical catarrh. It was difficult to demonstrate or to exclude the presence of any affection of the body. In the absence of erosions and when there existed a more or less abundant mucous or purulent secretion it was almost certain that they had to do with a catarrh of the body. Athough as regards etiology, &c., the two conditions were to be considered separately, it was not so with the treatment. Here, since the mucous membrane of the body was usually also affected, the common form of treatment was curettage. Amputations of the cervix alone appeared irrational, since this could have no effect upon any accompanying condition of the body of the uterus. In conclusion, he might say that it was necessary neither to consider nor to treat cervical metritis as an isolated affection, since in the great majority of cases it was accompanied by a similar condition of the body of the uterus. The term "cervical metritis" should be replaced by that of "cervical endometritis," since the inflammation of the mucous membrane was rarely accompanied by any lesion of the deeper tissues.

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## V.—STATE AND MILITARY MEDICINE AND SURGERY.

### MILITARY MEDICINE AND SURGERY.

*Lesions Produced on Man by Projectiles of Reduced Calibre.*

Dr. L. A. LAGARDE (New York) read a paper in which he referred to the early history of reduced calibre rifles, the experimental evidence upon animate and inanimate objects by the surgeons of the different Governments while contemplating a change of armaments, and the general conclusions based thereon. He noted the results of gunshot wounds by the projectile of the 7-millimetre Mauser rifle in the Santiago campaign; and from such data as the office of the Surgeon-General of the United States Army was able to furnish, he discussed the stopping power, explosive effects, bone lesions, and injuries to the viscera occurring in this campaign.

Surgeon-Major VINCENT, *professeur agrégé* at Val-de-Grâce, read a paper upon

*The Etiology and Prophylaxis of Typhoid Fever in Armies in the Field.*

Typhoid fever, he said, was a necessary companion of every war and was far more deadly than was the fire of the enemy. The causes which brought it about were the same as in time of peace, but during the progress of a campaign the influence of these causes was very much greater. The predisposing causes were the average age of the soldier; the time of year chosen for military operations—summer or autumn; imperfect feeding and the digestive troubles which resulted therefrom; the inevitable deficiencies as to hygienic conditions as regards both the soldier's body and his clothes; a hot climate, as is the case in colonial wars; the shutting up of troops in camps or besieged towns; a very prolonged war, and the demoralisation of an army when conquered. Overwork was also a most potent factor. The immediate cause was the ubiquitous bacillus typhosus. This bacillus was able to live in a latent condition in the digestive tract and thence under favourable conditions to multiply itself and give rise to the appearance of a spontaneous epidemic. The disease might be transmitted from one man to another, but the most frequent cause was water. Food coming from infected regions could also transmit the disease. Other methods of transmission were flies and dust from infected soil. The necessities of warfare made prophylaxis very difficult. At the beginning of the campaign every man, or at the very least every officer, should be briefly instructed in the principal rules for the prophylaxis of all infectious diseases and especially typhoid fever. During the period of concentration and even during active operations overwork should, as far as is compatible with the needs of war, be avoided. For a colonial war only men of not less than 25 years of age should be chosen. Food should be as good and as varied as possible. Personal cleanliness should be attended to and the hygiene of camps should be carefully looked after. Flies, if possible, should be kept away, and above all, if possible, only filtered or boiled water should be drunk and alcohol should be avoided. Anti-typhoid inoculation, according to the method of Wright, as a special method of prophylaxis did not appear so far to have given very definite results. Troops coming from infected garrisons should, if possible, not camp with others. Sick men should be persuaded to apply for relief at the earliest moment. Patients, if seriously ill, should be treated in a special hospital. Disinfection or sterilisation of everything that came from, or had been touched by, the patient should be carried out as far as possible. A camp should not occupy the same place for a long time, and if the fever spread the camp should be abandoned.

*Dysentery.*

Dr. ANTONY, professor at Val-de-Grâce, read a paper upon the Treatment of Dysentery in Armies in the Field. He said that as they were ignorant of the nature of the germs of the disease secondary causes were of very special importance, such as climatic conditions, atmospheric variations, fatigue, overwork, infection, and contagion. In time of war all these causes were at work simultaneously. War exposed an army to suffering and privation of every sort. The men had to undergo exposure often without any shelter and even the most prudent commander could not always avoid overworking his troops. The food of an army could be carefully attended to except under two conditions—viz., during a siege or a retreat, in both of which the troops were exposed to very cruel privations. A wise administration would always feed an army as plentifully as possible and whenever it could be done with fresh food. The regular rations should not, as a rule, be composed entirely of preserved food. All excess should be severely prohibited. The providing of good drinking water for the troops was one of the most difficult matters to carry out in the course of a campaign. Various methods of purification had been employed, but the best way, and the most certain where it could be done, was to boil the water. In hot countries where dysentery and malaria were particularly frequent and very serious, besides these precautions troops should, if possible, not be allowed to fight during the period of the year in which these maladies were specially prevalent, and the men might also be treated with quinine as a preventive method.

Surgeon-Major SIMONIN, *professeur agrégé* at Val-de-Grâce, read a paper upon the Etiology of Dysentery in Armies in the Field. Dysentery had, he said, from all time been the inseparable companion of armies in the field. The history of ancient and mediæval wars, as well as those even of the most recent times, showed that this disease was the most constant factor in the death-rate of troops wherever they were fighting. The disease was very fatal both in temperate climates and in hot countries. The pathological

agent of dysentery had not yet been absolutely discovered, but at the present time it seemed probable that the disease called "dysentery" represented a collection of pathological conditions. Some observers said that the cause of dysentery was a certain animal parasite—viz., an amœba. Other observers put it down to some particular kind of microbe. Other observers, again, considered that the disease was due to both the microbe and the amœba. Whatever be the cause, the general tendency of modern opinion was to consider that the active agent in the production of dysentery was something common to the human economy which acquired under certain circumstances a power of growth and special virulence. They could, therefore, say that the disease proceeded from ordinary causes which affected the organism and allowed an abnormal development of germs which in the ordinary way were inoffensive. In all infectious diseases the importance of secondary causes was great, but in the case of dysentery the secondary causes were of the very highest importance, and in the case of armies in the field these influences were so many in number that they must study them in some methodical fashion. First of all there was the influence of climate and of the different seasons of the year. Heat, for instance, tended to make dysentery the special malady of troops operating in tropical countries. The influence of variations of temperature, and in particular the sudden chilling of the body, played a considerable part in bringing about attacks of diarrhœa and dysentery. A very important cause of dysentery was the influence of food of bad quality and the prolonged use of bulky or indigestible food. Intemperance, whether in food or drink, and above all in a tropical climate, had been rightly said to be a cause of dysentery. Scarcity of food, on the other hand, was also capable of producing the same effect. The fatigue and overwork which were inseparable from warfare and the accumulation in the organism of fatigue-products diminished the resistance of the body and favoured the attack of the dysenteric germs. After a war had lasted a certain time a new factor arose—viz., pollution of the soil and to a certain extent of the air. This cause arose chiefly in camps and besieged towns mainly from the accumulation of various dirty liquids and waste matters and the bodies of men and animals. When dysentery had once made its appearance under the form of a frequent diarrhœa it spread very rapidly through the army, mainly by the influence of water and of soil and of the dust of places which had been definitely polluted by the dejections of the patients. In temperate climates dysentery was generally associated with typhoid fever and in tropical climates with malaria.

*The Prophylaxis of Syphilis in the Army.*

Surgeon-Major FERRIER, *professeur agrégé* at Val-de-Grâce, and Dr. PANARA, the delegate of the Minister of War for Italy, read papers upon this subject. The chief means which they laid down as being effectual were (1) the giving of regimental instructions on the subject to the officers and non-commissioned officers by the medical officers, which instructions should then be handed on to the privates; and (2) the preparation of a little book for the privates containing the simple rules of hygiene. The moral level of soldiers should be raised in every possible way. M. FERRIER said that he was very pleased to see that in the French army fewer permissions were granted to soldiers to go to the theatre or to be out for one night, but that there was an increase in the number of permissions given to men to return to their homes for a certain period of time. Finally, he considered that the temperance campaign would do a great deal of good. Dr. PANARA considered that the chief method of prophylaxis must be treated as a question of public order and rules which affected only the barrack or the hospital could but treat the matter in a secondary way. He agreed with M. Ferrier as to the good which might be derived from the giving of regimental lectures, and he advised that a strict system of surveillance should be carried out in every regiment and barrack. Men should not be punished or reprimanded for applying for relief in cases of this complaint.

*Extemporaneous Methods for the Purification of Water.*

Surgeon-Major LAPASSET read a paper upon this subject. He pointed out that water was absolutely necessary for the soldier, and therefore in default of a good supply of drinking water it was necessary to make use of water which was more or less of a bad quality, and this had to be purified before use. The simplest method of purification was by boiling, but this method was almost impossible to carry out for an army in the field. Another method was filtration, and various filters, such as the Chamberland or the Berkefeld, gave good results. Carbon filters were dangerous to use because they got so quickly infected. Another method of purification was by means of chemicals such as permanganate of potassium. If possible, whatever be the method of purification employed, it should be under the control of an officer who should preferably be a medical officer. Any apparatus used should be a collective apparatus, and not one which was under the control of an individual.

Surgeon-Major SCHUCKING spoke on the same subject. The two chief methods of purification which he considered were filtration and purification by some chemical agent. For troops in the field, if they were in close connexion with the base, filters acted very well, but if the troops were far away from their base chemical agents were more easily employed, such, for instance, as the hyperchloride of lime.

Dr. VINCENT, *médecin de bataillon*, followed on the same subject, treating the subject with special reference to the purification of water for troops on the march. The best system, in his opinion, was that of chemical purification after the method employed by Lapeyrière. In default of this the water might be boiled.

*Tropical Phagedæna.*

Dr. LE DANTEC (Bordeaux), a first-class naval surgeon, read a paper upon this subject. He pointed out that in hot countries any wound of the skin rapidly passed into a state of ulceration, and that this ulceration exhibited the condition known as phagedæna, which was remarkable for its tendency to invade healthy tissues. Phagedæna appeared to be due to a bacillus which closely resembled that described in 1896 by Vincent as occurring in Madagascar. He himself had discovered this bacillus in the year 1884. The natural home of the bacillus appeared to be damp ground.

*The Care of the Wounded in Naval Warfare.*

Dr. FONTAN, a French naval *médecin en chef*, read a paper on this subject. They were met, he said, at the outset by the question whether the surgeon could really do his work during the progress of the fight. In France it was considered that the surgeon could not go among the wounded so as to bring them aid on the spot where they fell. He had to remain in the place which was appointed for the reception of the wounded. But could the wounded be taken to this place at every moment of the fight? Unfortunately no. It almost invariably happened that before the wounded could be moved they had to wait for the fire to slacken, and in the meantime they had to remain where they had fallen exposed to the risk of receiving a new wound without any care, and very possibly liable to die from loss of blood or from shock. These conditions could be ameliorated to some extent by instructions given to the combatants before the fight began, together with a packet of first-aid dressings. These things, together with a plentiful supply of tea with a slight admixture of alcohol, should be within the reach of all the fighting men. Supposing, however, that the time for moving the wounded had arrived, it was very difficult on board ship to move a wounded man to the appointed place where the surgeon was at work without harming him, and the best method of doing this was the use of the metal stretcher splint of Auffret. This moulded itself around the body of the wounded man, it kept him absolutely at rest, and it passed easily through very narrow passages. Once the wounded man had arrived at the place where the surgeon was stationed he was placed on the operating table and the first thing to be done was to render his wounds as aseptic as possible. This could be done by irrigation with boiled water, by the application of certain antiseptic solutions, and by dressings of antiseptic gauze. If the dressings were carefully packed in sealed parcels sterilisation in a stove was only indispensable in the case of instruments and of sutures. Bleeding must be stopped, and the loss of blood could be supplied by injections of boiled water to which a little salt had been added. Fractures should be put up in splints, and urgent operations must be undertaken, such as the ligature of arteries, the putting up of fractures, and the closing of cavities of the body which had been opened. A search for foreign bodies should always be postponed. All this treatment, however, should be simply provisional. The wounded should be landed as quickly as possible, or else transferred to a hospital ship. It was quite time that civilised nations should add to their fleets of war

a hospital ship flying the Red Cross, which could, after the battle, collect the wounded of its own nation.

*Hospital Ships.*

Dr. BUROT, a French naval *médecin en chef*, read a paper on the Use of Hospital Ships. He had served in the expedition to Madagascar in 1895 and came to the following conclusions :— 1. Any ship destined for use as a hospital ship should be specially fitted for that purpose. 2. It was absolutely certain that in very malarious countries situated under the torrid zone it was much better when it was possible to treat the sick and wounded on a hospital ship rather than on land. 3. For a hospital ship to render the greatest amount of service it must be a hospital ship and nothing else. 4. In the case of a war lasting for a long time it would be as well to provide at the base of operations a floating hospital large enough to put up all the sick and wounded of the expeditionary column, and at the same time to organise a fleet of quick-steaming transports specially fitted up so as to carry the wounded back to their own country. 5. A floating hospital should be able to hold at least 500 patients. Ventilation should be carefully looked after, and if this could not be done by natural means electric fans should be employed. Distilled water alone should be used, but if the apparatus was not extensive enough to give a constant supply filtration might be employed instead. The question of ice-making on board ships had not yet been finally settled, but the apparatus which gave the best results was that which worked by compressed air. 6. The most serious inconvenience on board the hospital ship occurred in the presence of infection. It was almost impossible to obtain complete isolation on board a ship, and in view of the possible occurrence of infection it would be as well to fit out, at some little distance from the hospital ship, a smaller vessel which could serve as an isolation ward.

*Plague.*

Dr. SIMON and Professor YERSIN read a paper on Epidemics of Plague in the Far East. These observers were of opinion that plague did not arise in any place by itself, neither did it reappear, unless it was re-imported, after a lapse of 20 years. This fact had been established by the epidemics which occurred at Constantinople, Venice, Genoa, and Messina in 1347 when the plague was imported from Jaffa, by the epidemic in Marseilles in 1720, when it came from Syria, and by that at Kutch Mandvi in 1812, when it came from Mecca. The study of recent epidemics led them to the same conclusion. They laid down as first principles (1) that plague spread from a centre in the same way as a drop of oil, that was by circular extension; (2) that the plague could be carried from the primary centre to a distant point if there was direct and rapid communication between those points; and (3) that contamination of distant centres was exceptional except when they were connected with the principal centre by railways or shipping lines. In the Far East plague spread from endemic centres by means of trade routes. Its march, however, was very slow, and neighbouring regions, if separated from the centre of infection by natural barriers, escaped; thus, for instance, Yunnan in China had not affected Tonking. It was from Yunnan that the germs had gone out which were at present spreading throughout the whole world. It took 30 years, from 1850 to 1880, to attack Long-Tcheou and Pakhoi by following the course of the rivers and the various lines of communication. In 1893 English diplomacy procured the opening of the Canton river to trade. The plague started from Long-Tcheou, overran Canton and Hong-Kong, and in four years' time it was spread throughout the four quarters of the world. It was useless to discuss the origin of the plague of Bombay but it might profitably be considered how the plague passed out of India. The port of Kutch Mandvi would appear to be the point of departure. The sanitary police of Bombay and at Karachi did their work admirably, but, on the contrary, at Kutch Mandvi, where there were no Europeans, both entrance to, and exit from, the port were practically free. This port, however, was in constant relation by means of small sailing ships with Madagascar, Zanzibar, Mauritius, Jeddah, and the Persian Gulf. A cultivation of the plague bacillus which had been obtained by Yersin and Carré which killed 20 per cent. of rats that had been inoculated with it and which they called the bacillus C was next referred to. Perfect immunity was obtained in animals by inoculating with this bacillus after a period of 15 days, but experience of the method was still wanting to enable an opinion to be pronounced as to whether this immunity was lasting. Dr. Yersin had inoculated himself without any ill-effects except a slight rise in temperature.

*Tetanus.*

Dr. F. CALMETTE (Lille) read a paper upon the Prophylaxis of Tetanus in Hot Countries. He pointed out that tetanus was very frequent in the torrid zone, more especially on the West Coast of Africa, in Guiana, and in the Antipodes. Young children were especially affected by it, and in Indo-China many newly-born children died from it. The black races were the most easily affected, the white races took the second place, and the yellow races took the third. The infection of tetanus in hot countries arose almost always from the soiling of wounds by earth or by the dejection of animals. Tetanus in new-born children arose from an infection of the umbilical wound. The best measures of guarding against tetanus were as follows :—1. To spread throughout the colonies in hospitals, in ambulances, and in columns of troops on the march the use of anti-tetanic serum so as to prevent tetanus occurring in those whose wounds were infected either with dirt or with portions of clothing. In every case of gunshot-wound, after the first dressing had been applied, a preventive injection of 10 cubic centimetres of anti-tetanic serum should be given. 2. Throughout tropical colonies native women, both mothers and midwives, should be educated with regard to the elementary precautions necessary for women and their newly-born children. Lectures should be given in every colonial centre where there was a medical man at which simple instructions should be given with regard to the dressing of the umbilical cord, on the proper treatment of which the prevention of tetanus in newly-born children almost entirely depended.

Papers were also read by Dr. FIRKET (Liège) and Dr. CLARAC upon the Etiology and Prophylaxis of Bilious Hæmoglobinuric Fever in Hot Countries and by M. E. MARCHAUX upon the General Etiology and Prophylaxis of Hæmoglobinuric Affections.

## THE BRITISH MEDICAL ASSOCIATION.

### MEETING AT IPSWICH.

THE occasion of the meeting of the British Medical Association at Ipswich was utilised by the Irish Medical Schools' and Graduates' Association to hold their annual summer meeting at the Higher Grade School, Ipswich, on August 1st. In the absence of the President (Inspector-General Lloyd, M.D. St. And., R.N.) the chair was taken by Dr. H. Macnaughton Jones, ex-President. There was a large attendance of members, including Sir John W. Moore (Dublin), President of the Royal College of Physicians of Ireland, Professor W. H. Thompson (Belfast), Professor R. J. Anderson (Galway), Dr. W. J. Smyly (Dublin), and the provincial honorary secretary, Mr. James Stewart (Clifton). The Council reported the completion of the arrangements in reference to the Arnott Gold Medal which has been given by Mr. David Arnott in memory of his late father, Sir John Arnott, Bart., and which is to be awarded annually to such Irish medical graduates or diplomates as shall be decreed by the Council to have pre-eminently distinguished themselves by some act of heroism in civil, naval, or military life, or by some achievement in medicine, surgery, or medical research. The chairman, in referring to this generous gift, stated that Mr. David Arnott had most courteously complied with all the requests of the Council in reference to the legal details of the deed by which the medal had now been permanently endowed. He (the chairman) wished to emphasise the fact that those qualified for the distinction were not to be confined to members of their Association and that the medal might be awarded to any Irish medical graduate or diplomate whom their Council might adjudge worthy. The first award would probably be made before the next festival dinner. Sir John W. Moore, having remarked on the warm liberality and patriotism displayed by the son of the late

much esteemed Irishman, Sir John Arnott, in this matter and above all on the evidence which it afforded of the high estimation in which the donor held the medical profession generally, and especially the *alumni* of the Irish schools of medicine, concluded by moving: "That the heartiest thanks of the association be, and are hereby, accorded to Mr. David Arnott for his generous gift of the gold medal endowed by him in memory of his late father, Sir John Arnott, Bart." Dr. Dolan seconded the motion, which was carried with acclamation. The provincial honorary secretary having stated the views of the Council on the question of restriction of honorary appointments in certain English hospitals to the diplomates of two specially favoured colleges, and having given a *résumé* of what had already been done in the way of abolishing such out-of-date monopoly so antagonistic to the "open-door" spirit of the times, Dr. Douglas proposed, Dr. Esler seconded, and it was carried unanimously: "That this meeting hopes that the Council will as soon as possible proceed actively with their efforts to reduce the number of English public hospitals in which the Fellows (by examination) of Irish colleges are not now eligible for honorary appointments on the staff." It was announced that the Association had determined to entertain Field Marshal Lord Roberts on his return from South Africa at a special banquet to be held in London, the date to be probably in the last week of November. A vote of thanks to the chairman terminated the proceedings.

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The collection made at the opening service at St. Mary-le-Tower was stated last week to be destined for the British Medical Benevolent Fund. We learn that this fund receives half the collection, the other half being given to the Royal Medical Benevolent College, Epsom.

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On the evening of Wednesday, August 1st, Mr. W. A. Churchman, the Mayor of Ipswich, received the members of the British Medical Association at a garden fête held in the grounds of Christchurch House. This beautiful old Elizabethan mansion belongs to the town, but on the above evening the general public were excluded. The grounds were illuminated by Chinese lanterns and small oil lamps while the windows of the front of the house were outlined in the same manner. Music was provided by the band of the Norfolk Regiment and the evening being beautifully fine the fête was a great success. During the evening a firework display was carried out under the direction of Mr. Paul Aggio of Colchester. The set piece showed the words "Welcome to the British Medical Association," the letters appearing in changing colours. Altogether the entertainment was a great success.

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On the afternoon of the same day a garden party was given by Mr. Felix Cobbold of The Lodge, Felixstowe. Some 300 guests were present. Music was provided by the band of the Brantham Works augmented by some players from the Ipswich Artillery Band. The magnificent conservatories and hothouses were seen at their best.

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On Thursday, August 2nd, members were invited to a garden party given by Captain and Lady Beatrice Pretyman at Orwell Park, and in the morning Mr. J. S. Corder conducted a party over Christchurch mansion and the Ancient House, besides demonstrating sundry other of the antiquities of Ipswich, such as Wolsey's Gateway.

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The annual dinner of the Association was held on the evening of Thursday in the Town-hall. In addition to the President and the other officers of the Association there were present the Mayor of Ipswich, the High Sheriff of Suffolk, Sir Charles Dalrymple, M.P., Professor Simon Flexner of New York, Professor Nicolaysen of Christiania, Professor John Berg of Stockholm, Professor Lenader of Upsala, Professor Thoma of Aix-la-Chapelle, and some 250 members. After the usual loyal toasts the High Sheriff of Suffolk proposed "The Navy, Army, and Imperial Forces." The substitution of the word "imperial" for the usual one of "reserve" was significant of the knitting together of the empire by recent events. The responses, however, were given in the usual manner. Surgeon-General J. B. Hamilton responded for the army, Inspector-General A. Turnbull, R.N., for the navy, and Lieutenant-Colonel Andrew Clark for the reserve forces. Other toasts were "The Mayor of Ipswich," proposed by Sir John Moore; "The British Medical Association," proposed by Sir Charles Dalrymple, M.P.; "The President," proposed by Dr. Pye-Smith; and "The Guests," proposed by Dr. Buzzard. During the evening a reception was held by the ladies of the East Anglian Branch in the Museum.

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## THIRD GENERAL MEETING.

The third general meeting was held in the Central Hall of the Higher Grade School on August 2nd.

The PRESIDENT called upon Mr. FREDERICK TREVES to deliver his address in Surgery. This address was published in THE LANCET of August 4th, p. 312. At the conclusion of the address, which was most cordially received, a vote of thanks was moved to Mr Treves by Mr. T. R. JESSOP (Leeds) and seconded by Dr. WARD COUSINS. MR. TREVES briefly returned thanks.

Dr. ROBERTS THOMSON, the President of the Council, then rose to present to the meeting the list of the names of those who had been nominated by the Council that morning to serve on the committee to consider the reconstitution of the Association. These were:—for South Africa, Surgeon-General J. B. Hamilton; for the East Indies, Mr. James Cantlie; for Ireland, Sir John Moore; for Scotland, Dr. J. C. McVail; and for England. Dr. Roberts Thomson, Dr. Radcliffe Crocker, Mr. T. Jenner Verrall, Dr. R. Saundby, Dr. S. Woodcock, Dr. Ward Cousins, Mr. H. T. Butlin, and Mr. Andrew Clark.

Mr. Horsley's nominations were as follows:—For the West Indies, Dr. C. G. Gooding, late of Barbados; for Australasia, Mr. C. G. D. Morier of Adelaide; for Scotland, Dr. R. C. Buist of Dundee; for Ireland, Professor J. W. Byers; for Canada, Mr. Edmund Owen; for England, Dr. A. Cox of Gateshead, Dr. William Gordon of Exeter, Dr. C. H. Milburn, Dr. A. G. Bateman, Dr. A. B. Ritchie, Mr. J. S. Whitaker, and Mr. Victor Horsley.

Dr. BERNARD O'CONNOR said that in accordance with the rules observed in the appointment of a Royal Commission the Association ought to select a chairman of the committee. That being so he proposed Mr. Victor Horsley.—This was seconded by Dr. ALFRED COX, but the CHAIRMAN said that he must rule the motion out of order.—The nominations were accepted *nemine contradicente*.

Dr. SARAT K. MULLICK rose to move the following:

(1) The present system of filling professorial chairs in the medical colleges in India, by virtue of grade rank in the Indian (Military) Medical Service, is apparently prejudicial to the interest of medical education and sanitation, and is a sinister bar to the advancement of original research in India. This meeting is of opinion that some change is necessary, and hereby appoints a sub-committee to consider the matter and report to the Council such action as it may think it proper to take.

He remarked that in deference to representations which had been made to him he had modified the terms of his motion. He continued in a well-argued speech to contend that some inquiry ought to be made, as he did not consider that his statements should be taken on his word alone.

Colonel KENNETH MACLEOD, I.M.S., while sympathising with the mover of the resolution, opposed it on the ground that it really involved an inquiry into the whole system of the government of India. After a few words from Dr. CHOWRY-MUTHU it was eventually decided to refer the matter to the Standing Committee of the Parliamentary Bills Committee

Mr. VICTOR HORSLEY had given notice that he would move—

That the Council be, and hereby is instructed to allot the sum of £300

for the travelling and hotel expenses of the provincial members of the committee mentioned in the foregoing motion.

This referred to the committee on the constitution.

Mr. Horsley's motion was seconded by Dr. WOODCOCK, but was finally altered so that no definite sum was mentioned, but it was agreed that provincial members should be allowed one guinea per diem for hotel expenses as well as their travelling expenses.

The meeting shortly afterwards adjourned.

## FOURTH GENERAL MEETING.

The concluding general meeting was held on August 3rd in the Central Hall of the Higher Grade School at 2.30 P.M.

The PRESIDENT read a telegram which he had received from Osborne in reply to the message of sympathy with Her Majesty passed by the Association. He then called upon Dr. WILLIAM SMYLY to deliver his address in Obstetrics. The address, of which the subject was Maternal Mortality in Childbirth, will be found at p. 385.—A vote of thanks to Dr. Smyly was proposed by Professor BYERS and seconded by Dr. W. S. A. GRIFFITH.—Dr. SMYLY having replied, the PRESIDENT read out three resolutions which had been sent up from the sections. One from the section of Obstetrics dealt with the notification of puerperal fever. Two sent up from the section of State Medicine dealt with the subject of the housing of the working classes and with the use of food preservatives. These were unanimously referred to the Council.—The customary votes of thanks to the Mayor of Ipswich and others who had assisted the Association in various ways were then put and carried unanimously.—A vote of thanks to Dr. ELLISTON, the President, was proposed and carried by acclamation and the meeting terminated.

## THE SECTIONS.

### MEDICINE.

THURSDAY, AUGUST 2ND.

*The Problems of Gastric Ulcer.*

Dr. J. F. PAYNE (London) opened the discussion on this subject. He referred to the imperfection of their knowledge with regard to this affection. He had little doubt that it was becoming increasingly prevalent. In proof of this assertion he gave statistics of the number of cases of gastric and duodenal ulcer admitted into St. Thomas's Hospital in the six quinquennial periods from 1870 to 1899 and they were respectively 30, 38, 70, 103, 174, and in the last period —i.e., 1895–1899—216, or five times as many as they were 20 years ago. When allowance had been made for the fact that many cases were now sent in for operation that would probably not have been at the earlier period and also for other accidental causes of increase in the number of admissions, he still was convinced that these corresponded with an increase of the disease among the general population. Gastric ulcer shared in this respect with other digestive diseases. Thus among the continued fevers, enteric fever, a fever characterised mainly by a digestive lesion, had supplanted typhus fever, a fever of more general character, and there was a real increase in the number of cases of typhlitis or appendicitis. As to diagnosis, was it always complete and satisfactory? The principles upon which it was based had been long well known. The three cardinal symptoms were pain in the epigastrium of a peculiar character, vomiting or gastric irritability, and hæmatemesis or melæna. Age incidence was also important. Only one diagnostic sign had been added in the last 30 years—hyperacidity of the gastric juice. As to the peculiar pain he found it present in a decided minority of cases, and in some pain was not present at all. Vomiting was present in most cases. As to hæmatemesis, he had been surprised to find that out of 48 fatal cases it had occurred in only 14, while in non-fatal cases it had been present in 95 per cent. of cases under his own care and in 75 per cent. of all cases in the hospital. His explanation of this discrepancy was that many cases proved fatal by perforation, in which complication hæmorrhage was known to be uncommon, while non-fatal cases were often sent to hospital on account of that very symptom. In his opinion it was the most reliable of the above signs. Other causes of hæmatemesis were alcoholism and cirrhosis of the liver, aneurysm rarely, and direct injury or strain. In this connexion he mentioned three cases in which hæmorrhage appeared to have originated the ulcer. Hæmatemesis in men was most frequently due to cirrhosis of the liver, in women to gastric ulcer. He knew little practically about hyperacidity of the gastric fluid, as he had never been able to think that it was a justifiable proceeding to put a tube into a stomach which was the seat of ulceration. Dr. Payne then discussed the differential diagnosis between acute and chronic ulcers. Acute ulcers were those where the symptoms developed rapidly. In 48 necropsies six ulcers were found to be acute and 42 chronic. Of the cases examined 36 had had symptoms for a long time and 12 for a short time; thus six chronic ulcers had acute symptoms. As to sex incidence Fenwick estimated that the disease was present in 10 females to one male. Dr. Payne found the ratio in acute ulcer to be two to one and in chronic ulcer four and a half to one. He inquired if the classes had the same pathology or if a chronic ulcer were anything else than an acute ulcer grown older. Among suggested causes were digestion, embolism, congestion, poisonous substances, and bacteria. Digestion explained the persistence and chronicity of the ulcer, but they did not know what started the local necrosis. It was usually called a disease of the poorer classes. Had the statement any other origin than their greater relative numbers? As to mortality, more women died under the age of 30 years than women over 30 years, but if the percentage of deaths per person living at the same age was taken more deaths were found at the older periods in both sexes. Post mortem an occluded vessel was often found in the middle of the ulcer. Dr. Payne thought that this proved nothing more than that the hæmorrhage had been arrested by natural means and not that the apparent thrombosis was the cause of the disease. The main principle of treatment was to give rest to the stomach. Rectal feeding enabled this to be done. It was a doubtful point as to whether the rectum absorbed much food. He thought peptonised food the most likely to be absorbed. He always allowed a little warm water to be given by the mouth, but not for the first 24 hours after hæmorrhage. The danger of long-continued rectal feeding was that syncope sometimes came on. He thought that it might be continued safely for 14 days if water by the mouth was allowed and for seven if water was withheld. During the treatment acetone sometimes appeared in the urine; this fact, he thought, proved nothing but starvation and he thought practical starvation was also the cause of the appearance of the same substance in diabetes and chronic alcoholism. In conclusion he submitted the following problems for discussion. Was the disease increasing? Was its diagnosis accurate enough? Was the acute form essentially different from the chronic? Was its original cause known? Was the hyperacidity always present and were they justified in trying to ascertain this? Were the upper classes as much affected as the lower? Should water by the mouth be allowed during rectal feeding?

Dr. S. H. HABERSHON (London) showed two diagrams compiled from cases under the care of the late Dr. S. O. Habershon. Only the cases of patients who had had hæmatemesis or those in which the presence of ulceration had been proved by necropsy were included. They were corrected to the absolute liability of all persons living at the same age and showed that the liability of females to the disease increased rapidly up to the age of 30 years, went down slowly up to 50 years of age, and then fell rapidly to the age of 60 years, while that of males increased steadily from birth to the end of life. Dr. Habershon thought that these showed that there was still some unexplained determining cause in young females. Dr. S. O. Habershon had said that he never felt sure of the diagnosis of gastric ulcer unless hæmorrhage had been present. Difficulties of diagnosis were (1) early cases, (2) neurotic cases with much hyperæsthesia, and (3) those very rare ones in which food relieved the pain. The presence of dilatation of the organ was an assistance to diagnosis in some cases, especially in men and when the ulcer was near the pyloric end. He considered it unjustifiable to pass a stomach tube in these conditions.

Dr. W. GORDON (Exeter) said that no one had ever seen a gastric ulcer in the living body till a few years ago. He had obtained a recent specimen eight or nine years ago which, when examined microscopically, showed a digested edge, next to that an area filled with leucocytes, and deeper still a layer of cells stuffed with cocci. He reviewed the possible causes of the disease—embolism, thrombosis, submucous hæmorrhage, trophic lesion, poisoning in food, mechanical pressure as from tight-lacing, injury to the mucous membrane, and micro-organisms. He considered the last-named to be the most probable and asked that in every case

where a gastric ulcer was excised it should be preserved for the most careful bacteriological and microscopical examination.

Dr. W. CALWELL (Belfast) referred to preventive treatment.

Miss JULIA COCK (London) related two cases which had presented almost all the symptoms of gastric ulcer. The first patient had had severe hæmatemesis and vomiting and subsequently signs pointing to subphrenic abscess. She died from pneumonia and no signs of any lesions whatever could be found in the digestive tract. The second patient had had hæmatemesis and signs of perforation of the stomach. A laparotomy was done and no disease or perforation was found. Eight years after, owing to the persistence of similar symptoms, a second operation was performed. The stomach was found to be healthy but there were chronic peritonitis and many adhesions to the stomach. The peritonitis was probably a relic of the first operation.

Dr. NEWTON PITT (London) considered that hæmatemesis was more often a symptom of other diseases than of gastric ulcer. As the cases of this disease became more frequent in males up to the end of life so he believed would those among females if all those were excluded in which the diagnosis was based on the single symptom of hæmatemesis. He stated that the ulcers found in the stomach in the post-mortem room were nearly always in old people. He had made two necropsies of persons who died from hæmatemesis and had found no ulceration, and, in fact, no cause whatever for hæmorrhage. He thought that it would be as well in the future to call such cases simply cases of hæmatemesis and not gastric ulcer. They were familiar with the engorged state of the gastric mucous membrane produced by the administration shortly before death of ammonia, ether, and brandy and possibly partly by paulo-ante-mortem digestion. Might they not have similar conditions in enfeebled states of the body? Some drugs—i.e., opium—were undoubtedly secreted into the stomach after absorption causing engorgement of the vessels. Might not poisons produced in the intestine by constipation act in the same way and cause hæmorrhage as toluen-diamine would do?

Mr. STUART LOW (London) thought that ulceration might be produced by loss of the normal gastric mucus.

Dr. PYE-SMITH (London) drew attention to the great discrepancy between the results afforded by the clinical and the pathological investigation of causes of gastric ulcer as to its age and sex incidence. From clinical evidence they should assert that the greater number of cases were among young women, from post-mortem room records among elderly men. This convinced him that there was much to be learnt as to the pathology of the disease and he hoped that all ulcers excised during life might be examined. With regard to the microbic theory he could only say that "confidence is a plant of slow growth in an aged bosom." While agreeing that arterial embolism was not a likely cause he thought thrombosis of veins a much more probable one. He considered the acute perforating ulcer, as described by Rokitansky, Cruvelhier, and others, very different from the ordinary cases. As to the cases where hæmatemesis was present without ulceration they had epistaxis occurring in young men, hæmaturia in both young men and young women, and why not hæmatemesis without visible lesion? He did not keep up exclusive rectal feeding for more than 24 hours.

Dr. R. SAUNDBY (Birmingham) did not like the popular view of gastric ulcer. He agreed as to the great difficulty of diagnosis, but pointed out that if Dr. Newton Pitt's views were correct they could not diagnose gastric ulcer at all. He never made a definite diagnosis of the disease unless many symptoms were present at once. If diagnosis were so difficult how much more so must be any decision as to treatment. He did not employ rectal feeding unless there was hæmorrhage and then only for from 24 to 48 hours, which was not what was usually termed exclusive rectal feeding at all, and then he gave small doses of the sulphate of magnesium and iron.

Dr. F. M. POPE (Leicester) said that in addition to allowing patients a small amount of water he gave five grains of resorcin in an ounce of distilled water three or four times a day. Whether in that dose it did or did not act as an antiseptic it gave relief to the pain.

Dr. PAYNE, in reply, said that his experience as to the difficulty of diagnosis had been borne out by the discussion. He had seen one case which to some extent supported the bacterial theory. In a post-mortem examination of a stomach two ulcers were found, one recent, the other chronic, which suggested to his mind the possibility that the former had been caused by direct infection from the latter.

*Intermittent Pulse.*

Professor CUSHNY (Ann Arbor, Michigan) read a paper on this subject. He said that the classification of the varieties of intermittent pulse at present employed was not in accordance with cardiac physiology. He therefore was about to propose a new method. He showed a large number of diagrams and of sphygmographic tracings. Intermissions of the pulse were of several kinds. They might have an auricular contraction without a ventricular; here the ventricle was at fault. The auricular contraction might be delayed; here the auricle was at fault. In the former of these the intermission usually had double the time of a pulse interval; in the latter it might be of any length. In a third variety the ventricle contracted too soon owing to extreme irritability and the subsequent pause was consequently longer than normal. In a fourth the auricle contracted too soon (auricular hyper-irritability). In the third form the pulse was double the pulse interval; in the fourth less than a double pulse interval. In both if the pause equalled two pulse intervals the fault lay with the ventricle and it was less than that with the auricle. In the third and fourth forms the first sound was audible if the heart was listened to. In the first and second forms no heart sound was heard. Professor Cushny explained and illustrated these views by means of his diagrams and sphygmograms and said, in conclusion, that assistance in treatment might result from the general acceptance of his conclusions, as they might expect cardiac stimulants to do good in the first and second forms due to retardation of systole, while drugs like aconite, having a restraining influence, would be more likely to be useful in the third and fourth forms.

Dr. J. BARR (Liverpool) could not accept the conclusions. The auricle was extremely irritable and could be excited to contraction for several hours after death. He did not think that it ever failed to contract and intermissions of the pulse could not be tabulated in that way. He thought that the times of the cardiac systole and diastole were always varying. Many intermissions of the pulse did not correspond to intermissions of the heart. Full contraction of the right side might coincide with imperfect contraction of the left and *vice versâ*. In some cases of fatty heart he believed that the right heart hardly contracted at all, the preliminary circulation being carried on by the aspiratory movements of the thorax and the *vis à tergo* from the systemic circulation.

Professor CUSHNY replied. He thought that the auricle could fail and doubted if independent contraction of the right and left sides of the heart did not occur. Irregularity might be due either to muscular failure or to nervous influence. The latter had been shown in animals after the administration of pilocarpine.

Professor C. R. MARSHALL (Cambridge) gave a short demonstration of Different Forms of Sphygmographs, such as Fick's and Jacquet's, which had a time-marker. The former was more complicated but eliminated error due to inertia of the lever. He also showed a recent form of Sphygmomanometer.

## SURGERY.

### WEDNESDAY, AUGUST 1ST.

*Pyloroplasty.*

Mr. L. A. BIDWELL (London) read the notes of four cases of Pyloric Obstruction in which he had performed Pyloroplasty. In one of them a "tumour" was found which was thought to be malignant and so a gastro-enterostomy was performed, but two years later, as the symptoms returned, a pyloroplasty was done and the "tumour" had disappeared. In all the cases recovery followed. He considered that pyloroplasty was the best treatment for non-malignant stenosis of the pylorus. He thought that the operation was useful even when the ulcer was not close to the pylorus. He employed a modification of Halstead's "square suture."

Professor BERG (Stockholm) did not consider pyloroplasty a satisfactory operation, although in 1896 he had published eight successful cases. He found that the stenosis returned after two or three years and therefore he preferred to perform gastro-enterostomy, and of the eight cases mentioned four had required the performance of this operation on account of recurrence.

Dr. C. H. KILNER (Bury St. Edmunds) had operated by

pyloroplasty for stenosis caused by some acid which had been swallowed. Unfortunately, the operation had been left too late, for the patient died from exhaustion although the wound of the pylorus had healed.

Mr. T. H. MORSE (Norwich) wished to know about the suitability of the operation for duodenal ulcer. He had performed it in one case for ulcer of the duodenum but without success.

Mr. BIDWELL, in reply, mentioned that he had found recurrence occur after gastro-enterostomy and therefore had employed pyloroplasty.

*Cholecystocolostomy.*

Mr. H. BETHAM ROBINSON (London) read the notes of a case in which he had performed this operation. The patient was a man, 33 years of age, who had had syphilis 10 years previously. Four years before he came under observation he had sudden severe epigastric pain and vomiting which recurred. A fortnight later jaundice came on with severe itching. The liver was enlarged and there was a rounded swelling below the liver edge. The paroxysms of pain became worse. An incision in the right semilunar line exposed the gall-bladder, which was much distended, and a hardness was felt in the gastro-hepatic omentum and in the head of the pancreas. This was thought to be malignant and it was decided to connect the gall-bladder with the bowel, but the duodenum could not be brought into contact with the gall-bladder so a junction was effected with the transverse colon. No stone was found in the gall-bladder. The jaundice and itching were rapidly relieved. Some iodide of potassium was then administered and the hardness at the head of the pancreas gradually disappeared, so it was probably gummatous in nature.

*Non-malignant Stricture of the Rectum.*

Mr. F. C. WALLIS (London) commenced his paper upon this subject by remarking that it was usually taught that syphilis was the common cause of non-malignant stricture of the rectum. He considered that septic ulceration was the real cause. This septic condition might be due to operations for hæmorrhoids or to injury in protracted labour. In many of the cases there was not the slightest history or sign of syphilis. In these cases the routine treatment by bougies was perfectly useless and Mr. Wallis described two cases in which the stricture was completely excised, in one with and in the other without a preliminary colotomy. In both the cases the peritoneal cavity was freely opened. He preferred the previous performance of colotomy, as it lessened the chance of sepsis of the peritoneum. The result in the two cases mentioned was perfect. In many of the cases a multiple synovitis was noticed.

Mr. FREDERICK TREVES (London) considered that many of these cases of non-malignant stricture of the rectum were really congenital in origin. The ordinary treatment was very unsatisfactory and he thought that Mr. Wallis's method was a distinct advance.

Mr. STANLEY BOYD agreed that some of these strictures were congenital in origin. One explanation of the frequency of non-malignant stricture in women was that the bowel was affected by discharges from the vagina.

Mr. R. J. GODLEE (London) asked Mr. Wallis if he had mentioned pelvic peritonitis as a cause. He suggested the ventral position as better for the operative treatment of these cases than the lithotomy position.

Mr. WALLIS, in reply, acknowledged that he had omitted pelvic peritonitis as a cause, but he had intended to confine his paper to strictures following on ulceration.

*Oöphorectomy in Cancer of the Breast.*

Mr. STANLEY BOYD (London) described the suggestion of this operation in 1896 by Beatson who relied on a theoretical analogy between the rapid multiplication of the gland-cells in lactation and in malignant disease. Whatever the value of the theory Mr. Boyd showed the striking result of the operation in certain cases. He provided a table detailing all the cases recorded up to date. These were divided into two classes; in the first were put those cases in which the beneficial effect of the oöphorectomy seemed clear and considerable; this contained 17 cases. In the other class were put the cases in which little or no effect was produced or in which the result was doubtful; these were 21 in number. In many of the cases thyroid extract was administered, but it was very doubtful if this had any beneficial effect. The best results seemed to be attained when the patient was over 40 years of age but before the occurrence of the menopause. The more slowly-growing cases were the most likely to be benefited. In some cases improvement occurred within a week. It was desirable in all cases to treat the growth directly by excision, reserving the oöphorectomy for recurrences.

Dr. G. E. HERMAN (London) completed the notes of two cases operated on by him which were included in the series of cases collected by Mr. Boyd.

The late hour precluded any discussion on this important paper.

## OBSTETRICS AND GYNÆCOLOGY.

WEDNESDAY, AUGUST 1ST.

*Cephalotripsy of the After-coming Head.*

Mr. J. H. TARGETT (London) read a paper on this subject founded on a case in which this plan was adopted. He premised that the operation was hardly referred to in ordinary text-books on midwifery and that therefore no details of the procedure were available. The occasions on which such an operation might be required were of course very rare, and even in the case which formed the subject of the paper he thought there was no doubt that Cæsarean section would have been the better method of treatment. The case was that of a rickety dwarf, aged 29 years, unmarried. She was near the end of the ninth month, and as she declined to have Cæsarean section performed it was decided to induce labour at once. This was done by hydrostatic bags, after which a leg was brought down. Delay then took place, and after some hours it was decided to extract. The trunk was delivered but the head remained in a position of flexion above the contracted brim. As no impression could be made upon it, and as pulsation in the cord had ceased, craniotomy was performed. The suboccipital region was chosen as being the most accessible. On applying the cephalotribe the lower blade came into apposition with the face of the child, but the upper blade could not be passed over the occiput owing to lateral contraction of the pelvis and incomplete dilatation of the lower segment of the uterus. The result was that the end of the blade repeatedly caught in the edge of the suboccipital perforation. This led Mr. Targett to pass the blade into the skull through this aperture and thus crush the base in its antero-posterior diameter. The plan answered admirably. The patient made a good recovery. The points on which Mr. Targett laid stress were: (1) What is the best site for perforation of the after-coming head? and (2) when crushing is necessary how should the cephalotribe be applied? He also raised the question of the supposed advantages of version before craniotomy. As to the first point he recommended the suboccipital region. The application of the cephalotribe was, he thought, best effected in the way which he had described in his case, because subsequent experiments which he had made had shown him that the best grip was obtained by inserting one blade into a suboccipital perforation, while the opposite blade was applied over the face. Dr. A. Donald of Manchester had recommended some years ago that version should be performed before doing craniotomy, and he (Mr. Targett) could testify to the fact that under these circumstances the delivery of the after-coming head presented no difficulties. The converse line of practice—viz., version after cephalotripsy—was, he imagined, very rarely adopted; but he had had occasion to carry it out in a recent case. Internal version in this case presented no special difficulties, but there was some trouble in bringing down the breech. After this, however, the rest of the delivery was surprisingly easy because the arms were completely extended by the side of the crushed head, and the mass so formed was less in bulk than the breach or the thorax. The patient did well.

The PRESIDENT (Dr. W. S. A. GRIFFITH) said that in the case of a dead child craniotomy was, in his opinion, preferable to forceps extraction in cases of contracted pelvis. But he had had such good results from Cæsarean section that in the case of living children he would be very loth to advise craniotomy.

Dr. C. E. PUBSLOW (Birmingham) had in one case delivered by version when attempts to extract after perforation had failed, and he agreed with Dr. Griffith that this plan had advantages in some cases. When he had to perform craniotomy on the after-coming head he preferred perforation through the mouth to that behind the ear.

Mr. TARGETT replied.

Mdlle. CATHARINE VAN TUSSENBROEK (Amsterdam) read a short paper on Observations on Human Placentation in its Second Stage, illustrated by diagrams.

Dr. M. BEVERLEY (Norwich) and Dr. BERRY HART (Edinburgh) made some observations on the subject and congratulated Mdlle. van Tussenbroek on her excellent paper.

## STATE MEDICINE.

### WEDNESDAY, AUGUST 1ST.

Dr. DREW HARRIS (St. Helens) read a paper on

*The Municipal Sterilisation of Milk: An Account of the Installation and Working of the System at St. Helens.*

This paper was illustrated by lantern slides. The system was described in detail and results were given showing some improvement in the mortality of the children thus fed. The cost of sterilising the day's supply of milk was twopence, and the cost of installation and current expenses came to about £500, less £187 derived from the sale of the milk.

Dr. Harris's paper was discussed by Dr. J. C. THRESH (Chelmsford) and Dr. H. PECK (Chesterfield). The latter held that the proper way to begin the crusade was by a rigorous public control of the dairy farms.

Professor R. W. BOYCE (Liverpool) being absent, Dr. GRÜNBAUM read for him a paper upon the Construction of Sanatoria for Phthisis. Several continental institutions were described and illustrated by lantern slides, as was one in course of construction near Liverpool.

Dr. A. C. HOUSTON (London) read a paper bearing the title—

*Can Modern Systems of Sewage Treatment be Depended upon to Remove the Bacillus Typhosus and Allied Organisms?*

He showed a large number of lantern slides in illustration of his paper and confined his remarks to bacterial filters, because septic tanks in his judgment were no better from the epidemiological point of view than modified cesspools. In discussing the question of the possibility of the mechanical separation of micro-organisms in bacterial beds Dr. Houston gave good grounds for accepting his final conclusion—namely, that having regard to permanency of action and to what was feasible in practice it might be stated in general terms and with comparative safety that the mechanical separation of the micro-organisms in sewage by the use of bacterial beds was virtually impossible. In considering the possibility of the biological processes at work in the filter-beds proving inimical to pathogenic germs Dr. Houston pointed out that it was difficult, if not almost impossible, to obtain direct evidence on this important point because the mathematical chances of isolating the typhoid bacillus from ordinary sewage were so remote as to be almost infinitesimal. Consequently it was necessary to seek for indirect evidence, such as might, for example, be afforded by the enumeration of certain species of microbes in the crude sewage, and then to ascertain the fate of these same germs during the biological treatment of the sewage. Dr. Houston next gave elaborate tables proving that in the Crossness experiments bacillus coli and bacillus enteritidis sporogenes passed through the bacterial beds in practically undiminished numbers. Another microbe passing through the beds in unaltered numbers was the "sewage proteus," some strains of which were virulent to guinea-pigs. Again on occasion Dr. Houston had found bacillus pyocaneus even in so minute a quantity as $\frac{1}{1000}$ cubic centimetre of an effluent. Lastly, the subcutaneous injection of from 1 to 3 cubic centimetres of sewage effluents into guinea-pigs almost invariably produced a rapidly fatal result, but sometimes the animals apparently recovered but eventually died after the lapse of some weeks from pseudo-tuberculosis. Speaking of the deposit accumulating on the material in bacterial beds Dr. Houston showed that besides the tetanus bacillus "acid fast" bacteria were present in abundance some of which could not with certainty be distinguished morphologically from the tubercle bacillus. In one single instance he succeeded in producing tuberculosis in a guinea-pig inoculated with the deposit from a bacterial bed. Dr. Houston inferred from this that even if some of the "acid fast" bacteria collecting in the coke-beds were those of the tubercle bacillus they had for the most part lost their infective power; nevertheless, the single positive experiment recorded tended to destroy the belief that none of the bacteria in question were those of tubercle or that being tubercle they had all lost their infective power. Dr. Houston next dealt at some length with the experiments of Andrewes and Laws on the vitality of bacillus typhosus in sewage and with Klein's researches in a similar direction. The lesson Dr. Houston sought to teach from the results of these experiments was that the element of "time" or "delay" was an all-important factor and that it was doubtful if any bacterial process in practical operation at the present time "treated" or "detained" the sewage for a sufficiently long period to allow of the complete destruction of all the pathogenic germs by bacterial agencies. Dr. Houston frankly admitted that demonstration of bacillus enteritidis sporogenes and bacillus coli in sewage effluents did not of necessity prove that the typhoid bacillus and Koch's vibrio would likewise be unaffected by the biological processes at work in bacterial beds, but he urged somewhat strongly that his results showed that until positive evidence to the contrary were forthcoming it would be wise to regard the effluents from bacterial beds as no more safe in their possible relation to disease than crude sewage. In conclusion, Dr. Houston pointed out that if streptococci, as a class, were to be thought of as derived from the intestinal evacuations of animals as delicate germs which readily lost their vitality and died, and as not unlikely to be, moreover, pathogenic, the fact that he had repeatedly isolated them from $\frac{1}{1000}$ cubic centimetre or less of the effluents from bacterial beds could not be regarded as devoid of significance. Indeed, in Dr. Houston's judgment it clearly carried the conviction that if these germs of feeble vitality passed through the filters in practically unaltered numbers it was extremely unlikely that pathogenic germs such as bacillus typhosus and the cholera vibrio which were seemingly most resistant, would be destroyed altogether during the biological processes at work in the filter beds.

Dr. A. S. F. GRÜNBAUM (Liverpool) said that the bacillus enteritidis sporogenes was almost universal. He did not think that the bacillus coli was very resistant, for it was specially susceptible to light and dryness. The great difficulty at present lay in the fact that there were no means of isolating the bacillus typhosus. Recently a cultivation medium had been published by Dr. A. T. MacConkey in THE LANCET[1]—a bile-salt agar with lactose which was inimical to nearly all bacteria but bacillus coli and bacillus typhosus. They had found that the bacillus typhosus was not present in the effluent from three feet of sand. The result of these observations pointed to the conclusion that all typhoid excreta should be sterilised. Effluents from bacterial beds must not go anywhere where they would be likely to infect drinking-water, or food, such as oysters.

Dr. COOPER PATTIN (Norwich) had endeavoured for a long time in Norwich to get excreta mixed with paraffin and burnt. As Dr. Grünbaum pointed out, the infection could not be kept out of the sewers either in early or in ambulatory enteric fever cases. Filter-beds did not clear sewage of pathogenic bacteria. He asked Dr. Houston to what extent and for what period of time must sewage be passed through soil to rid it of infection. It was a question whether the bacilli should not be subjected to treatment before filtration.

Dr. J. GROVES (Carisbrooke) said that the Local Government Board had discouraged the efforts of small authorities to establish bacterial treatment of sewage. The microbic states of effluents were most unsatisfactory. Many medical officers had been convinced that there had been an actual increase in the bacteria of the effluent from filtration beds.

Dr. J. C. THRESH (Chelmsford) said that at Whitstable, where oysters were cultivated, the question arose whether it would be safe to discharge effluents. On experimenting he found more bacteria in the effluent than in original sewage. The Local Government Board had pressed them to enlarge their filter-beds. He urged his local committee to write asking for proof that bacillus typhosus and other pathogenic germs would thereby be eliminated. The Local Government Board admitted that there was no such proof. The danger was the greater inasmuch as the effluent contained nothing offensive to the eye or the nose.

Dr. HOUSTON, in reply, said that he was pleased to find that Dr. Grünbaum did not regard the bacillus coli as a resistant organism. The general view was that the bacillus coli was more resistant than the bacillus typhosus. The new medium of Dr. MacConkey was doubtless most important. The use

[1] THE LANCET, July 7th, 1900, p. 20.

of sand as a material for efficient filtration could not be carried out in practice. Dr. Pattin's question as to what was the most efficient method of sewage sterilisation was difficult to answer. It might be said, however, that subsequent earth filtration would greatly lessen, if not remove, the infection.

THURSDAY, AUGUST 2ND.

*The Provision of Cottages in Rural Districts and its Bearing upon Public Health.*

A discussion was opened upon this subject by Dr. J. S. TEW, medical officer of health of the West Kent Combined Sanitary District. This subject, he said, was inseparably connected with the larger question of the housing of the working-classes throughout the country and was of paramount importance. He did not think he was claiming too much in saying that to no one was the actual condition of life among the working-classes better known than to members of their own profession and particularly to those of them who had been engaged in general practice and who had therefore seen all phases of cottagers' lives. The President of that Association last year, in his comprehensive and able address, spoke as follows: "The great hindrance to the progress of preventive medicine which we have to overcome is the overcrowded and insanitary condition of the dwellings of the working-classes. This is the field on which the great battle will have to be fought out. Our warfare will not be directly with microbic life, but rather with the conditions in which specific organisms are grown." In considering the condition and requirements of so-called rural districts, it had always appeared to him that some explanation of the term should be made. The term "rural district" might be considered, as far as the question of housing was concerned, in two ways: (1) when viewed in the light of the legal powers of its governing authority as a *rural* district—i.e., as an arbitrary division, distinguishing it from *urban* districts; and (2) when viewed as to its actual constitution—i.e., in the light of its proportion of population to area and the occupation of its inhabitants. Many large "rural districts," particularly in and near manufacturing and mining parts of the country and in districts near London and large towns, included contributory places of an urban character, and were rural only in name, and it was important to recognise their difference from purely agricultural districts. It was only reasonable that where houses for the working-classes were inadequate the consideration of building by local authorities and the nature of the dwellings most suitable to meet the local wants must be regulated by the constitution of the district and by its prevailing industries. For that purpose he proposed some such division as the following: (1) the metropolis proper, the condition of which was unique and with the exception of certain generalities beyond the scope of that discussion; (2) suburban districts, where the question of accommodation was somewhat less acute than in the actual centre of London; (3) extra-suburban districts—i.e., just beyond the immediate suburbs, often some 15 or 20 miles out, and many of which were in a transition state, but gradually losing their rural character by absorption into the suburbs of the spreading metropolis; (4) agricultural districts, where the poorer classes mainly, if not entirely, worked on the land; (5) cities and large provincial towns, where in the majority of cases special conditions of situation, staple industry, &c., made the question of the necessity for further provision of houses for the working-classes almost purely local; and (6) the suburbs of cities and large provincial towns, respecting which the conditions were extremely variable and must be dealt with on their individual merits. The districts coming under the head of rural districts would mainly be under the divisions Nos. 3, 4, and 6, and the working-people resolved themselves into three classes: 1. A section in good work and receiving wages varying from 25*s.* to 30*s.* a week, but yet where there was the greatest difficulty in obtaining a decent dwelling for a family, from 6*s.* 6*d.* to 8*s.* 6*d.* being frequently paid as house-rent alone in districts indicated as "extra-suburban." This led to the inevitable lodgers and the consequent overcrowding with the attendant evils. 2. A section mainly including the ordinary agricultural labourer, with a varying wage of about from 12*s.* to 22*s.* a week. In many cases, particularly on large estates, this class was well housed in cottages from 1*s.* to 2*s.* 6*d.* a week rent with a good garden and often a supply of milk; in others the cottages might be cheap, under 2*s.* a week, but too small for a family, damp, ill-drained, badly supplied with water, and in a bad state of repair. Many of these cottages were let with farms and the tenant farmer was the employer and sublet the cottages to the labourers. In this case if the cottage was in bad repair it was difficult or impossible for the labourer to get his master to insist on repairs, as the farmer was reluctant to request the landlord or his agent to improve the condition of the labourer's cottage, having in these days of agricultural depression many other and, in his opinion, more pressing matters on which to obtain his landlord's consideration. As a rule, however, the worst class of cottage was that owned by poor persons who had to live out of the proceeds of old cottage property, frequently mortgaged, and where practically no repairs had been done for years, and interference meant the owners becoming chargeable to the parish. Cottages owned by labourers themselves were rarely in satisfactory condition. 3. The third and, fortunately, by far the smallest section in rural districts would include those having no regular occupation and having an alternating existence between a slum cottage, the workhouse, the gaol, and the road. That was the class which so frequently came under the notice of the Society for the Prevention of Cruelty to Children and the school attendance officer and the children of whom were such active agents in the spread of infectious and parasitic diseases in our elementary schools. The bad influence which insanitary and overcrowded cottages had upon the public health could hardly be over-estimated. To his mind the foremost evil was the lowering of the individual stamina of those living under bad conditions. Next to this came those two most formidable diseases of infant life, whooping-cough and measles, which between them in the year 1899 caused in England and Wales over 19,000 deaths, the vast majority of these occurring among children of the working-classes. The obstacles to the provision of an adequate number of healthy cottages in rural districts were many and great, so great that although increased powers to provide accommodation were given ten years ago yet he believed that so far only two rural district councils in England had reached the stage of actual buildings. Proposals to adopt Part III. of the Housing of the Working Classes Act had, however, in many instances stimulated local enterprise to provide the necessary accommodation. Unfortunately, in the majority of rural districts the staff of sanitary inspectors was inadequate and only sufficient to cope with routine work and general nuisances, leaving little time for the detailed inspection of cottage property, which frequently belonged to persons with local interest who had the power to oppose the annual re-election of inspectors. With insecurity of tenure it was unlikely and unreasonable to expect that the majority of sanitary inspectors or medical officers of health would take the active steps which they otherwise would. Again, the clerks to rural authorities naturally had no great enthusiasm in the matter of adopting acts of this kind which required great attention and caused endless extra meetings, and as experience showed in the great majority of cases eventually were allowed to fall through at any earlier or later stage. When it had been fairly shown that further cottage accommodation was required fresh housing should be made before closing of insanitary property, otherwise the ejected families either overcrowded other cottages near or else left the neighbourhood. The all-important question in starting a scheme was whether the cottages would be self-supporting or become a burden on the rates. Where land was not high-priced he had every reason to believe that with care and economy, even with the present high price of material and wages, rural councils could build cottages just to pay their way; and if from exceptional local circumstances there was a slight loss on them it should be looked upon in the light of an insurance premium on the health of the place. They naturally looked with considerable expectation to the Bill now before Parliament to amend Part III. of the Housing of the Working Classes Act, 1890, but a perusal of the Bill as amended in committee gave little hope of making the mode of procedure less cumbersome for rural districts. He hoped to elicit opinions specially (1) as to the urgent necessity for better cottage accommodation in many rural districts; (2) as to the desirability of rural district councils undertaking the building of cottages; and (3) as to the insufficient air-space in crowded cottages being greatly responsible for the high death-rate among the working-classes from such diseases as measles, whooping-cough, and phthisis.

Dr. J. GROVES (Carisbrooke) said that the inspectors had

to collect information for the medical officers. In many rural districts landlords had to be dealt with directly. The landlords had often very little return and it must therefore be shown clearly that better accommodation was necessary. Cottages were often closed by the local authorities because landlords would not repair them, and the labourers were forced into the nearest towns. The duty of the medical officer was to state what was right from a sanitary point of view, but the responsibility of carrying out his recommendations rested with the local authority. Security of tenure was the only safeguard and that could be obtained only by the Local Government Board.

Dr. H. PECK (Chesterfield) related a number of instances of country persons in his district who lived in extremely bad houses. The present system of providing houses under the Housing of the Working Classes Act was far too complicated. Until that was simplified there was little chance of making any material improvement in rural housing.

Sir HUGH BEEVOR (London) said that the question should be mainly in the hands of the county medical officers. He suggested that the dampness of cottages might be ascertained in country districts and valuable data thereby afforded in the study of phthisis.

Dr. D. G. SUTHERLAND (Cambridge) suggested that rural improvement schemes might be run alongside the many that were advanced in favour of towns. The hands of the sanitarian were often stayed because he knew that if insanitary houses were condemned no others would be built in their place. The stamina of the nation was deeply involved in the question of the housing of the rural poor.

Dr. J. HADDON (Hawick) thought that medical officers of health did not fully avail themselves of existing powers. He urged that powers should be given to regulate the construction of cottages and that an isolation room should be attached to each dwelling.

Dr. H. JONES (Rhondda) lamented the insufficiency of the staff and the apathy of the Local Government Board in the matter. At the same time pressure from that body, however, was often ignored by the local authorities.

Dr. TEW, in reply, said that insecurity of tenure retarded both inspectors and medical officers. He agreed with Dr. Peck that the trouble given to the clerks by Part III. of the Housing of the Working Classes Act was most detrimental. There was no more striking feature in country cottages than the gutters, which were very often very defective and led to damp walls.

A vote of thanks to Dr. Tew was proposed by the PRESIDENT and carried unanimously.

## PSYCHOLOGY.

### WEDNESDAY, AUGUST 1ST.

*The Bearing of Sexual Functions and Diseases of the Sexual Organs on Insanity and Crime.*

Dr. MACNAUGHTON-JONES (London) opened a discussion on the Correlation between Sexual Functions and Insanity and Crime. He pointed out that various affections of the genitalia, internal and external, might have possible correlative mental disturbances and that malpositions and displacements of the uterus and adnexa, inflammatory and neoplastic lesions, and perverted sexual habits—e.g., masturbation—might give their characteristic colour to mental troubles. Insanity might arise from masturbation as well as from the changes attending the onset of sexual life (puberty and adolescence) or its close (the menopause). Psycho-pathology and gynæcology had a common meeting-ground in the sexual ailments of women, and in this field might be found the causes and conditions which in women gave rise to neurasthenia, hypochondriasis, melancholia, mania, and dementia. Hystero-psychoses had their origin in uterine and ovarian troubles, as was now almost universally recognised. Much depended upon difference of environment and upbringing. The sensitiveness of the cultured, refined, and pretty woman of society might result in mental trouble from causes which did not affect the agricultural labourer's wife, the city seamstress, or the factory hand. Special regard should be had to the importance of the period of adolescence from a medico-legal and criminological standpoint. The question of the gynæcological examination of female patients who were insane must be left to the discretion of the asylum physician. When gross lesions or tumours of the uterus and adnexa were present in such patients removal should be practised. The risk of post-operative mental derangement was slight or absent in women previously healthy, and when such derangement resulted it was not generally serious or permanent. Aberrant uterine and sexual functions when present in a woman who had committed some crime or offence should be always carefully considered because such a condition might be a determining cause, and its removal might do away with the tendency to crime or wrong-doing.

Dr. J. G. SOUTAR (Gloucester) deprecated undue gynæcological examination of female patients, especially as a routine practice, this being decidedly a disturbing process.

Dr. BERNARD O'CONNOR (London) said that the approach of the menopause should be considered as an important point in determining the criminal responsibility of women at the age of 43 or 44 years.

Dr. WYNN WESTCOTT (London) said that in his experience as a coroner at inquests on 200 women who had committed suicide he found that the majority were at the "change of life" and that the younger of these appeared to have been menstruating.

The PRESIDENT (Dr. PERCY SMITH of London) deprecated the routine vaginal examination of female lunatics and stated that some gynæcological methods tended to develop the patient's hypochrondriasis.

Dr. SEYMOUR TUKE (London) commended the coöperation of psychological and gynæcological study.

Mr. G. A. CARDEW (Cheltenham) said that gynæcological examination was unnecessary in the vast majority of cases seen by him—i.e., female school teachers and students, who suffered from amenorrhœa, but who recovered under rest, fresh air, and good diet.

Dr. MACNAUGHTON-JONES briefly replied.

*Epileptoid Mania.*

Dr. E. S. PASSMORE, assistant medical officer of Banstead Asylum, read a paper on Epileptoid Mania. Patients suffered for some years from fits, probably from childhood, and then some day, without warning, mental symptoms of a characteristic kind supervened on a fit. The mental symptoms were confusion of ideas and loss of memory and the unconscious performance of some apparently purposive act. At a later stage maniacal outbreaks of an impulsive or homicidal character might develop, and temporary delusions might also arise as the result of hallucinations. In other cases the convulsive attacks were entirely absent, their place being taken by periodical maniacal outbursts. Clinical histories of a few cases were detailed and the conclusion reached was that the periodical convulsive attacks of epilepsy might in some patients be replaced by periodical maniacal attacks (psycho-epileptic attacks). It was also urged that so-called "recurrent mania" was nothing but an epileptic insanity. For example, a female patient, aged 31 years, admitted to Banstead Asylum as suffering from acute mania in 1884, was discharged in 1887. Eight days later she was readmitted with acute maniacal symptoms. After four years she was discharged, but readmitted in five days, and had since then been a constant inmate of the asylum. Her attacks of maniacal excitement now occurred at shorter intervals than previously and between the attacks she was perfectly rational. The attacks had a comparatively sudden onset, with twitching of the facial muscles and mental confusion lasting a few hours. She then became maniacal and dangerous and exhibited murderous impulses. When this stage had subsided she was dirty and destructive in her habits and collected rubbish. The whole attack lasted a week or a fortnight and she then slowly recovered. After an interval the same cycle of events was repeated. The patient's brother and sister were insane, but no other details of family history were obtainable. In other patients similarly afflicted a family history of insanity and epilepsy was obtained. Dr. Passmore concluded that the mania associated with ordinary epileptic insanity and that known as recurrent mania showed a marked similarity in clinical symptoms, and he suggested that such cases of recurrent mania as exhibited periodical excitement in the absence of delusions should be regarded as epileptic in nature and should be designated "epileptoid mania." Of course such conditions as general paralysis, chronic alcoholism, and cerebral wasting, in which epilepsy was merely symptomatic, should not be confounded with these cases.

Mr. F. OLDFIELD (London), in discussing the above paper, said that epilepsy might be manifested by mental symptoms, especially such mental outbreaks as certain criminals were liable to and which Lombroso was one of the first to draw attention to.

Dr. LLOYD ANDRIEZEN (London) referred to the importance of classification as a scientific, practical, and economic measure, and to the places and institutions adapted for various classes of epileptic patients. Epileptic lesions might be present in idiots, imbeciles, paraphreniacs (criminals, borderland cases, &c.), and in ordinary lunatics. Psychic epilepsy led to the development of automatic states of sub-consciousness, with loss of the sense of personal identity, during which crimes might be committed. This was a point of great medico-legal importance. He could not accept the view that true recurrent mania was identical with epileptic mania. Both in pathogenesis and clinical history there were important differences.

The PRESIDENT did not consider recurrent mania as an epileptic cerebral or mental disease. Attacks of recurrent mania usually began more gradually and there were less confusion of mind and loss of memory for the occurrences than in epileptic insanity. There was some relationship to epilepsy in rare instances—e.g., in a case observed by him in which one of the maniacal attacks of a patient suffering from recurrent mania ended with a series of convulsive seizures.

Dr. J. G. SOUTAR said that in many essential particulars recurrent mania proper was different from epileptic insanity, and Dr. Passmore's contention of their identity could not be sustained. It was necessary to guard against a too great laxity towards criminals by ascribing criminal deeds to epilepsy.

The meeting was then adjourned to the next day.

## PHYSIOLOGY.

### WEDNESDAY, AUGUST 1ST.

The proceedings of the section opened with a debate on

*The Formation and Excretion of Uric Acid in Health and Disease,*

introduced by the President, Dr. W. D. HALLIBURTON, Professor of Physiology in King's College, London. He said that their more exact information on the subject dated from the work of Mares and Horbaczewski, the former of whom pointed out that the increased output of uric acid following a meal commenced too soon to be attributable to tissue metabolism, and the latter associated the production of uric acid with the liberation of nuclein. Horbaczewski's theory, though not tenable in all its original details, had been the basis of most of the more recent work. Chemists as well as physiologists had given attention to the matter, and one in particular, Fischer, had done good service in showing the possession by uric acid and the alloxuric bases of a common radicle—purine. Smith Jerome found that feeding on foods containing nuclein always increased the output of uric acid in the urine, whilst Hopkins and Hope pointed out that the insolubility of nucleins in gastric juice precluded the assumption that they furnished the whole of the uric acid immediately following a proteid meal, and further, that the quantity of uric acid produced by a *flesh* diet was too great to be wholly due to the small amount of nuclein therein contained. But flesh, though poor in nuclein, was rich in purine bases (particularly in hypoxanthine), and this, according to Smith Jerome, accounted for much of the uric acid in the urine. The uric acid of the urine was not the whole of the uric acid produced in the body. According to Kossel and Goto uric acid formed combinations with nucleic acid, at all events, *in vitro*; such might also be the case *in vivo*. Hugo Wiener found that a "surviving" liver could destroy uric acid, as could also extracts of other organs, and Parker described excretion of purine-containing substances into the bowel. Burian and Schur stated that every healthy adult excreted in urine a fairly constant quantity of purine bases characteristic of himself and apart from his food (endogenous urinary purine); and in addition, through the same channel, purine derived directly from his food (exogenous urinary purine) in quantity characteristic of the foodstuffs and not of himself. Further work on these lines promised well for the elucidation of purine problems in general and of the particular purine problem now before them—viz., that of uric acid.

Dr. A. HAIG (London) had examined his urine on nearly 3000 days and had come to the conclusion that the amounts of uric acid and urea formed in the body bore a constant ratio to one another—viz., 1 to 35. Excretion was more variable than was formation of uric acid, owing to control over the amount of uric acid ingested and over its solubility. In this country disease due to uric acid was caused rather by its ingestion than by its formation in the body.

Dr. T. H. MILROY (Edinburgh) referred to the importance of metabolism as a factor in the production of uric acid. Uric acid could certainly be produced from nucleins in food, but equally certainly from the nucleins of living cells. Nuclein-metabolism in birds was analogous to that in mammals. Dr. Milroy would speak further on the metabolic side of the question at a later meeting of the section.

Dr. F. G. HOPKINS (Cambridge) emphasised the origin of uric acid from non-nuclear sources. Administration of fruits might greatly reduce the output of uric acid and this probably rather by preventing its synthesis than by hindering its separation when formed.

Dr. W. J. SMITH JEROME (Oxford) considered it to be proven that some of the uric acid excreted was not derived directly from food, and that as much of it as did come from food was derived from alloxuric nitrogen. He commented on the supposititious nature of many statements made on the subject.

Dr. J. HADDON (Denholm) referred many disorders of nutrition to excess of food, more particularly to that of animal origin.

Dr. HARRY CAMPBELL (London) observed that attacks of gout and gravel were rarely synchronous. The quantity of food taken was as important a factor as was its quality in relation to uric acid production.

Dr. R. J. ANDERSON (Galway) considered that the nervous system was responsible for many variations in tissue activity and in activity of excretory organs.

*Dilatation of the Pupil from Cortical Stimulation.*

A paper was read by Dr. J. HERBERT PARSONS (London) on the above subject. Experiments on dogs and cats, he said, showed that dilatation of the pupil was not necessarily associated with deviation of the eyes or other movements. It was best obtained by excitation of the "oculomotor" and "visual" areas of the cortex and was abolished by excessive anæsthetisation. When well marked the pupillary effect was accompanied by all the usual results of stimulation of the cervical sympathetic and was usually more pronounced in the contra-lateral eye. The effect was diminished but not abolished by section of both cervical sympathetics; it was, on the other hand, completely abolished by intracranial division of the oculo-motor nerves subsequently to cutting the sympathetics. Division of the corpus callosum did not prevent the effect. Excitation of the central end of a cut afferent nerve still caused dilatation after cutting the sympathetics. This must be due to inhibition of the third nerves.

Dr. E. W. CARLIER, Professor of Physiology in the University of Birmingham, read a paper on

*Changes in the Cell of the Newt's Stomach during and after Secretion.*

Much of the work done on this subject was communicated to the Association at Edinburgh and the present paper was an appendix thereto. As the cell parted with its zymogen a new substance—prozymogen—was produced by the nucleus at the expense of the chromatin. This prozymogen became zymogen, which was not discharged until the nuclear chromatin was again restored. During secretion the nucleoli increased in size, were discharged into the cytoplasm, and disappeared, new ones immediately replacing them. They were probably excreta. The paper was illustrated by microscopic preparations, lantern slides, and diagrams.—Dr. R. J. ANDERSON and Dr. T. H. MILROY took part in the ensuing discussion.

Professor CARLIER also demonstrated Microscopic Preparations of the Kidney showing Cilia-like Projections from Cells lining the Convoluted Tubules. These had not previously been shown in the case of man. Analogous cells were obviously motile in amphibia but no ciliary motion had ever been seen in them in mammals.

Dr. A. G. LEVY (London) read a paper on

*Fatigue of the Cerebral Cortex.*

The motor cortex of the cat was excited by faradaic currents and contraction of the correlated muscle recorded. This did not fatigue the muscle itself. With sustained excitation the muscular contraction was at first tonic but became clonic as fatigue supervened. The onset of fatigue was rapid, contraction of the muscle rarely lasting for more than 30 seconds. Rest restored excitability. Cortical fatigue could also be elicited by repeated short excitations at regular

intervals. Under these circumstances irregularity of response preceded failure to react. The paper was illustrated by reproductions of tracings.

Dr. D. F. HARRIS, Lecturer on Physiology in the University of St. Andrews, read a paper on

*The Inertia of Protoplasm.*

Analogy might be drawn between the inertia of inanimate matter and certain properties of protoplasm. Thus one might conveniently speak of anabolic inertia of protoplasm (i.e., its resistance to excitation) and of katobolic inertia (i.e., its tendency to continue active after cessation of a stimulus). The former state was instanced by all "latent periods," the latter by the continued activity of isolated tissues. The terms also lend themselves to description of psychical states—e.g., apathy and superstition on the one hand and habit and fanaticism on the other.

## OPHTHALMOLOGY.

WEDNESDAY, AUGUST 1ST.

*Presidential Address.*

Dr. W. A. BRAILEY, ophthalmic surgeon to Guy's Hospital, took as the subject of his address Ocular Headaches—that is, headaches in association with refractive and muscular errors. While the great majority of headaches were, he said, independent of the eyes, it was a matter of general acceptance that ocular errors produced headaches, though by no means in all cases. Were there any errors especially effective in the causation of headaches or in producing any particular form of headache? Muscular errors were by far the most important, though, of course, these must be ultimately of nervous origin. Other influences than muscles were glare and sudden irregularities in the distribution of light, such as flickering. Muscular ocular movements were intrinsic (pupillary and accommodative) and extrinsic (of the recti and obliqui muscles). The pupillary movements were unimportant except as slightly influencing glare. The accommodative movements were bound up with the great majority of ocular headaches.

It was a general law that the larger the ocular error the less the effect produced on the head, the reason being that a great defect of accommodative power led to its abandonment, the patient seeing as best he could without it. So also uncorrected presbyopia was rare as a cause of headache, except just at its commencement. It might cause strain and burning but not headache. A highly hypermetropic patient would read close with poor vision but no aching. So also patients with high hypermetropic astigmatism. Similarly great inequality of refraction gave comparatively little trouble, the worse eye being abandoned to disuse and muscular action being regulated by the better one. High degrees of myopia and myopic astigmatism produced little effect, distant objects hardly being seen, while near vision could be remedied largely by adjusting the distance. But low degrees of hypermetropia and hypermetropic astigmatism were often causes, especially when they led to an excess of effort both in amount and duration beyond that which was needed, as with weak muscles or hyper-sensitive nervous supply, this spasm of accommodation continuing in distant vision, and even under retinoscopy in the dark. But both spasm and headache were more produced by moderate inequality of refraction, especially if astigmatic and most of all by astigmatism with asymmetry of the axes. The ciliary muscle appeared to act unequally on the two sides in correcting this or a muscle even in different parts of its circuit in remedying astigmatism or asymmetry of axes. Evidence of this was seen when atropine revealed astigmatism on one side or both, increased its amount, or altered the axis of the correcting lens in amount less than 90°. So astigmatism, often unequal-sided, might become manifest when presbyopia began, and refractive defects revealed themselves to retinoscopic examination in eyes blind with fundus changes, such as optic atrophy, in proportion beyond that observed in average-seeing eyes. The above refractive errors caused aching in the eyes, often passing presently or on the following morning into the brows, immediate aching in the brows, temples, the back of the head, and occasionally also headache of the type of migraine. Treatment by appropriate glasses was of extreme value. Errors of the extrinsic muscles produced headache, but less than of the accommodative muscles, though more migraine, more giddiness, and more general distress. Here, also, the rule held that the larger the amount of error the less the disturbance, the explanation being that in considerable degrees of strabismus the image fell on the peripheral and so less acutely seeing retina.

But another potent factor in headaches was the tendency to binocular vision, and so we had another rule—the stronger the tendency to binocular vision the more headache produced by an error of the recti and obliqui muscles. Binocular vision varied much in its strength in different subjects. Possibly there were natural differences related to the centres as much as to the muscles, for he had seen such indisposition run through families. But binocular vision appeared to be generally made rather than born. Babies often squinted irregularly till after a few weeks of life they got their yellow spots gradually to accord. He had met cases where, instead of bringing them into harmony, the child had developed another retinal point to work with the opposite yellow spot in an eye congenitally squinting, though with fair concomitant movement. Rectification of such apparent squint by tenotomy would produce diplopia. Other cases were common where the two eyes remained quite independent; for example, where there was congenital want of power of both external recti from central defect diplopia was absent and the child saw to his left with the right eye, and *vice versâ*. Binocular vision was not strongly established by the early age at which ordinary concomitant squint arose; so diplopia, though present, gave no trouble, and, indeed, was little noticed even in the comparatively rare cases where each eye had normal refraction and vision. But to take the case of a paralytic strabismus—for example, of the superior oblique—suddenly arising in an adult: here was much disturbance, and the same with cases where, when the two eyes had been used for different purposes—that is one for near and the other for far—they suddenly attempted by lenses and prisms to unite the images, the results being distress, giddiness, migraine, and other headache. But extrinsic muscles might, like the ciliary, have large latent defects, and he suspected that many obscure cases of headache had their solutions here.

Besides individual tendencies other influences altered the disturbing effect of ocular errors: (1) age, the errors being most potent between the ages of 10 and 45 years; (2) sex, women being the greatest sufferers; and (3) nationality. His experience did not extend much beyond the English people and the citizens of the United States, the latter of whom were eminently affected by these errors, so that a series of medical men and operators had arisen to take charge of that special sub-section of practice. Doubtless there were other influences, such as occupation and temporary states of the nervous system.

*The Treatment of Chronic Glaucoma.*

In opening a discussion on this subject Mr. RICHARDSON CROSS (Bristol) said that he based his opinion not only upon general experience but upon 47 private cases which had been most carefully examined and noted. Although all were agreed as to the necessity of operating on acute cases, yet many held different views as to the desirability of treating chronic cases in the same manner. The first and most important question was the diagnosis, and he considered that the field of vision was of the utmost importance, and observation on this gave the most valuable information in distinguishing between some cases of optic atrophy and chronic glaucoma, the contraction on the nasal side being very characteristic. If the disease had progressed very far probably nothing would save the eye, but in all other cases he was strongly in favour of iridectomy, and the sooner this was done the better. It was a comparatively simple thing to perform the operation in an early stage with a quiet eye, but very different with the reverse condition present. In some few cases where the tendency to the disease was very slight it might be kept quiet and non-progressive for years by the aid of myotics only, but usually the disease was not stayed by this alone. He mentioned an interesting case of myopia of 3 D with glaucoma where the myopia increased to 12 D, but the glaucoma got no worse. He then showed various charts of fields of vision both before and after treatment with myotics and iridectomy, and in most an increase of the field followed the diminution of tension. In one case considerable improvement followed iridectomy, but it subsequently deteriorated. He thought sclerotomy a most useful operation and proferred to do it with a keratome rather than with a Graefe's knife, and in the early stages he preferred this operation to iridectomy. He also considered that blindness would

follow in any well-marked case if drugs alone were relied upon.

Dr. J. HERN (Darlington) thought that the early diagnosis was the one thing needful and he considered that the relation between glaucoma and optic atrophy was very intimate. He was much in favour of establishing a communication between the anterior chamber and vitreous by passing a knife backwards (after iridectomy) through the cornea and suspensory ligament.

Mr. WORK DODD (London) said that his experience of iridectomy was not very satisfactory and he had been led in one case to excise the superior cervical ganglion of the sympathetic with immediate benefit.

Dr. KARL GROSSMANN (Liverpool) had seen much benefit arise from the sub-conjunctival injection of normal saline solution, and he sometimes increased the strength to 2 per cent.; this could be repeated every day for a week or longer.

Mr. E. D. BOWER (Gloucester) was in favour of prolonged treatment with eserine and cocaine. His experience of iridectomy was that in many cases the disease progressed.

Mr. GEORGE A. BERRY (Edinburgh) said that he used myotics for a long time only in the very early stage of chronic glaucoma, but this sometimes lasted for a very long time and he mentioned one case in which the sight was no worse 18 years after the disease was discovered. In all other cases he advised iridectomy and the sooner it was done the better. He preferred the keratome for both sclerotomy and iridectomy.

Mr. DEVEREUX MARSHALL (London) thought that the operation proposed by Dr. Hern was a very dangerous one and that injury to the lens and ciliary body would be very likely to occur.

The PRESIDENT thought that the disease was cured when the tension was normal, but atrophy of the optic nerve might progress and cause loss of vision. He favoured very early operation in nearly all cases.

Mr. RICHARDSON CROSS briefly replied.

Dr. KARL GROSSMANN demonstrated a lantern which he had invented for the detection of low degrees of colour-blindness.

Mr. SYDNEY STEPHENSON (London) read a paper on the Etiology of Phlyctenular Affections of the Eye. He noticed that in a very large number of cases there was either eczema or tuberculous tendency.

In the absence of Mr. G. FOGGIN his paper on Epicanthus was read by the SECRETARY, Mr. W. W. Sinclair. The author pointed out that the flatness of the nose was probably due to undue tightness of the cheek-muscles and tissues preventing the proper expansion of the nasal bones. He suggested a new method of raising the flat-nose bridge by means of subcutaneous division of tissues.

## DISEASES OF CHILDREN.

WEDNESDAY, AUGUST 1ST.

Dr. NESTOR TIRARD (London) introduced the subject of

*The Nature and Varieties of Pneumonia in Children*

in a very lucid and interesting paper. Pneumonia, he said, in adults was a very satisfactory subject to lecture about on account of its well-marked character, physical signs, and symptoms, the chief variations from type being due to more or less involvement of the lung substance or to constitutional or acquired tendencies, such as alcoholism, of the patient. There were decidedly greater difficulties in dealing with pneumonia in children. Broncho-pneumonia seemed to have attracted more attention in children, hence some of the difficulty in diagnosis. The distinction was not well defined between broncho-pneumonia and vesicular bronchitis. Broncho-pneumonia was common in children up to the age of three years, after that age many cases conformed to the true lobar or croupous kind. The extent of the lung engorgement was greater in children than in adults, and this probably was responsible for the confusion with broncho-pneumonia. A general infection was evident in considering the symptoms and signs of acute pneumonia in children. This general infection had been attributed to the action of various micro-organisms, pneumococcus, &c., hence an anti-pneumonic serum had been used; but the subject had not yet reached a satisfactory stage. It was very doubtful whether pneumonia was really contagious. Dr. Pepper, the well-known American pharmacologist, had, indeed, given a series of instances, but generally contagious pneumonia had been pneumonia closely following influenza. The cases already in a ward did not produce more cases of pneumonia in those already there for other complaints. One case was quoted of a nurse who had nursed a patient suffering from diphtheria and who developed pneumonia and died. Speaking of abnormal forms of pneumonia Dr. Tirard said that the temperature might be abnormally high, say up to 106° F., either at the beginning or just before the crisis; there might be an unusually sharp crisis and a fall of 9, 10, or 11½ degrees; and there might be wide oscillations of temperature (5 degrees of difference—e.g., between the night and the morning temperatures) which was apt to confuse diagnosis. In one case the crisis occurred as usual at the fifth day; in a second the oscillations kept on for some weeks. This keeping up of the temperature might be due to other causes, such as an attack of diarrhœa or to extension of disease to other lobes of the lung. The initial symptoms were occasionally like those of tuberculous meningitis—headache, squint, retraction of the head, and vomiting, or the sickness and delirium might suggest cerebral tumour. As to abnormal physical signs, in spite of high temperature (of tableland character), rapid respiration, and all indications that the child had pneumonia, there might be no physical signs observable. In two cases quoted the physical signs (dulness and tubular breathing) only appeared at the crisis. Dr. Tirard gave a bad prognosis in the case of anæmic infants. He suggested that the cerebral symptoms and high fever were probably due to the retention of toxins in the blood in place of their being eliminated by the lungs. The difference in type might be due to different organisms, such, for instance, as the influenzal kind, which was not quite a true lobar pneumonia. He also touched upon the gradual development of tubercle out of an attack of presumed pneumonia.

Dr. LORIMER HART (London), after congratulating Dr. Tirard on his introduction to the discussion, dealt with the various forms of broncho-pneumonia, vesicular bronchitis, and pneumonia. His explanation of the nurse's case alluded to by Dr. Tirard was that it was a true diphtheria of the lung. He had seen six cases of pneumonia (in adults) in which the patients all died from heart failure; this he suggested was due to contagion, and in these cases possibly the anti-pneumonic serum might be of service. He believed that cases of pneumonia in children which presented cerebral symptoms were nearly always cases of special disease of the lung. Further, where the physical signs were late in appearing he suggested that the explanation lay in the disease gradually spreading from the interior of the lung to the surface. He considered that it was possible to arrest the progress of the complaint, engorgement of the lung in some cases not advancing.

Dr. H. O. NICHOLSON (Edinburgh) gave some valuable information on the question of pulse and blood-pressure in this disease. After the third day the pulse was dicrotic and the blood-pressure was low. In croupous pneumonia at the onset the pulse was hard and at high pressure, and after three days or so it was dicrotic and at low pressure. The tracing was irregular and the pulse was rapid. It was in some cases very like that gained from a tracing of mitral stenosis. In broncho-pneumonia there was not the same high tension at first nor quite the same tendency to fall. In unfavourable cases the high-tension pulse persisted. The chief indication of treatment suggested by study of the pulse was to sustain the blood-pressure. Digitalis did not seem so useful as strophanthus, strychnine, and carbonate of ammonia. In the first day or two of croupous pneumonia antimony was of much value.

Dr. A. M. GOSSAGE (London) dealt with the relationship of lobar and lobular pneumonia. Both might be due to the same pneumococcus. Clinically they were not much alike. Possibly the lobar pneumonia case got infected through the blood, the lobular through the lungs, and cases were met with where there was great difficulty in assigning them to one or the other. He explained that sometimes lobar pneumonia preceded lobular pneumonia. He thought that the question of the pneumococcus as the cause of pneumonia was not quite settled yet, as the coccus was found in other conditions. He dwelt on the varieties of pneumonia, insisting on an epidemic form.

Dr. W. S. FENWICK (London) said that at the commencement occasionally there was violent abdominal pain, in cases where the pneumonia started low down in the lung and the accompanying pleurisy affected the diaphragm. He quoted one case attended by severe opisthotonos, suggesting

meningitis; on the third day there was a patch of consolidation in the lung and as this cleared up the child got well. Another method of onset was by acute gastro-intestinal catarrh. For this he gave a bad prognosis, those cases starting in this fashion being generally fatal. The prognosis of pneumonia was difficult in children; those cases wherein a rapid distension of the bowel took place were nearly always fatal.

The PRESIDENT (Dr. F. TAYLOR of London) said that if they believed, as was customary now, that pneumonia was due to the infection by a toxin, they need not be surprised at the varieties of the disease. He had had two cases (not in children) where there was most severe abdominal pain at the onset of acute pneumonia; also, dealing with the question of contagion, he mentioned that he had seen four or five children attacked almost simultaneously by pneumonia, several years before the last invasion of influenza, and he considered this due to a contagious cause in all probability. He would agree to allow that the conveyance of contagion from one person to another must be very rare. He could hardly agree with the idea of the toxins being eliminated by the lung, as the fibrin exuded into it was not all expectorated but mainly absorbed. He then dealt with the question of high type and low type and the different varieties of pneumonia. Generally speaking, if the patches were large it was lobar pneumonia, if small lobular. He described three types of temperature: (*a*) that of the sudden rise, level, and sudden fall; (*b*) long oscillating temperature lasting two or three weeks; (*c*) short oscillating temperature ending on the fifth or sixth day.

Dr. T. D. LISTER (London) had examined many cases of broncho-pneumonia in children and post mortem he had never failed to find the pneumococcus. Sometimes the staphylococcus also was present. The consolidation of the lung in children under two years of age was of the catarrhal type. In ordinary sero-fibrinous pneumonia the infection took place probably through the blood, in catarrhal pneumonia or broncho-pneumonia through the air-passages or by direct extension of disease down the bronchi and tubes.

Dr. TIRARD, in replying, said that he would differentiate between capillary and vesicular bronchitis rather by whether the child died from asphyxia before the consolidation of the lung occurred. As he suggested the toxins were not eliminated by the lung and so they were retained and gave rise to symptoms. The comparative absence of physical signs in cases with cerebral symptoms explained itself by the poison retained in the blood causing the cerebral symptoms. His experience did not make him agree that apical pneumonia was generally attended by cerebral symptoms. He was also not at all sure that deferred physical signs were due to the spread of the disease from the centre to the surface of the lung. He commented on Dr. Nicholson's pulse studies and their value as giving suggestions for treatment. He considered that contagious cases of pneumonia were really cases of influenza followed by pneumonia. He would not consider an ordinary case of pneumonia in the ward in any way a source of danger. He concluded by thanking the meeting for their attention and congratulating the President on the good discussion which had been raised.

## LARYNGOLOGY AND OTOLOGY.

### WEDNESDAY, AUGUST 1ST.

The PRESIDENT (Dr. SCANES SPICER of London) read his address which was published in THE LANCET of August 4th (p. 369).—A discussion on

*Intra-nasal Treatment in Ear Disease*

was then opened by Dr. P. MCBRIDE (Edinburgh). He divided the subject into (1) the conditions of the ear liable to be affected by nasal changes, and (2) pathological conditions of the nose likely to involve the ear.—Dr. McBride was followed by Dr. CRESSWELL BABER (Brighton) and Dr. DUNDAS GRANT (London).—The discussion was continued by Dr. HERBERT TILLEY (London), Dr. JOBSON HORNE (London), Dr. WATSON WILLIAMS (Bristol), Mr. RICHARD LAKE (London), Dr. HOLBROOK CURTIS (New York), Dr. HEMINGTON PEGLER (London), and the PRESIDENT.—The openers of the discussion having replied the meeting adjourned. The time required for the discussion did not permit of any papers being taken.

In the course of the morning the section adjourned to that for Diseases of Children to take part in the discussion on a paper by Dr. J. THOMSON and Dr. LOGAN TURNER on the Causation of Congenital Stridor.

## TROPICAL DISEASES.

### WEDNESDAY, AUGUST 1ST.

The PRESIDENT, Colonel K. MACLEOD, called upon Dr. DUNCAN for his paper on

*Quinine: its Action and Mode of Employment.*

Dr. ANDREW DUNCAN, I.M.S. (ret.), opened the discussion on this subject by reading a paper in which he dealt with the several opinions declared by medical men of many nationalities. French observers generally were of the belief that in the milder form of malarial fevers quinine was valuable as a prophylactic but that in the pernicious form it was well-nigh useless. The Austrians and Russians found no advantages from the use of quinine as a prophylactic. In India several observations had been made on this subject; as an example at Peshawur in 1886 during the autumn 1203 men took quinine with an admission of 10·22 per cent. for malarial fever, whilst among 1202 men who had no quinine the admission rate for malarial fever was 27·28 per cent. During the Ashanti War of 1873 no good results were notified from taking quinine as a prophylactic and the same was recorded during the Ashanti War of 1896. An investigation on this subject was instituted on the West Coast of Africa by Mr. Chamberlain on the recommendation of Dr. Manson, with the result that quinine was considered as an efficacious protection in 87·7 per cent. of the cases tested. Dr. Duncan contrasted the action of several other drugs with quinine. Of these arsenic, nim bark, berberis, narcotine, kreat, and inderjas were the drugs employed, but the action of all was inferior to that of quinine in the time they took to effect a cure. Dr. Duncan believed that quinine probably acted by destroying the malarial organism.

Major W. J. BUCHANAN, I.M.S., superintendent of the Central Jail, Bhagalpur, Bengal, communicated a paper on the Prophylactic Issue of Quinine: a Synopsis of an Experiment on a Large Scale in Indian Jails. He discussed the arguments for and against the so called "prophylactic issue" of quinine. In 1894 the experiment of giving daily or several times a week a dose of quinine or cinchonidine to every prisoner was tried in the Punjab. During the year the experiment was tried the sickness and mortality rates for the Punjab jails were so good that it seemed as if the good results were to a great extent due to the issue of quinine.

Dr. FIELDING-OULD (Liverpool) read a paper on the Administration of Quinine with Special Reference to the Practice on the West Coast of Africa. He was of opinion that the beneficial action of quinine was due to the death and subsequent disintegration of the malarial parasite caused by the use of the drug and to the fact that quinine bound more closely to the hæmoglobin the oxygen present in it. Blood rich in malarial parasites but strongly impregnated with quinine was incapable of causing malarial infection when injected into a healthy person. Dr. Fielding-Ould objected to the use of the word "prophylactic" as applied to the exhibition of quinine. The drug could not prevent malarial infection but only attacked the parasites that were in the blood in a certain stage of their development. Unless young amœbulæ were present in the blood quinine could only do harm. In regard to treatment quinine was the sheet-anchor and might be administered by the mouth, by the rectum, or hypodermically, as occasion served.

The reading of these three papers was followed by a discussion.

Dr. PATRICK MANSON (London) remarked that quinine could only exercise its therapeutic action on the blood of persons residing in malarial infected countries when the parasite was present in the blood. To arrive at a scientific conclusion concerning the prophylactic use of quinine it would be necessary first to ascertain the kind of parasite present in the locality and then to administer the drug, as in the milder forms of malaria quinine was no doubt both prophylactic and curative, but in the pernicious forms its power was uncertain. Dr. Manson considered it important to ascertain the condition of the digestive organs before administering the drug, as in gastro-intestinal catarrh to give quinine by the mouth was to court disappointment in its action.

Lieutenant-Colonel MARSDEN, I.M.S., said that he had invariably given quinine both as a prophylactic and as a

therapeutic agent and the results were nearly always satisfactory. He mentioned one case of hæmoglobinuria positively traced to dosage with quinine, but he had only seen one case in 20 years' experience.

Mr. D. C. REES (London) gave his experience of quinine used as a prophylactic in Nigeria. He found that quinine given in five-grain doses daily, although it did not afford marked prophylaxis, served to lessen the severity and also the case-mortality of the attacks.

Dr. C. F. HARFORD-BATTERSBY (London) gave his personal experience of the use of quinine in Central Africa and came to the conclusion that it was highly efficacious. He had not seen any ill-effects from its administration.

Major E. WILSON, R.A.M.C., stated that in the Ashanti Expedition of 1895 quinine was tried for a time as a prophylactic and was discarded. He did not believe in heroic doses and had never seen blood in the urine after taking quinine.

Dr. B. S. RINGER (Canton) recorded a case in which complete blindness resulted from quinine taken in large doses. The patient, however, recovered the sight completely under iodide of potassium.

Lieutenant-Colonel MAITLAND, I.M.S., asked for information concerning treatment by methylene blue. He had had good results in his own practice from its administration. He stated that he had given quinine to pregnant women without any untoward effects.

Mr. JAMES CANTLIE (London) brought forward a case in which quinine was administered to a child aged four months by giving four grains thrice daily to the mother who was herself nursing the child and a quarter of a grain to the child with satisfactory results. He asked for information concerning the efficacy of giving the mother quinine as a means of treating fever in a child whom she was suckling.

Dr. HENDERSON (Shanghai) considered the administration of quinine to pregnant women as very likely to cause abortion. He advised opium to be given with the quinine if the state of the patient demanded quinine in the pregnant state.

Major RONALD ROSS, I.M.S (Liverpool), stated that he believed that a "secondary" fever occurred in old malarial cases, due probably to enlargement of the liver and spleen. The fever was of a continued type, was not directly due to the parasites, and was not amenable to quinine.

Dr. GUTHRIE RANKIN related a case where hæmoglobinuric fever developed in a young man in 14 months after proceeding to Central Africa. The patient had never taken quinine as a prophylactic. When he returned to Africa he took quinine as a prophylactic and had no return of the disease during a residence there of two and a half years.

Lieutenant-Colonel OSWALD BAKER, I.M.S. (ret.), was of opinion that the prophylactic dose of quinine was usually too small and advised the same dosage for prophylaxis as for curative purposes.

The PRESIDENT strongly advocated Dr. Manson's view that the nature of the parasites infecting the blood should be ascertained before or during the administration of quinine. Koch recommended microscopical examination as a means of detecting malarious infection in a community as parasites might exist in the blood without pyrexia; this, although a laborious means of dealing with the disease, was necessary if the attempt was to be made to get rid of malaria by giving quinine.

Lieutenant-Colonel J. MAITLAND, I.M.S., read a Note on the Etiology of Filariasis. The discovery of the filarial parasite in the proboscis of the mosquito by Dr. G. C. Low of the London School of Tropical Medicine was not, in his opinion, conclusive evidence that filarial disease was spread by the bite of the mosquito. He was of opinion that it was a water-borne disease in all probability, and he ascribed the immunity of Europeans in the tropics to filarial infection to the fact that they drank boiled or filtered water.

A paper was communicated by Captain J. P. JAMES, I.M.S., on the Metamorphosis of the Filaria Sanguinis Hominis in Mosquitoes, especially with reference to its Metamorphosis in the Anopheles Rossii and other Mosquitoes of the Anopheles genus. Captain James was of opinion that the period of filarial metamorphosis in the mosquito had hitherto been stated at much too short a time. He held that in those cases in which seven days had been stated as the period required, the idea had likely arisen from the fact that the mosquitoes had bitten a filarial infected person before the observations were commenced.—Dr. MANSON and Mr. REES took part in the discussion, the latter stating that some species of mosquitoes served better as hosts for the filaria than others. He believed, in opposition to both Dr. T. L. Bancroft and Captain James, that the filaria nocturna cast its sheath in the mosquito's stomach before penetrating to the thoracic muscles.

Major BUCHANAN, I.M.S., communicated a paper on the Hot Weather Diarrhœa of India in which he described a form of "choleraic diarrhœa" in India similar to cholera nostras and the summer diarrhœa met with in England. He was of opinion that in India, as in England, non-infected cases of intestinal flux might occur during the hot weather.

Dr. GEORGE THIN (London) communicated a note on a case of Blackwater Fever (with specimens). The paper was based upon the results of an examination of organs and tissues which had been sent to him from Central Africa by Dr. Douglas Gray from a patient who died from hæmoglobinuric fever. The patient had always used a mosquito net. The specimens showed melanin in the spleen, in the liver, and in the kidneys, and in the case of the kidneys degenerative and destructive changes in the secreting epithelium of the tubules as well. Dr. Thin was satisfied from the appearance of the organs that the patient had died from acute malarial fever in which the hæmoglobinuria was a concomitant symptom, and although the parasites were absent in the tissues of the spleen, liver, and kidneys the fact did not militate against this view.—Dr. MANSON and Mr. REES joined in the discussion and Mr. Rees stated that from an examination of the organs of this patient he had come to a conclusion opposite to that arrived at by Dr. Thin.

Dr. ANDREW DUNCAN read a paper on the Diseases of Goorkhas. A form of malaria peculiarly resistant to quinine was prevalent amongst Goorkhas. Phthisis, mumps, and measles were prevalent amongst soldiers in the Goorkha regiments, but enteric fever was almost unknown. The married men in the Goorkha regiments were liable to ophthalmia caused by the way in which the married women shut up their houses and from the insanitary nature of their surroundings.

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## THE NAVY, ARMY, AND AMBULANCE.

### WEDNESDAY, AUGUST 1ST.

The meeting opened with an address from the President which will be found at p. 371 in THE LANCET of August 4th. Inspector-General NINNIS'S address was followed by papers chiefly interesting to those engaged in the organisation of field and base hospital arrangements and the composition and *personnel* of the various corps and companies needed for removal of the wounded from the battlefield to the hospital, their services as first aid, and their subsequent care of the wounded and sick in hospital.

The first paper put down to follow the address of the President was one by Surgeon-General J. B. HAMILTON,

*On the Past, Present, and Future of the Royal Army Medical Corps,*

but was postponed owing to the unavoidable absence of Surgeon-General HAMILTON, and the secretary, Surgeon-Captain JAMES HARPER, V.M.S.C., read instead a paper for Surgeon-Lieutenant-Colonel J. E. SQUIRE, V.D., who was absent from the meeting. The paper was entitled

*On the Augmentation of the Royal Army Medical Corps for War.*

It reviewed briefly the present composition and arrangements of the Royal Army Medical Corps, its difficulties as regards adequacy of *personnel*, and pointed out how such necessary augmentation should be carried out. The author deprecated the employment of civilians intermixed with the regular forces of the Royal Army Medical Corps as tending to be subversive of discipline, as there would arise great laxity, as he no doubt supposed was the case now in South Africa. He then proceeded to point out that the civilian and auxiliary medical assistants should have such training as would entitle the War Office to call upon them from time to time with that confidence in their training and powers of maintaining discipline which a knowledge of their previous partial training would impart to the authorities.

The above paper was followed by a paper by Brigade-Surgeon-Lieutenant-Colonel GILES, V.D.,

*On Volunteer Medical Organisation.*

The following discussion on these two papers took place.

Mr. TREVES (London), late consulting surgeon to Her Majesty's Forces in South Africa, said that with reference to

the question of transport raised by these gentlemen in their papers it appeared that there was an impression in this country that the medical department in South Africa was deficient in transport. Now, every hospital of 100 beds had its own transport. It was very difficult indeed to make a field hospital mobile. Hospitals composed normally of 300 beds had been suddenly swelled into hospitals of 800 beds as the result of sickness, fever, &c. There was, therefore, the natural result that transport for the latter would, of course, seem inadequate, as that for a small hospital had to do duty for a larger one. Nevertheless, this most unprecedented demand on the resources of the department had been well met and the hospital work was done most efficiently. Judging from experience of the campaign in South Africa it seemed that it would be a distinct advantage if a large hospital followed an army in the field, with its situation somewhere near the general's headquarters. With regard to the working of the civilians, medical men, nurses, orderlies, &c., in South Africa, there was a distinct misconception as to their not pulling with the members of the regular forces. Everyone worked cordially for the success of the medical arrangements, and there was the utmost generosity and cordiality displayed on all sides by everyone, and whether in field or in hospital the utmost harmony prevailed. The orderly himself as an individual was an incredible difficulty. Nurses could not go into a field hospital, though the nurses worked splendidly at Colenso. He (Mr. Treves), through the great courtesy of the War Office, was himself provided with splendid transport and relays of horses and mules. He was thus able to take two nurses up country. Nevertheless, the nurses ought not to go beyond the base hospital. The orderly must therefore be depended upon. At present, as he is, he is an impossible person. He was neither man nor woman; he had to pitch and strike tents, dig trenches, act as porter, and then, perhaps, be called upon to assist at an abdominal section. Water being so scarce as it was in South Africa it frequently occurred that surgical cleanliness was not always as it ought to be, nor could it be carried out. The burning questions were, How could they obtain proper orderlies, what prizes could be given to induce proper and suitable men to come forward, and what could be done to induce them to enter the army? The formation of a reserve of properly-trained orderlies, bearer companies, and medical reserve ought not to present any difficulty. Young medical men, of whom there were a great many suitable from among those obtaining qualifications, might serve three years, one year with the colours and two years in the reserve. By the above methods he thought that the Royal Army Medical Corps, already so efficient, could be made as perfect as it was possible for human efforts to effect.

Surgeon-Major G. A. HUTTON (Leamington) said it was a wonderful thing that the Director-General could lay his hands on from 400 to 500 civilian medical men and 1500 St. John Ambulance Corps men. He wished to corroborate Mr. Treves as to the efficient manner in which the War Office and the medical department had carried out what was required of them. They must all remember that they were only human institutions and as such they could only hope for that degree of human perfection which was reasonable. He himself had been told by generals and those in authority that the Royal Army Medical Corps was splendidly represented and was most efficient. Under the circumstances more than was done was humanly impossible.

Dr. FORBES ROSS (London), speaking entirely as a civilian medical member, but from a public health point of view, wished to call attention to a point which might tend to clear up a great deal of the supposed neglect. If after such a sojourn as the troops had at Modder river, followed by exposure and continuous fighting on short rations, typhoid fever broke out, it was entirely an unforeseen matter. Now, if 10,000 men had an attack fever-rate of 5 per cent. this would give 500 enteric fever patients. This would require 500 beds and, from the nature of enteric fever, the changing of 500 pairs of sheets and blankets daily, and in addition these must be disinfected, for they were a distinct source of danger if not properly washed and stoved, for they would act as means of disseminating enteric fever among the wounded and other sick. It might also be looked at as a blessing that beds and bedding were not to hand, as by this means alone a terrible epidemic much worse than the present one might have been started. He advocated the digging of the ground over a surface of about six feet by two feet six inches, the soil thus disturbed to be broken up and raised six inches from the surrounding ground; this when spread with a waterproof sheet would provide a comfortable bed and could be changed from time to time and needed no such extensive transport as would the projecting of the amount of hospital equipment desired by those persons who forgot that this was primarily a war and not an expedition fitted out for the express purposes of treating enteric fever *al fresco* on the veldt, and ought therefore to have been equipped regardless of expense and transport, needed or available.

Surgeon-Captain J. CANTLIE, V.M.S.C., then contributed a paper on

*How to Link the Militia, Yeomanry, and Volunteer Medical Services with the Royal Army Medical Corps.*

He advocated the bringing into line of the Volunteer, Militia, and Royal Army Medical Corps, to do away with the word "staff" as applied to the Volunteers, and have all the branches designated as "Medical Corps." He would have the men in any of the branches freely interchangeable for purposes of service and augmentation of the Royal Army Medical Corps. Among other things he deprecated the training of medical students along with and at the same time as the men of the bearer companies, for it was not proper that these future officers should occupy this position. In no other service were the cadets compelled to go through a similar experience.

This paper was followed by a paper by Brigade-Surgeon Lieutenant-Colonel G. S. ELLISTON, V.D., on

*Brigade Bearer Companies.*

He recounted the troubles and difficulties he went through, and the organisational difficulties experienced in order to bring the *personnel* of the medical staff as regards training to their proper state of efficiency.

These two papers were discussed by the following gentlemen:—

Surgeon-General J. B. HAMILTON said that Surgeon-Captain Cantlie's paper brought to mind the regretted loss of the Militia Medical Service of the army. That loss was the greatest possible blow to the army. There was a loss of men with good county connexions who did recruiting work well. No one now took their place. Only two per 1000 medical officers in the militia would have been a great help in South Africa. Every officer of a militia battalion got 4*s.* per diem with the exception of the militia medical officer, but this had now been remedied. The auxiliary branches were too scattered. The Army Medical Reserve was the greatest possible humbug which was ever started. A member could wear a uniform, but when called upon for service he would hardly leave a good practice to accept £270 per annum. In the past men could not be got to train for bearer companies. The proper thing would be to have bearer companies separate from the regiment. They must form a reserve of nurses, but that proposal made by him some years ago was sat upon by the War Office, but now they were coming round in this matter. The increase of the Royal Army Medical Corps could be done by the reconstitution of the Militia Medical Service and amalgamated and employed with them if necessary. Put them in a simple uniform and recognise their rank and position.

Surgeon-Major G. A. HUTTON made a few remarks on the number of militia officers now with the forces.

Major E. M. WILSON, C.M.G., D.S.O., said that militia officers were doing excellent work side by side with the Royal Army Medical Corps.

Surgeon-General T. F. O'DWYER, Principal Medical Officer of the Aldershot District, said that volunteer bearer companies were recognised and encouraged by the War Office. Their training was not satisfactory. There should be more attempts to train them in hospital duties; at present they were only trained in first aid and field duties. They should be encouraged to present themselves at the hospitals to be trained. It was unpleasant to say some things, but he was afraid many volunteers only looked upon training as a picnic. The volunteer brigades had five days' training but during that five days they learned nothing. Some few who had come to hospital for training liked it and took pleasure in it. Medical students were not desirable members of bearer companies. The civilian element was better than

persons who might afterwards become members of a superior branch of the service, as medical students often left when most efficient. Militia surgeons must be properly trained if they were to be introduced again.

Brigade-Surgeon Lieutenant-Colonel ELLISTON, V.D., said that brigade bearer companies carried out hospital duties in his department. Only last Tuesday he had 10 cases of heat-stroke and was able to provide an orderly for every case separately. The men were most efficient and this was the case with those whom he had sent to South Africa.

Surgeon-Captain J. CANTLIE proposed the following motion as the outcome of his paper:—

That the Navy, Army and Ambulance section request the council of the British Medical Association to appoint a committee to draw up a scheme to be forwarded to Government for the reorganisation of the medical services of the auxiliary forces on the basis of the system of the Royal Army Medical Corps and for the purpose of bringing the medical services of the regular and auxiliary forces into unison.

The motion as first proposed limited the committee to five members, but on the motion of Surgeon-General J. B. HAMILTON the limitation of the committee to any particular number was dropped and the motion was unanimously passed as above.

Surgeon-Captain J. HARPER, V.M.S.C., said that it was most difficult to get up *esprit de corps* among the men of a bearer company, and unless this was done no good could be done with the men. This he had tried to do with a good deal of success. He had now 20 very efficient men with the Yeomanry in South Africa.

Brigade-Surgeon G. KING also spoke.

## THE ANNUAL MUSEUM.

(*Continued from p. 374*)

### II.—FOODS AND FOOD PRODUCTS.

No very novel departure could be noted in regard to special foods. One feature, however, consisted in the number of special milk preparations and milk products that were shown. During recent years strong endeavours on all sides have been made to separate the nutritious constituents of milk without injuring their nourishing properties. As a rule proteids undergo some change in the course of separation which affects their original food value, but in this direction certain successes obviating this deterioration have been met with, judging from the good physiological results obtained on administration of the proteid so separated.

Turning to milk itself there were several stalls devoted to modified specimens of this natural food which have been called into request by the teachings of modern physiological and bacteriological inquiry. No better examples of so-called humanised milk, sterilised milk, with and without cream, modified milk, &c., could be mentioned than those shown by the Aylesbury Dairy Company, Limited, who evidently conduct their business on strictly scientific lines, retaining for that purpose both chemical and bacteriological experts. Indeed, this company are prepared to supply pure milk foods exhibiting a composition in accordance with that which the medical practitioner may desire to prescribe. Of condensed milk there were several well-known brands and it is satisfactory to note that special care is taken to secure a maximum of cream in the concentrated product. The Anglo-Swiss Milk Company of 10, Mark-lane, London, E.C., exhibited amongst other things specimens of their Ideal milk which is unsweetened and sterilised and which contains a proportion of fat consistent with the degree of concentration. Besides concentrated milk Mr. Henri Nestlé of 48, Cannon-street, E.C., brought to the visitors' notice a food the composition of which shows it to contain all the elements necessary for the sustenance and growth of infants. It is worth while adding that this exhibit included also a condensed milk without the addition of sugar. The proportion of fat contained in the condensed milks of this firm is the maximum. Dry milk products were represented at several stalls. That of the Plasmon Syndicate, Limited, of 56, Duke-street, Grosvenor-square, W., attracted considerable interest, since Plasmon appears to be separated in such a way from milk as to leave the nutritive properties of the proteid unimpaired. Analysis shows plasmon to consist of the casein and albumin of milk together with the milk salts, the whole being soluble in water. According to Virchow, plasmon is not in any degree inferior in nourishing value to that of its equivalent of proteid in milk. It would thus appear that plasmon, which practically consists of the separated proteids of milk, loses no fraction of its nutrient value in the course of separation. Yet another milk product is "Protene" of the Protene Company, Limited, 36, Welbeck-street, S.W. This is again the proteid of milk separated by a special process. It provides an excellent adjuvant to most foods, raising to an important and certain degree their flesh-forming equivalent. The preparation has been analysed by ourselves, and the report appeared in THE LANCET of Nov. 5th, 1898 (p. 1207). Among the interesting preparations shown at this stall were some diabetic foods enriched with "protene," but practically free from carbohydrates while palatable to the taste. "Tropon" (Messrs. Arthur Reiner and Co., Dashwood House, Old Broad-street, London, E.C.), which is described as a natural pure albumin, is of course a product related to the separated proteid of milk, since it contains approximately the same proportion of nitrogen. We have described it fully in our analytical columns, but we may add that it forms an excellent adjuvant for enriching foods, more especially in regard to their nitrogenous value. On the other hand, "Somatose" of the British Somatose Co., Limited, of 165, Queen Victoria-street, London, E.C., is a digested albumin containing true proteoses. It is soluble in water and being a normal product of gastric digestion is readily assimilated. It may be used with advantage in conjunction with most foods and is well adapted for this purpose since it is practically tasteless. Somatose occurs combined with iron, a combination which admits of the administration of iron without gastric disturbance. The interesting dietetic products of Messrs. Fairchild Brothers and Foster of Snow Hill Buildings, London, E.C., are well known. On the present occasion the exhibit included "Pepsencia," an agreeable fluid with marked digestive properties owing to the presence of gastric enzymes extracted directly from the peptic glands. Again, "Panopepton" is prepared by an ingenious process whereby its constituents, derived from beef and wheat flour, are digested and therefore are presented in an easily assimilable form. This firm's peptogenic milk powder is designed for the purpose of extemporising fresh humanised milk in the home. Analyses have shown that by adding peptogenic milk powder to cows' milk in the proportions directed a product is obtained in remarkable conformity with the composition of human milk. The exhibit included pure "Pepsin" and "Trypsin" as well as "Zymine powders" for the preparation of peptonised milk. Messrs. Van Abbott and Son, of 104, Wigmore-street, Cavendish-square, London, W., presented to view an excellent assortment of foods for invalids and for diabetics and dyspeptics. It is remarkable with what success this firm has been able to prepare foods minus carbohydrates which yet are palatable and acceptable. The exhibit also included some nutritive beef biscuits which contain 20 per cent. of mosquera beef meal, with its finely divided fibre and unaltered albumin and peptones. The biscuits therefore are highly nutritive. In a kind of annexe Messrs. Callard and Co. of 65, Regent-street, London, W., occupied a stall devoted to diabetic foods and certain other prepared foods suitable for those burdened with obesity or troubled with gout and indigestion. Lastly, diabetic marmalade is an excellent acquisition amongst the special foods which have comparatively recently been introduced by this firm. Nearly opposite was an excellent assortment of specialities for invalids on the stall of Messrs. Brand and Co., Limited, of 11, Little Stanhope-street, Mayfair, London, W. Besides the essences of beef, mutton, veal, and chicken, this firm showed a meat juice which is derived from meat in the cold and therefore represents the most nourishing portion of this animal food. An excellent way of administering this meat juice is to mix it with effervescing mineral water. The assortment comprised a very valuable series of special foods of animal origin. An important novelty in the direction of foods is "Marvis," which is described as the new fish food consisting of a dry white powder with a pleasant fresh smell of fish which yields a soup of undoubtedly nourishing value and very palatable to the taste. The process of preparation is evidently conducted with care, since the product possesses a delicate flavour of the fish which is so generally spoilt by transit. This interesting departure is being undertaken by the Patent Fish Food Syndicate of Upper Greenock. A useful food adjunct is "Albene," a vegetable fat which has been carefully refined. For cooking purposes it is an excellent substitute for butter, as it is not

liable to change and is odourless and tasteless. This preparation appears to offer certain advantages of undoubted importance in the cooking of food which call for special remark. This attractive-looking fat is prepared by Messrs. Broomfield and Co. of 83, Upper Thames-street, London, E.C. Messrs. Cadbury Brothers, Limited, of Bourneville, near Birmingham, showed several of their noted preparations, the basis of which is pure cocoa made from high-class bean and containing absolutely no "additions." Whatever definition may be adopted as to what is pure cocoa Cadbury's cocoa will be certain to be placed well within the mark. Mellin's food for infants and invalids is well known, the feature of this food being that the starches derived from the several cereal grains are modified by diastase, which fact is much in favour of the digestibility of the preparation. The exhibit of the company (Mellin's Food, Limited, Marlborough Works, Stafford-street, Peckham, London, S.E.) included also some "food biscuits" containing a high proportion of soluble nutritives and a cod-liver oil emulsion finished in such a physical condition as to promote the easy absorption and assimilation of the powerful tonic and nutrient agencies which cod-liver oil is known to contain. A very interesting series of special foods was exhibited by Bovril, Limited, of 152–166, Old-street, City-road, London, E.C. These preparations are so well known as to call for little further remark. Mention, however, should be made of invalid bovril, which contains a rich proportion of unaltered albumin and is therefore a powerful nutrient and restorative for invalids; of bovril meat juice, which is expressed in the cold, an excellent sustainer; and of examples of the emergency rations and military foods used in the present campaigns. Virol, Limited, is now associated with the Bovril Company, the virol products being more strictly set apart for special medical requirement. Thus, virol is a powerful food and tonic because it is easily assimilated and is composed of rich food-forming material, red bone-marrow, &c. The excellent meat preparations of Liebig's Extract of Meat Company, of 9, Fenchurch-avenue, London, E.C., serve to adorn the stall of this company and trial prepared dishes were offered to the visitors. The Liebig Company's extract of beef has become such a household expression that the new word "Lemco" now adopted for the preparation should be generally known. Besides the ordinary extract now thus designated "Peptarnis" is worthy of notice. As our analysis has shown this consists mainly of peptone of a palatable, highly nourishing, and, of course, digestible character. It is a powerful restorative and food, ministering considerably to patients who have undergone loss in weight through enfeebled digestive conditions. An interesting series of foods was shown by the Worth's Food Syndicate, Limited, Cheltenham. These consisted of cereal foods more or less modified by cooking and thus rendered more soluble and easy of digestion. Though this preparatory process is an advantage in regard to foods for the dyspeptic or the invalid or the infant, yet it does not render, as is asserted, cereal flour suitable for the use of the diabetic, since the proportion of carbohydrate is absolutely unaltered by this process. The stall of Messrs. Scott and Bowne, Limited, of 95, 96, 97, and 98, Great Saffron-hill, London, E.C., was devoted to the exhibition of the various constituents concerned in the production of their cod-liver oil emulsion. We have already shown in our analytical columns that the composition of this emulsion is based on the known requirements of an enfeebled state of health and the oil occurs in the physical condition of an emulsion which secures its assimilation. The pioneer of all malt extracts was undoubtedly M. Hoff of Hamburg and of 29, New Bridge-street, E.C. This extract, though not concentrated, contains all the peculiar and valuable dietetic properties of barley malt. It is hardly distinguishable from ordinary stout except that it is quite free from undue acidity and possesses a rich malty taste and is much more digestible. Messrs. Keen, Robinson, and Co. of 6, Garlick-hill, Cannon-street, London, E.C., exhibited specimens of mustard preparations the excellence of which has long been associated with the name of this firm. In addition they showed their patent barley and patent groats, both of which preparations are undoubtedly nutritious, containing a maximum proportion of the flesh-forming and bone-forming constituents of barley and oats respectively. The patent barley prepared in the form of "Barlikos" affords an excellent hygienic summer drink. Cereal preparations were also the feature of the exhibit of the Infant and Invalid Co., Cereal Buildings, 54, City-road, London, E.C. The most important of these, perhaps, is the "I and I Food," prepared from the best of cereals and rendered more easy of assimilation by the conversion of some of its insoluble constituents into soluble constituents. The albuminoids and fat are in such excellent proportion as to indicate the selection of several kinds of cereal flour and a judicious mingling of them.

It must be admitted that the exhibition of foods and food products this year was not so representative in character as on previous occasions, nor were the exhibits under this section as great in number.

# THE FIRST INTERNATIONAL CONGRESS OF THE MEDICAL PRESS HELD AT PARIS, JULY, 1900.

(FROM OUR SPECIAL CORRESPONDENT.)

## THE NATIONALITIES REPRESENTED.

THE third and last day of the Congress proved by far the most important and critical. This was Saturday, July 28th, and as the International Congress of Deontology had concluded on the previous evening I was now able to attend. On entering the great amphitheatre of the École Pratique de Médecine I found that there were about 40 out of the 168 members of the Congress present. The British contingent consisted of one correspondent of the *British Medical Journal* and two members of the staff of THE LANCET. There were eight Germans, seven Belgians, five or six Italians, five or six Russians, three members each from Norway, the United States of America, Ecuador, and Mexico, two members each from Spain, Portugal, and Bohemia, and one member each from Switzerland, Greece, Denmark, Cuba, and Tunis. I should mention that Dr. C. D. Sutherland represented the *Indian Medical Journal*. Numerous honorary presidents had been elected: Dr. Podwyssotzki for Russia, Dr. Schonberg for Norway, Dr. Valdez for Spain, Dr. Ehlers for Denmark, and Dr. Squire Sprigge for Great Britain; but the real and ruling president was Professor Cornil, assisted by Professor Charles Richet and the general secretary, Dr. Blondel.

## THE MEDICAL PRESS IN GREECE, CUBA, AND BELGIUM.

The proceedings were opened by Dr. FONSTANOS who gave a history of the medical press in Greece. He explained that previously to the formation of the Medical Society of Athens in 1836 the country was overrun by charlatans of every description. Many medical papers had been started, but the materials were so slight and the number of medical men so limited that for the most part they came to an untimely end. To-day the two principal papers were the *Medical Progress*, published in Greek, and the *Grèce Médicale*, published in French.

Dr. JUAN SANTOS FERNANDEZ followed with a description of the medical press of Cuba. The first medical paper published in the island appeared in 1840, but did not live long. In 1861 Dr. Gutierrez founded the Academy of Medical Sciences and published its *Annals*. Seven years later there appeared the *Gazette of the Medical Sciences*, which, however, was swept away by the revolution. In 1873 some new publications appeared, and of these the *Medical and Chirurgical Chronicle* survived and may now be seen at the Exhibition. In spite of the political convulsions from which the island of Cuba had so severely suffered the medical press of Cuba now worthily represented the progress of medical science.

Dr. EMILE GIBSON (Brussels) reported on the Belgian medical press and recalled the fact that the first newspaper published in Europe was issued by Abraham Verhoeven at Antwerp in 1605. As for medical papers, one of the first to appear was the *Journal de Chimie Médicale, de Pharmacie et de Matière Médicale*, issued in Belgium in 1825. But though it was a very cheap paper for want of subscribers it did not live long. To-day, on the contrary, there were so many subscribers that there were no less than 70 journals published in Belgium dealing with medicine, surgery, or hygiene, together with the reports issued by numerous polyclinics, especially at Brussels.

At the conclusion of this report Dr. PÉCHÈRE requested the Congress to protest against the gratuitous circulation of medical papers which receive a State subvention. There were

in Belgium scientific institutions which were protected by the Government, and these employed a part of the subvention they received from the State to issue journals which they sent gratuitously to medical men, thus competing against the independent medical press.—Professor CORNIL said that in France the published reports of the proceedings of learned societies which received subventions from the State were only sent to the subscribers, and such subscriptions were often higher than those paid for ordinary medical journals.—The Congress adopted a resolution condemning the subvention by the State of medical papers which competed against the other journals.

### THE MEDICAL PRESS OF THE UNITED STATES AND OF GREAT BRITAIN.

Dr. C. W. FASSETT, editor of the *American Medical Journalist*, remarked that the first journal published in America was founded at the end of the last century and it contained principally articles translated from the French. Now there were 278 medical journals in the United States. The prestige of the medical press had been greatly enhanced by the Association of Medical Journalists, which was founded 15 years ago, and by the Association of Medical Publishers, which was founded in 1893. Dr. Fassett insisted that medical journals should avoid sensational news and the discussion of vague theories, and should be so written as to be understood by general practitioners who were not specialists. The American medical papers generally acknowledged quotations and were freely exchanged. Some papers would not insert advertisements of specialities unless the composition of the preparation was clearly indicated. He concluded by urging that the next International Congress of the Medical Press should be held at St. Louis in 1903, when the forthcoming great exhibition would take place.

A paper by Dr. S. SQUIRE SPRIGGE (London) on the British medical press was then read. He gave a history of the early struggles of THE LANCET and of the successful efforts of its editor to combat the nepotism prevalent at the hospitals and medical schools. The success achieved led to the foundation of many other journals, but the only paper which had survived and which could be compared by reason of its circulation and influence with THE LANCET was the *British Medical Journal*. Dr. Sprigge gave a short history of the development of this latter journal. The Congress was most interested when he described the financial situation of THE LANCET and the *British Medical Journal*, showing that the income of these papers rendered them quite independent and supplied them with means, which they employed freely, to make original researches and investigations, to depute experienced technicians to follow armies on the field, to study epidemics in all parts of the world, to analyse all sorts of food-stuffs, &c. The results of these independent and fearless investigations had largely contributed to reform the laws of the country as they affected medical education, public health, the adulteration of food, the housing of the poor, hospital accommodation, &c. Dr. Sprigge concluded by expressing the hope that charlatanism and *réclame* would be things of the past and that the medical journalist of the future would recognise but one master, the public good. The address was warmly applauded and was generally recognised as one of the most suggestive and interesting papers submitted to the Congress.

### THE GERMAN MEDICAL PRESS.

Dr. SPATZ (Munich) then spoke about the German medical press. It was only towards the middle of the century that the need of such papers was felt. In the revolutionary period of 1848 Virchow had founded at Würzburg the *Medical Reformer*, but when he went to Berlin this paper collapsed. However, he soon issued his *Archiv für Pathologische Anatomie und Physiologie und für Klinische Medicin*, and from that day the development of the medical press in Germany had not ceased. In 1864 Dr. Posner founded the *Berliner Klinische Wochenschrift*, which was intended for all members of the profession throughout Germany. It was still the leading medical paper. The position of affairs in Austro-Hungary was much the same as in Germany, and the same articles, &c., were sometimes published simultaneously in both countries. The *Deutsche Medicinische Wochenschrift* first started the idea of forming an Association of the German Medical Press, and the rules of this association were very similar to those of the present Congress. The result had been a great improvement in the tone of the medical press of Germany.

### THE REPRODUCTION OF SCIENTIFIC ILLUSTRATIONS.

This terminated the reports on the medical press of different countries and M. ALCAN then read his paper on the right of reproducing illustrations which I have already summarised.

In the discussion that ensued Dr. MARCEL BAUDOUIN argued that a drawing in a scientific publication should be considered as so much type. It was not a work of art; it was a hieroglyphic such as the Egyptians employed and the Chinese still use, and by which the author was better able to convey his meaning. As type could be reproduced so should the drawing or photograph which was published instead of words in type. With regard, for instance, to intestinal sutures there were some 600 drawings that had been published. Would the author of a book on the subject have to apply to the owners of these 600 illustrations? By slightly altering each design he could utilise them all and not infringe the law, but sometimes it was found that by altering the drawing it no longer agreed with the text. Then in a later edition the text was altered to make it agree with the drawing, so that in the end both drawing and text were false and incorrect. He thought that there should be greater latitude with regard to the reproduction of scientific illustrations.

Dr. REGNAULT remarked that as copyright lasted 50 years it sometimes happened that the author was dead and that his family could not be found or that the publisher was bankrupt and that his blocks and rights had been sold to no one knew whom. Publishers, he thought, should form an association like that of the society of authors so that there might be one single central place where all applications and payments should be made for the right to reproduce.

Professor RICHET remarked that the question was most complex because there could be no exact demarcation between a scientific and an artistic drawing. The latter was protected by the law of copyright. All they could do was to urge that, for the sake of scientific education, it was necessary to reproduce scientific drawings and leave to another Congress the task of formulating a scheme to facilitate such reproductions.

Dr. POSNER (Berlin) proposed to nominate a committee of three Parisian members to discuss this question with publishers, medical men, and legislators, and to study generally the question of literary property from the medical point of view. This committee would consist of Dr. de Maurens, Dr. Marcel Baudouin, and Dr. Blondel, who were well acquainted with the subject and held different opinions. This committee was thereupon elected.

### THE RIGHT OF TRANSLATION AND OF REPLY.

Dr. PODWYSSOTZKI, on behalf of the Russian members, urged that the copyright in regard to papers published in periodicals should, so far as the translation of such papers was concerned, be limited to six years. Dr. JAYLE and Dr. PISTRE then reported on the right to reply. According to Article 13 of the Law of 1881 all persons mentioned by name had an unlimited right of reply. This was thought excessive, for replies might be converted into mere self-advertisements. The editor should be able to exercise his discretion; but a person whose reply had not been inserted might have the right to appeal to a tribunal which would judge whether the editor had acted unfairly.

Dr. J. NOIR then read a short paper enforcing the absolute necessity of forming an international association of the medical press, and the morning sitting concluded.

### RÉCLAMES OR PUFFS.

It was at the very last sitting that the Congress ventured to tread on really delicate ground. First, Dr. G. LEVY complained that obvious puffs were written by persons who declared themselves to be medical men but gave fictitious names, thus shielding their reputation. He brought forward a motion stating

> That when the title "Doctor" was employed it should only be followed by the name inscribed on the diploma.

The Congress, however, thought that though this might be a good measure to prevent puffs, medical men who wrote articles that were not puffs were justified, so as to avoid self-advertisement, in adopting fictitious names. The discussion finally dropped without the adoption of any resolution.

Dr. ARCHAMBAND then moved

> That *réclames* and non-medical advertisements might be published in medical papers.

Without *réclames* many papers could not live and though a

*réclame* appeared as an article in the body of the paper everyone knew that it was paid for and was simply another form of advertisement.

Mr. ADOLPHE SMITH (London) energetically protested against this opinion. If *réclames* did not deceive anyone why were they paid for at a much nigher rate than ordinary advertisements? Then it was not so much a matter of the publicity given in the one issue of the paper as the fact that what the paper had said might be reproduced and quoted on millions of labels and circulars. So far, however, as *bonâ-fide* advertisements were concerned there was no reason why a tailor or a coachbuilder should not advertise in a medical paper as well as a wholesale druggist, but all advertisements should be carefully supervised so that none should appear that were opposed to the ethics or interests of the profession.

The Congress voted by a large majority against the insertion of *réclames*.

### FOUNDATION OF THE INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

Next came the report of Dr. LABORDE, concluding in favour of forming an International Association of the Medical Press, which was taken as read and which I have already summarised. Dr. POSNER (Berlin) argued that there should be an association of the medical press in each nation which should participate in the international congresses and that these congresses should be held frequently.

Dr. BLONDEL remarked that the local conditions of the various countries differed materially and that the Congress should first decide on the opportuneness of creating an international association. As for the statutes drawn up by Dr. Laborde they could only be considered as a scheme which it was not now necessary to discuss.

Dr. JAYLE, however, insisted that it was all very well to found an association, but they must first of all know who were going to be included in the association. Dr. Laborde, in his report, had said that the association should consist of directors, editors, and general secretaries of medical papers. Such a limited definition would have to be set aside before the proposal to form an association could be accepted, and there must instead be a distinct assertion that medical journalists were admissible.

Then followed a lengthy and at times a somewhat confused and disorderly discussion which I will not attempt to report. I will, however, try to explain the main points at issue. First we find here a good illustration of the fact that papers prepared for an international congress should be written in quite a different manner to that which is customary for a national congress. Internationally the same term has a very different meaning. In England the term "director" might be taken to mean the business manager who, as a rule, is neither a journalist nor a medical man. In France many medical papers belong to medical men who are at once managers, editors, and chief contributors of their own papers. Then the term "secretary" has no journalistic meaning in England, while in France it often means the sub-editor. On the other hand, our English word "editor" in France means publisher. These terms, therefore, in an international congress need explanation. It was, moreover, objected that if all medical journalists were admitted there were some 30,000 of them in France alone. Of course this was mere playing with words. A practitioner who once or twice in his life sends an account of a case that has come under his observation to a medical paper, for which contribution as a rule he is not even paid, cannot consider himself a journalist. As for the danger of the congresses being swamped by journalists, it is evident that no journalist would incur the expense of attending such congresses unless at least a considerable portion of his income depended on his pen. On the other hand, the proprietors and publishers of papers could more readily find the means of being present. Practically the discussion that took place was based on the question whether the proposed international association should really represent the medical press as a whole and all the interests involved, or be only an association of the owners of medical papers.—Professor RICHET protested that there was no desire to exclude journalists, but it was to be an association of employers and employed, whose interests were more intimately linked together than was generally supposed.—Dr. BLONDEL cordially endorsed this view, but wanted the details to be settled by a committee to be appointed or by future congresses.—Dr. JAYLE, on the contrary, insisted that the principle of the admission of journalists must be emphatically proclaimed now at once. Finally, Professor CORNIL put Dr. Blondel's proposals to the vote. They are worded as follows:—

> The statutes of this international association shall be submitted to the next International Congress of the Medical Press. They shall be prepared by an international committee appointed for that purpose. The members of this committee shall be elected in each country which possesses an association of the medical press convoked for that purpose. The committee of the present Congress shall act temporarily as the intermediary between the various sectional groups that have to constitute the definite international committee.

As this motion did not speak of journalists 13 members voted against it and 25 in its favour. But now Dr. JAYLE maintained that his proposal did not run counter to the resolution which had been carried and he moved it as an addendum.—Professor CORNIL agreed and thought that the Congress might now vote in favour of admitting medical journalists as members of the proposed International Association of the Medical Press, and this was adopted unanimously.

It was then decided that the second Congress should meet next year in Brussels. This with the usual vote of thanks completed the proceedings and the Congress separated, well satisfied at having established an International Association of the Medical Press. The general secretary, Dr. R. Blondel, has worked very hard to bring about this result and was naturally and warmly congratulated. In the evening the members of the Congress met at the Auberge des Nations in the Old Paris Street of the Universal Exhibition. The banquet was presided over by Professor Virchow of Berlin, and many toasts were drunk and great cordiality prevailed.

Paris, August 5th.

## HEALTH CONGRESS IN ABERDEEN.

THE annual congress under the auspices of the Royal Institute of Public Health took place this year in Aberdeen. The joint Town and County Hall, which was used for the issue of tickets, was opened on Wednesday, August 1st, but the actual business did not commence till August 2nd. The general and sectional meetings were held in Marischal College buildings and extended to August 7th. Between 800 and 900 delegates from various sanitary and municipal authorities in the United Kingdom attended.

### THURSDAY, AUGUST 2ND.

The general inaugural address was delivered in the Mitchell Hall by the President of the Congress, the Earl of ABERDEEN, Lord Provost FLEMING occupying the chair. Lord ABERDEEN, after alluding to the assassination of King Humbert and the death of the Duke of Saxe-Coburg and Gotha, dwelt upon the improvements brought about by sanitary reformers and called particular attention to the success of the district nursing system. At a later hour the presidents of the various sections delivered their opening addresses.

In the Section of Preventive Medicine and Vital Statistics the President, Professor W. J. R. SIMPSON (King's College, London), chose as his subject Administration and Research in Preventive Medicine. Professor Simpson, after urging the necessity of establishing a special sanitary service for India and an Imperial or Colonial sanitary service generally, adverted to the sanitary changes in Aberdeen, of which city before proceeding to Calcutta, he was medical officer of health. He then pointed out that in the bacteriological branch of preventive medicine Great Britain was not, as in other branches, in the first rank, and the absence, he said, of well-endowed laboratories for scientific research, either connected with their universities or colleges or as separate institutions, was a fatal defect in their otherwise excellent sanitary organisation. He then referred to the preparation of curative and prophylactic serums and said that investigations into comparative parasitology had also contributed much to preventive medicine and had revolutionised their ideas of malaria. The discovery of the parasite of malaria and its developmental stages in the mosquito permitted them to brush aside all vague generalities concerning the disease and the conditions which produced it. Professor Simpson concluded by referring to the question of sanitary supervision in the South African war. While expressing respect for the magnificent work done by the Royal Army Medical Corps, he said there was evidently pressure when two medical officers were required to do the work of four. This defect in their

system should be remedied at once, especially in view of the large number of troops going to China who would be exposed to much worse conditions than those in South Africa. A specialisation in the function of different departments of the Army Medical Service was required, and it was certain that without a special sanitary service disease in times of stress would not be prevented.—In the same section a paper by Dr. C. KILLICK MILLARD (medical officer of health of Burton-on-Trent) on the Notification of Measles was read in the absence of the writer and gave rise to a discussion which was taken part in by Professor W. J. R. SIMPSON, Sir CHARLES A. CAMERON, C.B. (executive sanitary officer, Dublin), and others.

The Section of Bacteriology and Comparative Pathology met in the Pathology Class Room under the presidency of Professor D. J. HAMILTON (Aberdeen University), whose opening address was on Recent Developments in Bacteriology and on the danger of spreading disease by vehicles of transport. As to tuberculosis they were all, he stated, agreed that there must exist a close relationship between the bacillus of leprosy and that of tubercle. With respect to typhoid fever Professor Hamilton remarked that the difficulty of recognising the bacillus in water still remained almost insuperable and that probably the method adopted by Hankin was the most to be depended upon for reliable results in the absence of the bacillus coli. Having referred to horse-sickness he then touched on the subject of cancer. As the evidence at present stood he was unable to form an opinion as to the parasitic theory. Cancer was a very common disease in Queensland, and the popular belief, supported by expert evidence, was that it was derived from cancerous cattle, the flesh of which was consumed in a half-cooked condition. Professor Hamilton then went on to protest against the apathy of railway companies in the matter of adopting precautionary measures against contamination and dust contagion from railway carriages. He urged the necessity for legislation on this matter, and at the same time he deplored the misery which was occasioned through the defective sanitation of schools and the evils caused by the condition of public resorts, which were rendered unhealthy through the neglect of the local authorities.—A short discussion followed, after which Professor E. F. TREVELYAN (Leeds) made some remarks on Pig Tuberculosis and showed specimens.—Dr. ALLAN MACFADYEN (director of the Jenner Institute of Preventive Medicine, London) also read a paper on the Detection of Tubercle Bacilli in Dairy Products.

In the Section of Chemistry and Meteorology there was but a small attendance. In his opening address Professor C. HUNTER STEWART (Edinburgh) devoted his remarks mainly to periodical recurrences of epidemic diseases and the meteorological conditions to which these had been attributed. After discussing the question of the carrying of micro-organisms in the air on particles of sand he pointed out the difference in the incidence of summer diarrhœa in the west of Scotland as compared with the east of that county, and alluded to the apparent connexion between the large quantity of carbonic acid in the ground air and typhoid fever. In conclusion he referred to the amount of organic matter contained in made-up soils, and urged the desirability of further investigation being made so as to ensure that the land was properly purified before being used as sites for buildings.—A paper prepared by Mr. EDWARD RUSSELL, F.I.C. (London), and Dr. A. E. PORTER (London) on an Inquiry into the Chemical and Bacteriological Condition of the Air in Board Schools was then read and gave rise to a discussion in which the artificial method of ventilation was generally condemned.—Mr. THOMAS JAMIESON, F.I.C. (city analyst of Aberdeen), then read a paper on the Effect of Organic Matter in Water on Health.

In opening the Section of Architecture and Engineering the President, Mr. JOHN HONEYMAN, R.S.A. (Glasgow), observed with respect to the construction of dwelling-houses that a point which was very much overlooked was the necessity of proper ventilation. He referred to the lack in cities of cheap houses for the poor.—A paper was read by Mr. JAMES SOUTTAR, F.R.I.B.A. (Aberdeen), on Architecture and Hygiene.—In a paper on the Architecture of the Twentieth Century Mr. BANISTER F. FLETCHER, A.R.I.B.A. (London), contended that public health would be the watchword of the new century and that architecture was the science of public health in its best and broadest sense. People would probably live to a great extent in the country, but he thought the appointment of a Minister of Public Health was an absolute necessity.

In the Section of Municipal and Parliamentary Hygiene the President, Dr. R. FARQUHARSON, M.P., delivered an address dealing with the general subject of municipal and Parliamentary hygiene. He thought that county councils had done their work well and that they should be allowed more freedom in framing by-laws regulating the health, comfort, convenience, and happiness of the people. He was of opinion that the expenses of county councillors should be paid. Resolutions in favour of the national registration of plumbers were then adopted, after which a paper was read by Mr. Fyfe, F.R.S. Edin., on Legal Stumbling-Blocks in the Housing Question.

In the afternoon, in splendid weather, an enjoyable garden party was held at Richmondhill, the residence of Lord Provost Fleming, and in the evening the official reception by the Lord Provost and Town Council took place in the Mitchell Hall and picture gallery at Marischal College, the apartments of the Students' Union being used as refreshment rooms. There was a very large and brilliant assemblage.

### FRIDAY, AUGUST 3RD.

The annual meeting of the Association of Port Sanitary Authorities was held in the forenoon, when the office-bearers and council were elected. Reference was made to the recent epidemic of small-pox in Hull, and a resolution that the Local Government Board be asked to furnish forthwith to the officials of port sanitary authorities such information as it might receive as to the existence of infectious diseases, and that a deputation should wait on the President of the Local Government Board, was adopted. The tenth annual meeting of the registered plumbers in Aberdeenshire, Kincardineshire, and Banffshire was held in the evening, Professor M. HAY (Aberdeen), the President, being in the chair. The yearly report was satisfactory.

In the Section of Preventive Medicine a discussion, opened by Dr. E. W. HOPE (medical officer of health of Liverpool), took place on Municipal Laboratories as part of Health Organisations, and the following resolutions were adopted:—

That it is desirable that facilities should be acquired by sanitary authorities for bacteriological and other cognate work.

That it is desirable that the bacteriological diagnosis of disease should only be made by bacteriologists who are registered medical practitioners.

A discussion (commenced on the previous day) on the question of the notification of measles was continued and concluded. In connexion with the tuberculosis problem the following papers were read:—(1) Tuberculous Milk—Researches and Results, by Professor SHERIDAN DELÉPINE (Manchester), which was read in the absence of the writer; (2) The Dundee Sanatorium for Consumptives, by Dr. C. TEMPLEMAN (medical officer of health of Dundee); and (3) The Position of General Hospitals in Relation to the Sanatorium Treatment of Tuberculosis, by Dr. NOEL BARDSWELL (Surbiton). A brief discussion ensued, but no resolution was adopted. In a paper on Summer Diarrhœa, its Cause and Prevention, Dr. WILLIAM RUSSELL (Paisley) dwelt on the necessity of getting rid of all forms of putrefaction.

In the Section of Bacteriology and Comparative Pathology Dr. GEORGE DEAN (Jenner Institute of Preventive Medicine, London) gave a demonstration of Toxins and Antitoxins, illustrated by lantern slides, fully describing the methods of testing. The sera obtained by the use in immunising animals of living microbes, he said, were much less powerful than the antitoxic sera, but the method had been employed in such diseases as septicæmia, cholera, typhoid fever, and bubonic plague. Various theories as to the method of production of antitoxin in the animal body were touched on. Reference was made to some of the remarkable recent developments in the field of immunity, such as the production in the blood serum of animals treated with injections of rennet of a substance which neutralised the curdling of the rennet ferment on milk. Much of the work possessed at present only theoretical interest, but such investigations frequently paved the way for the discovery of practical methods of treatment and prevention of accident.—A paper by Dr. R. T. HEWLETT, (Jenner Institute of Preventive Medicine, London) was read in the absence of the writer, the subject being the Thermal Death-point of the Tubercle Bacillus. The general results of the writer's experiments were summed up as follows: Non-virulent laboratory cultures were destroyed by

an exposure to 60° C. for 10 minutes, while a temperature of 65° C. acting for 15 minutes destroyed the infective properties of tuberculous sputum. Tuberculous milk heated to 65° C. for 30 minutes lost its infective power, and tuberculous milk heated to from 65° to 68° C. for 20 minutes in the Allenbury pasteuriser likewise lost its infective power. In all probability pasteurisation, in which the milk is retained at a temperature of 65° C. for not less than 20 minutes, was efficient.—In the discussion Mr. B. BROWNING (medical officer of health of Weymouth) called attention to the fact that the laity were exposed to the danger of contracting tuberculous, enteric, and cancerous affections by receiving the sacramental wine in a cup, and he suggested to the clergy a modification of their ritual.—Papers were afterwards read upon the Serum Diagnosis of Typhoid Fever and the Bacillus Coli in Drinking Water.

In the Section of Chemistry and Meteorology the most interest was taken in a paper by Mr. JAMES HENDRICK, F.I.C. (Aberdeen), on the Question of Distillery Refuse, and in one by Dr. A. M. COWIE (Dufftown) on the Purification of Burnt Ale by the Biological Method.—Two papers on the Treatment of Sewage were also read, as was one by Dr. C. MUNRO HECTOR (Sheffield) and Dr. J. ROBERTSON (medical officer of health of Sheffield), entitled "The Estimation of the Germicidal Values of the Common Disinfectants."

In the Section of Architecture and Engineering Mr. R. MORHAM (city architect of Edinburgh) contributed a paper entitled "Suggestions on Fever Hospital Construction," in which he drew attention to the need of ample provision for fever nurses, and exhibited a block plan of the hospital now in course of erection for the city of Edinburgh.—Councillor COOPER (Aberdeen) read a paper on an Ideal Workman's Cottage, and a discussion followed on the difficulties of the problem of the housing of workmen in cities.—Papers were also read on House Drainage and on the Dangers to Public Health from Railway Carriages and Stations. The section recommended the Congress to call the attention of the various railway companies to the necessity of more efficient cleansing and the more sanitary construction of railway carriages, and also the conveniences at the smaller stations, having regard to the question of the possibility of infection to passengers.

In the Section of Municipal and Parliamentary Hygiene the Earl of ABERDEEN read a paper sent in by the Countess of ABERDEEN on Women as Members of Sanitary Authorities. At the suggestion of the section he promised to introduce in the House of Lords a Bill to amend the new Local Government Act for London so as to permit of women being elected, as before, as members of the local sanitary authority.—A paper by Dr. A. T. BEVERIDGE (Aberdeen) on Sanitation and Economics gave rise to a discussion on the advisability of working men becoming their own landlords.—Councillor DUNLOP (Glasgow) contributed a Plea for More Air Space in and Around Town Dwellings and a resolution was passed—

That this conference approves that the standard of air space for dwellers in cities and large towns be raised to 500 cubic feet for every adult and to 250 cubic feet for each child under 10 years of age.

The corporation of Aberdeen entertained the delegates to luncheon in the Music Hall, 1000 guests being present, and afterwards to a garden party in Duthie Park, where the company numbered 1200.

On Saturday, August 4th, several excursions were arranged for members of the Congress, the largest being to Balmoral, where by order of the Queen the Castle grounds were open to the visitors. The party which went to Finzean, near Banchory, were entertained to luncheon by Dr. R. Farquharson, M.P. for West Aberdeenshire.—On Sunday, August 5th, the delegates walked in procession to the West Parish Church, where the Rev. Dr. MARSHALL LANG (Principal of Aberdeen University) was preacher. There were also special services in St. Paul's (Episcopal) Church.

### MONDAY, AUGUST 6TH.

Professor PERCY F. FRANKLAND, F.R.S., gave an interesting address on the subject of Recent Developments in the Purification of Sewage. The lecturer said that it was a matter for humiliation that in this country there was no proper organisation for carrying out experiments on an extensive scale. In this connexion he urged the establishment of an Imperial Board of Health.

At the annual meeting of sanitary inspectors Dr. A. T. GORDON BEVERIDGE (Aberdeen) was called to the chair.—Mr. PETER FYFE, F.R.S. Edin. (chief sanitary inspector, Glasgow), delivered the presidential address on Sanitary Inspectors and the Housing of the Poor.—Mr. GEORGE MACKAY (county sanitary inspector of Perth) read a paper on Improvement in Public Health in Scotland.—Miss MARY M. PATERSON, H.M. Inspector of Factories, then read a paper on Modern Workshops, dwelling on the necessity of cubic space and ventilation.

A conference of veterinary surgeons was thinly attended. Mr. W. WILLIAMS, F.R.C.V.S., principal of the New Veterinary College, Edinburgh, presided, and addressed the meeting on Certain Peculiarities, or rather Vagaries, in the Life-history of Microbes.

A conference of medical officers of health was held, Dr. J. C. MCVAIL (medical officer of health for Stirling and Dumbarton) presiding. The principal subject under discussion was the working of the English Vaccination Act.—Dr. FARQUHARSON, M.P., said he believed that the "conscientious objector" was a humbug and a manufactured product.

The Congress dinner was held in the evening.

### TUESDAY, AUGUST 7TH.

To day, at an adjourned conference of veterinary surgeons, a paper was read by Mr. JAMES MCPHAIL (Edinburgh) on Pseudo-Tuberculosis.

The annual meeting of the Royal Institute of Public Health took place and the usual reports were adopted.

Dr. PATRICK MANSON, medical adviser to the Colonial Office, delivered an interesting address on Malaria: a Sanitary Problem, Lord ABERDEEN presiding. The members adjourned to the Pathological class-room, Marischal College, to view a number of slides illustrating the malarial parasite.

In the Section of Preventive Medicine, Dr. G. DEAN, who is in charge of the farm where the antitoxin is manufactured by the Jenner Institute of Preventive Medicine, delivered an address on the Seasonal Fluctuation in the Demand for Antitoxin. Other papers were read.

In the Section of Municipal and Parliamentary Hygiene, papers were read on Slum Property, the Necessity of Efficient Inspection of Meat and the Expediency of Erecting Compulsory Clearing Houses.

In the Section of Chemistry and Meteorology, a paper by Mr. R. GLEGG, B.Sc., and Mr. JAMES HENDRICK, B.Sc., was read on the subject of the Diurnal Variation in the Fat of Cow's Milk.

The proceedings closed with the general meeting of Congress, when various resolutions were adopted.

## THE WAR IN SOUTH AFRICA.

### THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

Since I wrote to you last I have been up to Mafeking to fetch Major Mullins who is now safely housed in one of our officers' wards here. He was so badly wounded in the backbone that we had to get a truck with sufficiently wide doors to admit the bedstead complete, and the guard's van was the only carriage that would meet the case. We also brought down Mr. Hands, the *Daily Mail* correspondent, who, too, had been wounded in the relief at the same time, so that there is not a seriously sick or wounded man now left in Mafeking. I had been suffering from a poisoned finger and the rest from work enabled it to get quite well. At the same time the trip afforded a most interesting experience. The "dug-outs" or "bomb-proof shelters" have most of them disappeared already, for their roofs were generally made of railway metals which had to be restored to their proper places before the line could be reopened. Fuel is still very scarce up there, the locomotives having to depend on wood of which they draw a huge truckful after them. Of food there is plenty and of danger there is none, though there was indeed a slight skirmish only seven miles out of Mafeking while I was there, and the passengers by the train after ours saw a couple of shells bursting not long before they reached Mafeking. There seem to be various small commandoes of the enemy moving about even in parts of the country that have for many weeks been considered disarmed; there is one such between us and Kimberley,

and another between Norval's Pont and Naauwpoort, a slight skirmish taking place the other day at the former place. But in all other respects little change has as yet come over Mafeking since it was relieved.

It is most interesting to be taken over the forts and trenches by one of those who was responsible for their making and who knows the why and wherefore of each move and of each fight. The "Brickfields" in particular might be described as a chessboard on which a most clever and spirited game had been played for several months for great stakes. There, as I daresay you know, our trenches were pushed up to within 60 yards of the Boer trenches before these were evacuated, and then our men sapped on until the two trenches joined and they could pass all the way under cover from one of our forts to one made by the Boers. This they found was deserted, but luckily before occupying it they stumbled on an electric fuse wire and cut it, and then found 250 lbs. of dynamite which was meant for their destruction. This was 1350 yards from the market square and 800 yards from the main Boer position. They were hard up in the town for some wire of this sort, so they picked up the cut end and began to haul it in before the Boers, who were ineffectually pressing the button which made the connexion which was to have blown up the fort, discovered what was happening. A tug-of-war ensued and our men got 750 yards and the Boers only 50.

"Trophies" and mementoes of the siege of all sorts are in great demand both at Mafeking itself and also down country. Siege stamps, paper money, shells, and bullets occupy the most prominent place in many people's minds, and realise most extraordinarily high prices; but Professor Chiene, who was visiting us not long ago, is the possessor of one of the most interesting mementoes in the shape of the concertina whereby, in conjunction with the noise made by a native dancing on a sheet of corrugated iron, the Boers were tempted to put up their heads when only separated from our sharpshooters by the 60 yards already mentioned. Many Boers paid for their curiosity with their lives, for the moment anything showed above the sandbags it got a bullet through it; even a cartridge case, which is only two and a quarter inches by less than half an inch, left by chance on the top of the sandbags got two bullets put through it. I dare say you know that there are some field-glasses made on such an arrangement of angles and prisms that by their aid a man in a trench can spy over the top without exposing his head. I saw one such glass which had had a Mauser bullet bang through its lens and the bullet also went through the hat of the person who was using it.

The Stadt, or native compound, is another very interesting part of the besieged area to visit. It stands separated from the town by a small river bed. The force which occupied this quarter of the outer and inner circles of forts was usually composed almost entirely of natives. Twice at least this native Stadt was the object of hot attack. On the first occasion the Boers broke through the outer circle of forts which surround the town at a radius of from about half a mile to one mile, but were repulsed at the inner forts which closely encircle the town. On the second occasion (May 12th), headed by Eloff, the Boers, as you know, got right into the Stadt and set on fire many of the native huts. They pushed on and got almost to the railway station. Reinforcements of white troops then got round behind them and cut off their retreat. Here many of them surrendered towards nightfall, but of those who tried to retrace their steps through the Stadt, it is said that some were thrown by the natives into the burning houses.

Both at Mafeking and at Ladysmith the besieged forces seem to have placed a very modest estimate upon the splendid services which they themselves had yielded. An officer who was in Ladysmith said to me the other day: "When the relief force came in we were surprised to find that we were heroes—we thought we had all been doing very badly." One whom I saw at Mafeking who on the testimony of his colleagues seemed to have taken a most active part in the fighting and, indeed, in the most dangerous parts of it, said: "Our success in keeping the enemy out is due not so much to what we did as to what the enemy failed to do."

Both the convent and the hospital were, as you know, severely damaged by shell fire. The former, which is the only two-storeyed building in the town and therefore afforded a tempting target from the Boer lines, might almost be described as a ruin, but the latter is the one building in the town which has already been repaired.

Throughout the siege they seem to have been remarkably free from sickness, despite the fact that Mafeking is as innocent as any other town in South Africa of any attempt at sanitation.

I am glad to say that sickness among the staff here has materially diminished of late. Only 21 of our orderlies are "in hospital" and they are all doing well, and so are the two medical men who are convalescent from enteric fever and a couple of sisters who are off duty through slight ailments. This most satisfactory abatement seems to be general throughout the country. The epidemic of enteric fever continues to decrease rapidly.

Colonel A. T. Sloggett, R.A.M.C., who is just back from Pretoria, whither he had to go to make arrangements for the new advanced branch of the Yeomanry Hospital, the first instalment of which is due at Cape Town to-morrow, says that there are only 400 sick and wounded in that city and only 1600 in Bloemfontein, instead of the 5000 who were there when I was there six weeks ago. He says that there are two whole general hospitals now in Kroonstad besides the Glasgow Hospital of 300 beds; but there, as at Kimberley, where I visited the hospitals on my way to Mafeking, and everywhere else that the hospital trains ply to, the report is extremely favourable, and there are vacant beds everywhere now. The difficulty of transport, however, continues. Between Kroonstad and Johannesburg it is even greater than it was, owing of course to the depredations of Christian de Wet.

We have taken in nearly 250 patients this week, including one trainload from Wynberg, half sick and half wounded and one trainload of convalescents from Pretoria, and about, 50 Yeomanry, including a batch of the Warwicks and a batch from Kimberley.

From talking to Boer prisoners it is evident that their leaders are still trying to buoy them up with the most gross misrepresentations. One said that his commando had been told that 6,000,000 Russians had been landed in Cape Town and that Cronje and all of his men had escaped from St. Helena and were invading the Cape. They say that the Boers have changed the name they apply to our troops from "rooineks" to "locusts."

On my way through Kimberley the other day I ordered and brought down with me on the return journey a marble cross for the head of the late Dr. R. T. FitzHugh's grave. By-the-bye, about a week ago the Coadjutor Bishop of Cape Town paid us a 24 hours' visit for the purpose firstly of dedicating our burial-ground, and secondly, of holding a confirmation service for which some eight or nine candidates had been prepared by our clergyman, Mr. Blackbourne.

We have experienced a day or two of really horrible weather here lately. Tremendously high winds, very cold indeed and bearing along clouds of dust and even of shingle which felt at times almost like a flight of small shot. Several of the larger tents, including the sisters' dining tent (poor souls!), were blown down, and it has been impossible yet to put them up again owing to the continued high wind. None of the tortoise- or bell-tents have been blown down, nor of course, were the huts damaged, but everything and everybody have been covered with dust.

Deelfontein, July 16th.

# Public Health and Poor Law.

## LOCAL GOVERNMENT DEPARTMENT.

### REPORTS OF MEDICAL OFFICERS OF HEALTH.

*Liverpool Sanitary District.*—Dr. E. W. Hope is looking anxiously forward to the results of the 1901 Census to ascertain the precise position of Liverpool with regard to her several death- and disease-rates. At the last census the experience of Liverpool was peculiarly unfortunate in that the discrepancy between the actual and estimated population was no less than 100,000. Small wonder that under these circumstances the medical officer of health pleads for a quinquennial census. For 1899 the estimated population of the city was 668,645, the birth-rate being 33·6 and the death-rate 24·3 per 1000. The highest district birth-rate was 44·1 and the lowest 20·1 per 1000, while as regards the district death-rate the highest was 38·7 and the lowest 10·1 per 1000. In connexion with the deaths it is an interesting point, and one

worthy of study, that the deaths which take place in workhouses and hospitals are greater in Liverpool in relation to population than is the case in any other city of England. The table below gives the rates for the four largest towns.

| | 1895. | 1896. | 1897. | 1898. | 1899. | Average. |
|---|---|---|---|---|---|---|
| Birmingham ... | 16·8 | 14·9 | 14·0 | 15·3 | 16·1 | 15·4 |
| Leeds... ... ... | 10·9 | 11·9 | 10·8 | 11·8 | 12·4 | 11·6 |
| Manchester ... | 19·2 | 19·7 | 20·0 | 19·0 | 19·7 | 19·5 |
| Liverpool ... ... | 20·7 | 23·8 | 23·1 | 24·7 | 25·3 | 23·5 |

Small-pox was introduced into Liverpool on six occasions during 1899, but, owing to the precautions taken the disease failed to spread. Of typhus fever 70 cases were brought to the notice of the sanitary authority, and of these 13 died. Dr. Hope furnishes an interesting diagram in his report showing how the disease spreads, and the importance of keeping those who have been exposed to infection under rigid observation. In discussing measles Dr. Hope deplores the fact that the deaths from this disease show no evidence of decline, and he compares the behaviour of this disease with that of such diseases as typhus fever and scarlet fever, to both of which isolation has been applied. Dr. Hope is apparently of opinion that isolation would tend to materially diminish the prevalence both of measles and whooping-cough, and in respect of the latter disease he furnishes a table showing in what manner the disease may be considered as spreading. Under the heading of Alcoholism the effect of drink upon the survival of children born of alcoholic mothers is well brought out, and it is related that out of 600 children born of inebriate mothers no less than 335 died before their second birthday. The female sanitary inspectors are making their influence felt in Liverpool, and during 1899 three additional officers were permanently added to the staff. These officers do excellent work in the direction of educating the public in some of the principles of preventive medicine. Open spaces are being provided in Liverpool by the conversion of old burial-grounds into gardens, and Dr. Hope furnishes photographs showing (*a*) converted churchyards, and (*b*) churchyards closed against further interment. As an instance of the immense overcrowding of bodies in a given grave he introduces the photograph of a gravestone completely covered with separate inscriptions indicating the persons who have been buried beneath the stone in question. Considerable space is devoted in the report before us to the subject of preservatives and colouring matter in food. It is a very interesting and important fact that the addition of such preservatives as formalin or boric acid to milk is a relatively uncommon practice in Liverpool, and, as Dr. Hope points out, it is clear that their use is not urgently called for provided proper cleanliness and cooling are practised. Dr. Hope also refers to the experiments carried out by Dr. H. E. Annett at Liverpool upon kittens, in which the evidence pointed strongly in the direction of relatively small amounts being detrimental to these animals. The tanyards of Liverpool proved during 1899 to be invaded by anthrax, and four deaths from this disease occurred during the year. The bacillus of the disease was found in the gloves used by the workmen and also in the vats used for macerating the hides. In connexion with the summer diarrhœa of infants the milk with which certain of them were being fed had been examined bacteriologically. Many putrefactive organisms were detected, and among them the bacillus enteritidis sporogenes. Some interesting observations with regard to the presence of the tubercle bacillus in milk were made by Professor R. W. Boyce. In railway-borne milk tubercle was found in 8·1 per cent. of the samples, but in the town milk only 0·6 per cent. was found to be tuberculous. Several specimens of condensed milk were not sterile, organisms being found therein; so, too, bacteria were detected in samples of "sterilised milk." No pathogenic organisms were detected in the specimens of jam examined, and many samples were quite sterile. Professor Boyce evidently views the practice of adding preservatives to jam as likely to lessen its digestibility. Certain tinned meats contained numerous organisms, but apparently none of the shellfish examined on this occasion contained disease-producing organisms. Samples of drinking-water were examined at frequent intervals, but the average number of bacteria was always below Koch's standard of 100 per cubic centimetre. The corporation of Liverpool is steadily demolishing some of the worst slum property, which has been for years past identified with disease and misery, and with death-rates of between 40 to 50 per 1000; in a word, the localities where, since statistics have been collected, disease has been in a sense endemic. Of some of this miserable property and of its pale-faced inhabitants Dr. Hope supplies photographs, while by way of contrast he adds a picture of some of the buildings erected by the corporation. Whether or not the occupants of the slums destroyed find a home in the model dwellings there must be at least some advantage in sweeping the worst slums out of existence.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6889 births and 4564 deaths were registered during the week ending August 4th. The annual rate of mortality in these towns, which had increased from 14·5 to 19·4 per 1000 in the four preceding weeks, further rose to 20·5 last week. In London the rate was 20·1 per 1000, while it averaged 20·8 in the 32 provincial towns. The lowest death-rates in these towns were 8·0 in Burnley, 9·4 in Cardiff, 11·1 in Wolverhampton, and 11·4 in Halifax; the highest rates were 26·2 in West Ham, 30·0 in Salford, 33·5 in Sheffield, and 34·6 in Liverpool. The 4564 deaths in these towns included 1329 which were referred to the principal zymotic diseases, against 427, 555, and 944 in the two preceding weeks; of these, 1040 resulted from diarrhœa, 88 from whooping-cough, 79 from measles, 70 from diphtheria, 26 from scarlet fever, 25 from "fever" (principally enteric), and one from small-pox. The lowest death-rates from these diseases were recorded in Cardiff, Oldham, Burnley, Halifax, and Gateshead; and the highest rates in West Ham, Liverpool, Salford, Preston, and Sheffield. The greatest mortality from measles occurred in Brighton, Derby, Huddersfield, Leeds, and Sunderland; from whooping-cough in West Ham; from "fever" in Portsmouth; and from diarrhœa in West Ham, Liverpool, Salford, Preston, and Sheffield. The mortality from scarlet fever showed no marked excess in any of the large towns. The 70 deaths from diphtheria included 24 in London, eight in Leeds, eight in Sheffield, seven in West Ham, and seven in Leicester. One fatal case of small-pox was registered in Blackburn, but not one in any other of the 33 large towns. There were seven cases of small-pox under treatment in the Metropolitan Asylums Hospitals on Saturday last, August 4th, against 17, 14, and 11 at the end of the three preceding weeks; no new case was admitted during the week, against four, one, and three in the three preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1827, against 1877 and 1859 on the two preceding Saturdays; 156 new cases were admitted during the week, against 208, 222, and 207 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had increased from 140 to 196 in the four preceding weeks, declined again last week to 136, and were 43 below the corrected average. The causes of 53, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Cardiff, Nottingham, Bolton, Newcastle, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Huddersfield, Sheffield, and Hull.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·0 and 17·5 in the two preceding weeks, further declined to 17·2 per 1000 during the week ending August 4th, and was 3·3 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·3 in Dundee and 13·5 in Perth to 19·3 in Paisley and 19·5 in Glasgow. The 533 deaths in these towns included 60 which were referred to diarrhœa, 19 to measles, 12 to whooping-cough, 11 to "fever," five to diphtheria, two to small-pox, and not one to scarlet fever. In all 109 deaths resulted from these principal zymotic diseases, against 102 and 87 in the two preceding weeks. These 109 deaths were equal to an annual rate of 3·9 per 1000, which was 2·1 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 38 and 36 in the two preceding weeks, further increased last week to 60, of which 37 occurred in Glasgow,

seven in Paisley, five in Dundee, three in Edinburgh, and three in Aberdeen. The deaths from measles, which had risen from 17 to 24 in the three preceding weeks, declined again to 19 last week, and included 14 in Glasgow and four in Edinburgh. The fatal cases of whooping-cough, which had been 22 and nine in the two preceding weeks, rose again last week to 12, of which nine were registered in Glasgow and two in Greenock. The deaths referred to different forms of "fever," which had been 11 and six in the two preceding weeks, rose again to 11 last week and included six in Glasgow and four in Edinburgh. The fatal cases of diphtheria, which had been four, six, and one in the three preceding weeks, rose again last week to five. The deaths from small-pox, which had been two in each of the two preceding weeks, were again two last week, and were both registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 80 and 67 in the two preceding weeks, increased again to 73 last week, and were 21 in excess of the number in the corresponding period of last year. The causes of 30, or nearly 6 per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 23·4 and 18·3 per 1000 in the two preceding weeks, rose again to 24·0 during the week ending August 4th. During the past four weeks the death-rate in the city has averaged 21·0 per 1000, the rate during the same period being 17·9 in London and 17·1 in Edinburgh. The 161 deaths belonging to Dublin registered during the week under notice were 38 in excess of the number in the preceding week, and included 14 which were referred to the principal zymotic diseases, against eight, 13, and five in the three preceding weeks; of these, nine resulted from diarrhœa, three from whooping-cough, two from "fever," and not one either from small-pox, measles, scarlet fever, or diphtheria. These 14 deaths were equal to an annual rate of 2·1 per 1000, the zymotic death-rate during the same period being 5·7 in London and 2·2 in Edinburgh. The deaths referred to diarrhœa, which had been four in each of the two preceding weeks, increased to nine last week. The 161 deaths in Dublin last week included 33 of infants under one year of age and 43 of persons aged upwards of 60 years; the deaths both of infants and of elderly persons showed a considerable excess over the numbers recorded in the preceding week. Eight inquest cases and four deaths from violence were registered; and 59, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Surgeons: Hugh P. Turnbull to the *Duke of Wellington;* Edward T. P. Eames to assist Board of Medical Officers in examination of candidates for commissions in Royal Marines; and Malcolm Cameron to the *Northampton* for *Cleopatra*.

### ROYAL HORSE GUARDS.

Surgeon-Captain Hugh Rayner to be Surgeon-Major, in succession to Surgeon-Lieutenant-Colonel J. S. Forrester, deceased.

### ROYAL ARMY MEDICAL CORPS.

The undermentioned Lieutenants to be Captains: Stevenson Lyle Cummins, Joseph McArdle, Charles Hensley Hopkins, Lewis Julius Christopher Hearn, Peter McKessack, John McDonald McCarthy, Ernest Brodribb, John Poe, Henry Lawrence Weekes Norrington, Hamilton George Frampton Stallard, Robert Dalkeith Jephson, and Arthur Winniett Nunn Bowen. Lieutenant-Colonel Abraham Walker Browne is placed on temporary half-pay on account of ill-health.

### VOLUNTEER CORPS.

*Royal Engineers:* 2nd West Riding of Yorkshire (Leeds): Surgeon-Lieutenant H. Waite to be Surgeon-Captain. *Rifle:* 5th Volunteer Battalion the South Wales Borderers: Surgeon-Lieutenant J. R. I. Raywood to be Surgeon-Captain. 2nd Volunteer Battalion the Royal Sussex Regiment: Surgeon-Lieutenant G. Black to be Surgeon-Captain and to remain supernumerary. 3rd (Duke of Connaught's Own) Volunteer Battalion the Hampshire Regiment: Captain Charles Henry Newby resigns his commission and is appointed Surgeon-Lieutenant. 1st Volunteer Battalion Princess Charlotte of Wales's (Royal Berkshire Regiment): Surgeon-Captain A. G. Paterson resigns his commission. 2nd London: Surgeon-Captain W. A. Bond resigns his commission. 15th Middlesex: Surgeon-Lieutenant James Godding resigns his commission and is appointed Lieutenant. 19th Middlesex: John James Rickard Macleod to be Surgeon-Lieutenant.

### VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Surgeon-Major W. Coates to be Surgeon-Lieutenant-Colonel on increase of establishment and to command under paragraph 55A Volunteer Regulations. Surgeon-Captain J. J. K. Fairclough to be Surgeon-Major.

### TRANSVAAL WAR NOTES.

It has been decided to send out at once to South Africa a large reinforcement of trained men of the Royal Army Medical Corps.

Major J. Meek, R.A.M.C., has been appointed Principal Medical Officer of the American hospital ship *Maine*.

Major Raymond, R.A.M.C., Captain Mason, R.A.M.C., Lieutenant-Colonel Barker, R.A.M.C., Captain Butler, R.A.M.C., Captain Stalkartt, R.A.M.C., and Civil Surgeon Parker are reported on their way home from South Africa invalided.

### THE CRISIS IN CHINA.

A third brigade, to consist of the 4th and 20th Punjabis, the 6th Bengalis, and one regiment of Hyderabad Infantry is to proceed to China. The transport *Canning*, with the 4th Battalion of the 1st Goorkhas, the 66th Native Field Hospital, details, and supply column, and the transport *Nation*, with ordnance park, transport mules, the 39th Native Field Hospital, native general hospital, and special service details, has arrived at Hong-Kong.

### VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The fortieth class for the instruction of medical officers in the subjects of the proficiency examination will be held at the headquarters of the Prince of Wales's Own, 12th Middlesex (Civil Service) Volunteer Rifles, Somerset House, Strand, W.C., by permission of Lieutenant-Colonel H. B. H. Tytheridge, commanding that regiment, and will last five days, commencing on Monday, Sept. 24th, at 2.30 P.M. precisely, and concluding on Friday, Sept. 28th, at 5.30 P.M. The instruction will include all the subjects of the examination, also the duties of medical officers generally in camps, quarters, bivouacs, with brigade bearer-companies and other units, on the line of march and elsewhere. Practical instruction in bearer company drill will form an important part of the work of the class. Officers who are unable to attend this class can obtain instruction by correspondence. These classes will be under the instruction of Surgeon-Captain E. M. Callender, 40, Connaught-square, Hyde-park, London, W., to whom all officers should apply who intend to join either class or who wish for further information, at the same time stating their rank and corps.

## Correspondence.

**"Audi alteram partem."**

## "PROFESSOR LUSTIG'S PLAGUE SERUM."

*To the Editors of* THE LANCET.

SIRS,—Your special Indian correspondent, fully appreciating the importance of the subject, made a point of reporting periodically to your readers on the progress of the experiments which were initiated with Professor Lustig's curative plague serum in 1898 by the municipality of Bombay. Evidently possessed by the conviction that he could advance best the cause of humanity and science from the comfortable standpoint of absolute negation he has from the beginning been eager to assert that the results obtained were utterly fallacious and wholly due to the selection of the cases which

was practised at first. He, moreover, for reasons religiously kept to himself did not approve of the method of the manufacture of the serum.

Such condemnatory verdict, pronounced in a leading medical journal, did not necessarily tend to lessen the already existing difficulties in carrying on the experiments, for the successful termination of which, however, the authorities and the public were equally desirous. Fortunately his arguments betrayed a lack of personal information and an overflow of imagination surprising even in a special Indian correspondent, and they failed to convince the responsible persons who were on the spot and knew the real facts. The experiments, therefore, were allowed to proceed on the lines laid down by the experimenters in spite of his scathing criticism. Thus it happened that in April last I was in the position, as one of the medical officers entrusted by the municipality for some time past with the manufacture of the serum, to lay the following statistical details based on official records before a special meeting of the Bombay Medical Union:—1. From March 13th, 1898, till May, 1899, 403 "selected" patients were treated with the serum at the Arthur-road Hospital and had a recovery-rate of 33·2 per cent., whereas the 1190 patients who were excluded from the serum treatment and treated by ordinary methods had a recovery-rate of 19·5 per cent. This rate of the excluded patients was found to be identical with the recovery-rate of the other large plague hospitals, and gives, therefore, the proof that the increase on the serum side was real and not due to the selection. That is further corroborated by the fact that the total recovery-rate at the Arthur-road Hospital was 4·5 per cent. higher than in other hospitals. 2. From April, 1899, till April, 1900, 361 patients were treated with the serum at the same hospital and had a recovery-rate of 33·8 per cent. These patients were *not* selected but taken alternately as they were admitted, an equal number remaining as controls under the ordinary treatment. The controls had a recovery-rate of 21·3 per cent., this rate being again identical with that of the other hospitals. The total recovery-rate of the Arthur-road Hospital was consequently 6 per cent. higher than that of the other hospitals. On the strength of these statistics and various other evidence I felt myself entitled to conclude: (*a*) that the experimental stage of the serum treatment was over; (*b*) that the curative properties of the serum had been established beyond reasonable doubt; (*c*) that they were represented at present by the improvement of 12·5 per cent. obtained in the patients taken alternatively for treatment; (*d*) that they were satisfactory in themselves; and (*e*) that they were certain to be improved upon with the increasing experience in the manufacture and application of the serum.

The medical practitioners attending the meeting—foremost amongst whom was the President of the Bombay Medical Union, Sir Balchandra Krishna, whose distinguished services in combating the plague won him the knighthood—certainly the best judges of the facts placed before them, accepted the statistics and conclusions as correct, unanimously considering "that the serum was the only curative remedy against plague of some potency at present known to the scientific world, the cures effected by it being at present 12 per cent. more than cures with the ordinary treatment," and passed unanimously the following resolution to be brought before the Corporation of Bombay for favourable consideration:

1. That this meeting of the local medical profession is of opinion that the treatment of plague with Professor Lustig's curative serum has given encouraging results, even under the unfavourable circumstances of hospital treatment, and that its use should be extended for the benefit of patients allowed to be treated at their houses by private practitioners. 2. That greater facilities than those given hitherto should be afforded to private practitioners in order to encourage the use of the serum in private practice. 3. That the President be requested to communicate this resolution to the President of the Corporation and the Municipal Commissioner, and to enter into such correspondence with them on the subject as seems to him necessary.

This resolution was considered by the corporation at their meeting of May 28th last, and forwarded to the Municipal Commissioner for favour of remarks. The Commissioner thereupon took immediate steps to comply with the contents of the resolution and rules for the use of the serum in private practice were framed under the supervision of Lieutenant-Colonel J. S. Wilkins, I.M.S., D.S.O., the Special Medical Officer, Plague Operations, appointed by Government, who as the result of his observations in the plague hospitals under his charge has become a keen supporter of the serum treatment.

Considering that the views entertained by your correspondent had thus been proved to be at variance with those of the responsible authorities in Bombay and with the facts, one might rightly have expected that he would have hastened to correct the wrong impression he had forced upon your readers and not have hesitated to admit the errors he had fallen into. But instead of reporting on the gratifying and promising conclusion of the experiments with Professor Lustig's serum, as would have been his duty, your correspondent reiterates *ad nauseam* his flimsy arguments in your issue of June 2nd, p. 1608, discussing the paper I read before the meeting of the Bombay Medical Union in the confused, illogical, and contradictory style quite his own—at least whenever he has occasion to write on Professor Lustig's serum treatment of plague. By an ingenious juggling once more with the bugbear of the selection of cases and by dismembering and misquoting my statements he almost succeeds in conveying the idea that the 12 per cent. claimed as improvement for the treatment have also been obtained in selected cases. And not content with this achievement he gives the last touch to the performance by doubting my figures and by deliberately insinuating that the improvement of 12 per cent. as shown by me is not real and has been arrived at by an ambiguous arrangement of figures.

I do not intend to disprove in any way your correspondent's assertions, as in doing so I would be compelled to violate the etiquette so strictly observed in controversies—viz., never to call in question the *bona fides* of arguments or statements. But what I would permit myself to say here is that anyone who has read my paper on Lustig's serum—and I trust that you, Sirs, on receipt of this will take the opportunity of reading it—and who has also read the comments of your correspondent upon it in your issue of June 2nd, must arrive at the conclusion that he either did not read my paper or did not understand it or did not want to understand it. Little flattering as the first two alternatives might be for a special correspondent and an English medical man, they are no doubt to be preferred to the third. It is much to be regretted that in a matter of great public and scientific interest which not only concerns the poor inhabitants of India, but may also at any moment concern our own families and fellow countrymen in Europe, one of the foremost medical papers of Great Britain should have to depend for its information on a correspondent who is unable to give an unbiased statement of the facts, and who, without possessing the requisite knowledge, criticises unfairly the facts and figures brought forward to show the results of the treatment of plague cases with Professor Lustig's serum.

I am, Sirs, yours faithfully,

A. MAYR, M.D.

Municipal Laboratory, Parel, Bombay, July 6th, 1900.

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*To the Editors of* THE LANCET.

SIRS,—My attention has been drawn to an article on Professor Lustig's serum which appeared in THE LANCET of June 2nd, written by your Special Correspondent in India, As one other amongst the advocates of this serum than Dr. Mayr I must call your attention to the inaccuracies which this article contains. Dr. Mayr himself is answering the various errors of your correspondent and I fully concur in what he states. As far as I am concerned in the matter I may say that as special medical officer in charge of all the plague hospitals in Bombay I have had full opportunity of seeing for myself the value of the experiments carried on at the Arthur-road Hospital with this serum and cannot understand how your correspondent could mislead you and your readers in the way he has done. As Dr. Mayr has gone into the subject fully I need not occupy any more of your space except to say that the first experiments up to May, 1899, were carried on with selected cases; since May, 1899, and up to the present time we have had every alternate case of plague admitted to this hospital treated with the serum and have nearly reached 500 on either side. On a visit of Professor Schotteleus of Freibourg University last cold weather to study the plague in Bombay he was so much interested in the results of the serum treatment that on his return to Europe he very kindly obtained for us some curative serum from the Pasteur Institute. When this arrives I propose to use it on every alternate case with Lustig's serum—i.e., one case treated with Roux's and one with Lustig's serum.

I am, Sirs, yours faithfully,

JAMES S. WILKINS, Lieut.-Col., I.M.S.,
Special Medical Officer, Plague Hospitals, Bombay.

Lansdowne House, Bombay, July 6th.

## "THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE."

*To the Editors of* THE LANCET.

SIRS,—We have seen with much surprise that the special general meeting of governors and subscribers "to consider and determine the following questions—that is to say (1) whether the demand of the medical and surgical staff for direct representation upon the board should be granted; and (2) whether it is desirable to hold a further inquiry into the condition of the hospital" has been fixed by the board of management for Saturday, August 11th. That date has been selected, according to the secretary-director, as representing "the earliest day permitted by the rules." Unfortunately, it falls in the very heart of the holiday season, when it will be impossible for any large proportion of the governors to attend the meeting. The great majority of the medical staff will also be away from town. Under these circumstances, feeling that a full and fair consideration of the questions is impossible at this time, we have requested the board of management to postpone the meeting till the end of October when an adequate attendance of governors can be secured, and have intimated to him that it is not possible for the medical staff to be represented at the meeting on August 11th, or to take any part in it. We would point out that any decision arrived at on Saturday next cannot be regarded as final and that we shall be ready, at a meeting summoned at an appropriate time, to place fully before the governors our view of the questions at issue.

We cannot venture to trespass on your space to the extent which would be necessary to point out all the statements in the letter of the secretary-manager in the *Times* of August 3rd which are calculated to mislead; but it appears to us distinctly necessary to object to what is represented as the "clear issue," and also to the apparent intention to limit the scope of the inquiry to the present condition of the hospital. What is needed is as described by us in our letter of July 27th,[1] "a full and searching inquiry into the constitution and management of the hospital, to be carried out by an independent and, at the same time, competent body."

We are, Sirs, your obedient servants,

J. HUGHLINGS JACKSON, M.D. St. And., F.R.C.P. Lond., F.R.S.,
THOMAS BUZZARD, M.D., F.R.C.P. Lond.,
Consulting Physicians to the Hospital.
R. BRUDENELL CARTER, F.R.C.S. Eng.,
Consulting Ophthalmic Surgeon.
H. CHARLTON BASTIAN, M.D., F.R.C.P. Lond., F.R.S.,
W. R. GOWERS, M.D., F.R.C.P. Lond., F.R.S.,
DAVID FERRIER, M.D. Edin., F.R.C.P. Lond., F.R.S.,
J. A. ORMEROD, M.D. Oxon, F.R.C.P. Lond.,
Physicians to In-patients.
CHARLES E. BEEVOR, M.D., F.R.C.P. Lond.,
HOWARD H. TOOTH, M.D., F.R.C.P. Lond.,
JAMES TAYLOR, M.D. Edin., F.R.C.P. Lond.,
J. S. RISIEN RUSSELL, M.D. Edin., F.R.C.P. Lond.,
Physicians to Out-patients.
W. ALDREN TURNER, M.D. Edin., F.R.C.P. Lond.,
FREDERICK E. BATTEN, M.D. Cantab., M.R.C.P. Lond.,
Assistant Physicians.
FELIX SEMON, M.D. Berlin, F.R.C.P. Lond.,
Physician for Diseases of the Throat.
VICTOR HORSLEY, F.R.C.S. Eng., F.R.S.,
CHARLES A. BALLANCE, F.R.C.S. Eng.,
Surgeons.
R. MARCUS GUNN, F.R.C.S. Eng.,
Ophthalmic Surgeon.
A. E. CUMBERBATCH, F.R.C.S. Eng.,
Aural Surgeon.

(The names of absent members have been added by authority.)

August 6th, 1900.

## "ADDISON'S DISEASE AND LEUCODERMA."

*To the Editors of* THE LANCET.

SIRS,—With reference to the interesting and valuable remarks of Sir Samuel Wilks on Addison's Disease and Leucoderma, together with Sir W. T. Gairdner's letter thereon, may I be permitted to refer to a case bearing on the point under discussion, mentioned by Heller in his recent paper on Morbus Addisonii.[1] This writer states he has seen one case of Addison's disease with symmetrical leucodermic areas, but he gives no details.

I am, Sirs, yours faithfully,

GEORGE PERNET.

Upper Gloucester-place, Dorset-square, N.W., August 6th, 1900.

[1] THE LANCET, August 4th, 1900, p. 351.

## THE COVENTRY PROVIDENT DISPENSARY.

*To the Editors of* THE LANCET.

SIRS,—At the general meeting of the British Medical Association no doubt many of the members present were surprised at the attitude of Dr. Saundby in supporting the medical men holding appointments in the Coventry Provident Dispensary and condemning any attack upon that institution. It is plain that an ex-president of Council in supporting such an institution has not made himself conversant with the facts of the case, seeing that it has been condemned by the ethical branch of the British Medical Association, THE LANCET, the *British Medical Journal*, and the *General Practitioner*, and was condemned also at the annual meetings at Edinburgh and Portsmouth, and that the institution is entirely without a wage-limit, and accepts members without any regard to their social position. This dispensary is one of glaring abuse and has been severely criticised by various committees of the Association; in addition, it has been closely investigated by a Special Commissioner of THE LANCET, who represented it as being one of the most abused institutions in the kingdom. Under these circumstances the Association will stultify itself if it takes no action in the matter, after the strong expression of opinion at the annual meetings. The profession in Coventry would suggest that the Council should appoint a special delegate (not a Birmingham consultant) to visit Coventry and report upon the whole question in dispute.

I am, Sirs, yours faithfully,

EDWARD PHILLIPS.

Coventry, August 7th, 1900.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*Small-pox and Raw Cotton.*

AN outbreak of small-pox in the urban district of Littleborough is giving some anxiety. It seems that all the persons who were attacked were employed in the card-room of one of the mills. Dr. G. C. Pitcairn, the medical officer of health of Littleborough, suggested that the manipulation of infected raw cotton started the four first cases. Precautionary measures were strictly enforced and isolated cottages secured as soon as possible for the convalescent cases until thorough disinfection could be carried out. The matter was discussed at the last meeting of the Lancashire County Council when some members considered that the suggestion as to its origin was based on surmise, and that the matter should have been more fully investigated before being printed in an important report, as it was "a most serious thing for Lancashire." Of course it is, and hence it is all the more necessary that it should be thoroughly investigated. That small-pox should occasionally be conveyed in cotton bales does not seem improbable, but it must occur so rarely that no great scare need arise. On the face of it the history of the cases certainly points to a common source of infection.

*The Port Sanitary Authority.*

At the meeting of the Manchester City Council on August 1st it was agreed to request the Local Government Board "to make an order constituting a permanent port sanitary authority out of all the councils abutting on the port, giving them adequate representation and desiring them to contribute proportionately to the expenses of the authority." So far the expenses have been borne by Manchester, Salford, and Stretford, but other towns,

[1] Encyklopädie der Haut- und Geschlechts-Krankheiten, p. 11. Edited by Lesser. Leipsic, 1900.

Ellesmere Port, Runcorn, and Warrington, for instance, have important commercial interests on the Ship Canal and ought to pay their share. So far they have not agreed as to the proportion they should bear. The Local Government Board are, therefore, to be asked to formulate an equitable scheme "as a mutual reciprocal arrangement seemed impossible."

*Pollution of Gore Brook.*

One of the most attractive and picturesque open spaces possessed by Manchester, Birch Park—or Birch Fields, as it used to be called—is traversed by a flowing brook which ought to add to the scene a beauty of its own. But the stream is black and its odour abominable, and Mr. McDougal, as alderman of the Rusholme ward of the city of Manchester, has again brought the matter before the Joint Rivers Committee. He states that although the city council have taken temporary measures to deodorise the water it is still "a source of danger and annoyance to residents in the neighbourhood and others who visit Birch Park." It was pointed out 12 months ago by a deputation representing the inhabitants of Rusholme that the stream was polluted almost from its source by a part of the sewage of Audenshaw, Droylsden, and Gorton. Promises of amendment were made by the various authorities, but only to be broken, for practically no purification has taken place. The usual excuses are made—more time required, plant not completed, &c. In the meantime the sewage flows on, and being heavily charged with a chemical precipitant all the settlement takes place in the stream itself. One of the committee said that he had seen upwards of 50 children wading in this open sewer, and "he could hardly think that the Parks Committee of the Manchester Corporation had done their duty in the matter." Proceedings are to be taken against two of the authorities, and in the meantime this unsavoury tributary of the Ship Canal flows on unchecked till its foulness is lost in the still greater foulness of the canal itself.

*The Blackburn Guardians and Vaccination.*

At the meeting of the Blackburn board of guardians on August 4th it was reported that Dr. James Wheatley, medical officer of health for the borough, had written saying that he thought it advisable, owing to the prevalence of small-pox in the town, that all the inmates of the workhouse should be revaccinated. It was decided to take no notice of the letter but to stop visiting at the workhouse. This decision means apparently that the guardians deny the inmates of the workhouse the protection from small-pox afforded by revaccination. Are paupers not entitled to such protection if they wish to have it? Shut off very much from the outer world and more ignorant possibly than the guardians, they may know but little of the danger of their contracting small-pox owing to its prevalence in the town, but in practically denying them protection the guardians take upon themselves the responsibility of any cases of small-pox that may occur among them.

*The Medical Officership of Crewe.*

The Town Council of Crewe and the Local Government Board have been in correspondence as to the stipend of the medical officer of the borough. Dr. Alfred Greenwood of Stockport has been appointed as successor to Dr. Meredith Young at a commencing salary of £300. The Local Government Board, no doubt considering that this was too little to pay to a gentleman who was to give his whole time to the service of such a populous and important town, suggested that his salary should not be less than £500. But—showing how old sins bring their Nemesis—the Council were able to retort that in the case of a former medical officer the Board had sanctioned £300 as the salary. The Board, therefore, finally stated that, "while they would have preferred" a salary of £500 a year, they would be ready to sanction an appointment at £300 a year, "on the understanding that, while giving his whole time to the council in other respects, he should be at liberty to supplement his income by acting as a consultant in cases of infectious disease if invited to do so by any other medical practitioner, by performing analyses and other laboratory work, and by receiving qualified medical men as pupils for instruction in sanitary science, and in other public work of a similar character not involving the ordinary work of a general practitioner." This is a remarkable compromise on the part of the Local Government Board.

August 7th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

*Graduation Ceremonial at Edinburgh University.*

THE summer graduation ceremonial of Edinburgh University was held in the McEwan Hall on July 28th. As usual the majority of the degrees conferred were in the Faculty of Medicine. Mr. John Philip Wood, W.S., professor of conveyancing in Edinburgh University, was the only recipient of an honorary degree—that of Doctor of Laws. The degree of Doctor of Medicine was conferred on 53 gentlemen. Gold medals were awarded to three of these—viz., Walter William Chipman (B.A.), Canada, M.B., C.M., 1895; David James Galloway, Scotland, M.B., C.M., 1884 (in absentiâ); and David Waterston (M.A.), Scotland, M.B., C.M. (with second-class honours), 1895. The degrees of Bachelor of Medicine and Master of Surgery were conferred in 10 cases and the degrees of Bachelor of Medicine and Bachelor of Surgery in 158 cases. The Cameron Prize in Therapeutics was awarded by the Senatus Academicus to Mr. W. M. Haffkine, C.I.E., in acknowledgment of the great practical importance of his researches on the prevention of plague by inoculation. The address to the graduates was delivered by Professor Hunter Stewart.

*University of St. Andrews.*

At a meeting of the University Court of St. Andrews held on July 28th the Lord Rector announced that he had received a letter from the law agent of the Marquis of Bute informing him that the Marquis of Bute proposes to offer to the University of St. Andrews the sum of £20,000 to be held as a fund for endowing a chair of anatomy, under the following conditions: 1. That the said sum of £20,000 shall be paid to the University not later than 10 years hence. The exact date cannot be specified, as it will depend on the completion of certain works at Cardiff. Interest at 3 per cent. will be payable to the University from the time of the appointment of the first professor until they receive the principal sum. 2. That the first presentation to the chair shall be in favour of Dr. Dusgrove, the present holder of the lectureship in anatomy in St. Andrews. 3. That the lectures shall be given exclusively in St. Andrews. 4. That the course shall meet the requirements of the two first "anni medici." 5. That before the beginning of the University session of 1901-1902 the approval of the Universities Committee of the Privy Council to the establishment of the chair under the foregoing conditions be obtained; and that the approval of Lord Bute or his representatives be obtained to any further conditions embodied in the ordinance instituting the chair. A postscript explained that the letter was written on the understanding that the University was prepared to make adequate arrangements for completing the permanent provision in St. Andrews of teaching necessary for the first two "anni medici." It was unanimously resolved to send the very hearty thanks of the Court to Lord Bute for his generous offer, also to print and circulate his letter and to consider the subject at a special meeting of the Court to be held on Saturday, Sept. 1st.

July 30th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Apothecaries' Hall of Ireland.*

AT the annual meeting of the General Council of the Apothecaries' Hall of Ireland on August 1st the following were duly balloted for and elected to hold office for the ensuing year, ending July, 1901:—Governor: H. A. Auchinleck, F.R.C.S. Irel. Deputy Governor: G. Stritch, L.R.C.S. Edin. Directors: Francis G. Adye-Curran, M.D. T.C.D., F.R.C.S. Irel.; A. Atock, M.D., M.S., R.U.I.; John Evans, L.R.C.S. Irel.; W. V. Furlong, L.R.C.S. Irel., L.R.C.P. Edin.; John A. Johns, M.D. T.C.D.; Robert Montgomery, M.R.C.S. Eng.; Robert J. Montgomery, M.B. Dub., F.R.C.S. Irel.; R. G. O'Flaherty, M.B. T.C.D., L.R.C.S. Irel.; Christopher M. O'Brien, M.B. Durh., L.R.C.S., L.R.C.P. Irel.; Joseph A. Ryan, L.R.C.S. Edin.; James Raverty, L.R.C.S. Edin.; James Shaw, L.R.C.S. Irel.; and C. R. C. Tichborne, L.R.C.S. Irel. Representative on the General

Medical Council: C. R. C. Tichborne, L.R.C.S. Irel., D.P.H., &c. Secretary: Robert Montgomery, M.R.C.S. Eng.

*Irish Women and University Education.*

At the recent matriculation examination of the Royal University of Ireland 150 of the 555 successful students were women, a sufficient indication of the practical interest taken in university education by women.

*The Belfast Hospital for Diseases of the Skin.*

From the annual report submitted to the supporters of this charity on July 25th I find that 894 patients were treated during the year, of whom 37 were admitted into the wards. There is a balance in hand of £77 8*s.* 6½*d.* Special reference was made to the loss which the institution had sustained in the death of its President, the late Professor Hodges, M.D. R.U.I., who for such a lengthened period took the deepest interest in its work. Dr. H. S. Purdon, who for 35 years has been closely connected with the hospital, was appointed President in place of Professor Hodges.

*Rainfall in July.*

The rainfall in the past month amounted to 4·50 inches, there being 20 days on which rain fell, and the total rainfall for the year now amounts to 23·88 inches. This has been the wettest July since 1896 and the rainfall for the present year is 2½ inches over the average and 4½ inches more than last year.

*The Outbreak of Typhoid Fever in Belfast.*

At a meeting of the City Council of Belfast held on August 1st a report from the joint committees of improvement and public health was read in regard to typhoid fever in Belfast which has been already referred to in THE LANCET. It appears that the normal death-rate from typhoid fever in the city of Belfast is 4·46 per 10,000, while in Manchester it is 1·17 and 2·16 in Birmingham—that is, Belfast has about twice as much typhoid fever as a well-regulated manufacturing city should have. As to the causes, reference was made to the water-supply, sewerage, houses with bad privy and ashpit arrangements, presence of polluted old streams, and arrangements have been made to combat these causes. In the discussion which followed one of the speakers referred to the report of the new city analyst on the Belfast water which said among other things: "Judged by the ammonia process none of these waters (samples) can be considered high-class; they all contain more volatile solids than are usually found in Belfast water. The organic or albuminoid ammonia is rather high in all the samples, but is sufficiently high in Nos. 56, 36, 35, and 57 to place them among what may be called 'suspicious waters.' Nearly all the samples contained a good deal of matter in suspension, clearly indicating inefficient filtration." The same speaker said that a report by the city analyst made two years ago for the Water Commissioners was to the effect that the water was quite unimpeachable. On the day after the council meeting (viz., August 2nd) at a meeting of the Public Health Committee Dr. Lorrain Smith's report on the bacteriological examinations (which he has made for the committee) of the water-supply was received. He examined six samples of water with the following results: (1) yielded nothing; (2) gave negative results; (3) the colonies planted out from the residue directly and after cultivation in Parietti's medium were all found after examination to belong to ordinary water bacteria; (4) plates made from filter residue directly and from the growth in Parietti's medium were carefully examined but none of them stood the tests of detailed examination; (5) gelatin plates gave an average of 90 colonies per cubic centimetre; plates from the residue directly and from Parietti tubes yielded no colonies that stood the further tests; and (6) gelatin plates gave an average of 61 colonies per cubic centimetre. Plates from the residue directly and after cultivation in Parietti's medium gave no suspicious colonies. Dr. Lorrain Smith has in his possession the record of a series of observations made during 28 weeks of the spring and summer, 1899, extending from April to October. The highest number of colonies per cubic centimetre was 250, the lowest was 50, and the average was 119 cubic centimetres. The results of the present examination are very similar to those obtained in 1899, and in the number and quality of the microbes present the water now compares favourably with that supplied two years ago at the time of the general typhoid fever epidemic. "My examination now," says Dr. Lorrain Smith, "has failed to show that there is any recent increase in contamination or that the improvement observed during last summer has not been maintained." This report clearly shows that the water-supply as a cause of the present outbreak of typhoid fever may be excluded and that the question of its origin must be considered as arising from other causes, such as bad drainage, polluted soil, and defective sanitary arrangements as present in so many Belfast houses.

August 7th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Anæsthesia during Labour produced by Injection of Cocaine into the Lumbar Arachnoid.*

M. Doléris and M. Malartic have presented to the Academy of Medicine a very interesting communication on this subject. Their observations were made at the Maternity of Boucicaut on five women to four of whom cocaine was given for abnormally severe labour pains and in one case for the application of forceps. Although too few in number for the formation of a definite opinion, the result of these cases suggested the following conclusions:—(1) The uterine contractions became painless in from five to 10 minutes with doses of from one to two centigrammes (one-sixth to one-third of a grain); (2) with a dose of three quarters of a centigramme (one-eighth of a grain) they did not cease to be felt but they were painless for 27 minutes; (3) complete analgesia lasted one hour and 28 minutes, one hour and 47 minutes, and two hours and 15 minutes with doses of from one to two centigrammes; (4) the uterine contractions were more energetic, more frequent, and more prolonged after than before the injections; (5) in the interval between the contractions the uterus remained in a state of partial contraction for a variable period, on which account until further knowledge is gained it would be prudent not to use this method of inducing anæsthesia when turning might be required; (6) the loss of blood appeared to be less than usual, and in a case of placenta praevia the bleeding stopped spontaneously before the rupture of the membranes; (7) no effect was produced on the fœtus; (8) there was no ill consequence of any importance, the principal one being slight vomiting which soon passed off; and (9) in addition to its analgesic effect the injection of cocaine seemed to increase the contractility of the uterus and to act as a vaso-constrictor of the uterine vessels.

*Tuberculosis in the Police.*

Another example of tuberculosis incidental to occupation has been discovered similar to that occurring among attendants on the sick, post-office employés, and laundresses. M. Landouzy has just been examining the statistics of invaliding and death from tuberculosis registered during the last 10 years in the Paris police force. The number of officers of the Municipal Police varied from 8153 in 1894 to 7943 in 1899. Among an average annual strength of 7678 men there were in 10 years 825 cases of invaliding, and 230 of these, or 28 per cent., were on account of tuberculosis. During these 10 years there was a total of 491 deaths, of which 249 were due to pulmonary phthisis—namely, 49 per cent., or almost exactly one-half. When it is considered that the police are picked men, specially selected firstly, when they enter the army, and secondly, by the medical officers of the police at the time of their engagement, it will be seen that the police taken altogether suffer at least as much from tuberculosis as the post-office and telegraph employés, who show 25 per cent. of tuberculous diseases. The causes in fact are the same—namely, the unhygienic state of the police buildings where the men after their hours of duty come to rest in the midst of bacteria-laden dust brought in and scattered by the trampling of many feet. Several prophylactic measures have been already taken by M. Lépine, such as the providing of spittoons containing fluid in the police buildings, damp cleaning of the floor twice a day, and washing with plenty of water once a week. But it is in the internal arrangements of the police buildings that alterations are most required, for the rooms are low, dark, ill-ventilated, and overcrowded.

*Sanatoria for Tuberculosis.*

Seven years ago the Parisian sanatorium of Angicourt (Oise), the first and only sanatorium for tuberculous patients undertaken by the Assistance Publique, was commenced. It is not yet finished and its opening, which was to have coincided with the International Congress of Medicine, is

indefinitely deferred. Its cost is said to be going to be 7,000,000 francs. In contrast to this, the sanatorium of Hauteville-en-Bugey (Ain), built privately on an excellent mountain site under the auspices of the Lyons Association for the Tuberculous Poor, will be opened on August 23rd. Patients desirous of admission must present themselves at the Hôtel Dieu at Lyons on Monday, August 20th. The tuberculous poor of Paris, however, must wait.

August 7th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Bacteriology of Scarlet Fever.*

Professor Baginsky and Dr. Sommerfeld of the Kaiser Friedrich Hospital in Berlin have made some important bacteriological observations on the bodies of children who had died from scarlet fever. In an article published in the *Berliner Klinische Wochenschrift* they report the result of the post-mortem examination of the blood and internal organs of 42 children; they also examined the blood of a living child in whom venesection was performed on account of dyspnœa, and the fluid obtained from another patient by puncture of the spinal canal. In the case of the deceased children the blood was taken from the heart immediately after death, and, moreover, pieces of the bone-marrow, the lungs, the spleen, the kidneys, the glands, the contents of the gall-bladder were examined. Cultures were made on bouillon and on agar, the result being that a streptococcus was found to be present in every instance, sometimes growing like a pure culture in the blood taken from the heart as well as in the bone-marrow. The presence of the streptococcus was independent of the character of the disease; it appeared in the very malignant cases, where death occurred within a few days, as well as in those in which death took place at a later stage from complications. The streptococci grew in series of from three to fifty individuals, the form varying according to the culture medium. Sometimes diplococci were found. They were easily stained with anilin colours and they retained the colour with Gram's stain. They grew on alkaline bouillon, agar, blood-serum, &c., and did not liquefy gelatin; the colonies were like those of the other species of streptococci. Experiments on animals showed that the cultures differed greatly in virulence; sometimes small quantities were sufficient to kill animals, in other cases the inoculations were harmless. The virulence of the streptococci could be augmented by repeated inoculations. The animals died with symptoms of septicæmia, swelling of the spleen, and hyperæmia of the kidneys and intestines, and pure growths of the streptococcus were found in their organs. The virulence of the cultures decreased after a few days, but when the cultures were preserved by ice it remained unimpaired for four or five weeks. The media in which the cocci were cultivated became very virulent, injections of pepton-bouillon killing animals within 24 hours. Professor Baginsky and Dr. Sommerfeld in their *résumé* do not assert that this coccus is the specific cause of scarlet fever, although they attach importance to the fact that it was found in all 42 cases examined. It would be possible to recognise a case as scarlet fever if this streptococcus were present in the body.

*Intermittent Swelling of the Joints.*

Dr. Theodor Benda has drawn attention to certain morbid conditions of the joints termed by him "hydrops articulorum intermittens." The characteristic symptom of this disease is that a joint, especially the knee-joint, becomes swollen at periodical intervals which are, as a rule, very regular. The swelling sometimes occurs every eighth, sometimes every eleventh, day, and so on. In a few instances the swelling appeared every day at the same time and lasted for about an hour. In the majority of cases the swelling was not very painful nor was the patient's state altered. Fever seldom occurred. The affection was sometimes the sequel of a traumatic lesion. The prognosis was very uncertain. In one instance the disease continued for 20 years; in another instance it terminated in recovery after 13 years. Complete recovery was obtained in about 33 per cent. of the cases, but in about 50 per cent. no alteration was perceptible, whilst in the remaining cases the attacks became less frequent. A great many remedies have been tried, but the results of treatment have not been satisfactory. Injections of iodoform and carbolic acid into the joint, and the administration of quinine and arsenic were tried, while electricity and balneological treatment were successful in one case and unsuccessful in another. Opinions differ very much as to the nature of the affection. Dr. Benda has found 55 cases described in the medical literature of different countries, not including two patients observed by himself. The efficacy of quinine in some cases has been ascribed to a connexion with malaria; rheumatic fever, syphilis, menstruation, and other causes have also been alleged. The majority of the writers on the subject are of opinion that the fits are due to a neurosis of the vaso-motor nerves, as some of the patients also suffered from other nervous symptoms, such as paralysis, epilepsy, hysteria, &c. Dr. Benda says that the etiology of the affection is not yet known. The causes of the periodicity which is the characteristic symptom of the disease are just as obscure as those of other periodical phenomena such as hemicrania and recurrent insanity.

*Medical Congresses.*

The German Association of Naturalists and Medical Men will meet this year at Aix-la-Chapelle. This town has been chosen as it is situated on the direct line of communication between North Germany and Paris and so that members returning from the Paris Exhibition may find it easy to attend the meeting. Aix-la-Chapelle has a considerable number of British visitors who may perhaps feel an interest in some of the subjects discussed. Papers will be read by the celebrated chemist Professor van 'tHoff on Inorganic Nature, by Professor Hertwig on the Development of Biology, and by Professor Naunyn on the Present Position of Clinical Medicine. Dr. von Drigalski will deliver an address on the expedition to the South Pole, and Dr. Haussmann will discourse on some problems connected with cells and their importance for organotherapy, &c. In the medical section the theory of neurons will be discussed.—Professor Virchow was elected honorary president of the International Congress of the Medical Press held in Paris from July 26th to 28th. The Association of the German Medical Press was represented by Professor Posner, editor of the *Berliner Klinische Wochenschrift*.

August 6th.

# Medical News.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At recent sittings of the Scottish Conjoint Board held at Glasgow the following candidates passed the respective examinations:—

*First examination (five years' course).*—Ernest Gaunt, Yorkshire College, Leeds; John Clegg Pickup, Glasgow University; Archibald Frank Spinks, Anderson's College; Percival Henderson, University College, Liverpool; William Wallace Dempster, Queen's College, Belfast; Michael Joseph J. De Jong, Ceylon Medical College; William Arthur Magill, Queen's College, Belfast; William Miller Ramsay, St. Mungo's College; J. J. F. M. O'Flaherty, Queen's College, Galway; Michael Philip Desmond, Queen's College, Cork; James B. Patterson, St. Mungo's College (with distinction); Thomas F. Murphy, Queen's College, Cork; Norman B. Watch and George Hart, Anderson's College; and John H. Roberts, St Mungo's College.

*First examination (four years' course).*—Adam Ardill, Dublin Schools.

*Second examination (five years' course).*—Robert Calder Blyth, Archibald M. Laurie, and William Douglas Cockburn, St. Mungo's College; Walter Ball, University College, Liverpool, and Anderson's College (with distinction); Henry Raynor Helsby, University College, Bangor, and St. Mungo's College; John Forbes Webster, and Reginald Norman Macdonald, Anderson's College; Alexander Russell Young and Thomas Joseph M'Caigney, St. Mungo's College; and Michael John M'Carthy, Queen's College, Cork.

*Second examination (four years' course).*—Thomas B. Trotter, Anderson's College; and Honorine Forbes, Calcutta Medical College.

*Third examination.*—Andrew Young and John Kean, St. Mungo's College; Alice Evangeline Brown, London School of Medicine for Women; Ethelbert Hearn, Firth College, Sheffield; Robert John Roberts, St. Mungo's College; Joseph Edwin Cooper, Newcastle School of Medicine; Rudolph de Mello, Grant Medical College, Bombay; and Ernest L. M. Hackett, Queen's College, Cork.

*Final examination (and admitted Licentiate of the three co-operating authorities).*—Percival Horace Rainbird and George Johnstone Campbell, St. Mungo's College; Alice Miles, Queen Margaret College; Sarah Harper Smith, London School of Medicine for Women; Albert Edward Ward, Anderson's College; John Thomson Malloch and Harry Miller Roberts, St. Mungo's College; Mary Eleanor Rocke, London School of Medicine for Women; Rupert Edward Moorhead, Anderson's College and Glasgow University; Charlotte Rudd, Ceylon Medical College

Richmond Goulden, Owens College, Manchester; David Crombie and Thomas Day Bird, St. Mungo's College; Richard Henderson O. Garbutt, Newcastle School of Medicine; Andrew Asher Brown, Surgeons' Hall, Edinburgh; Richard M'Kim Wilkin, Anderson's College and Queen's College, Belfast; Abraham George Sutton, Queen's College, Cork; Alexander Scoular, Anderson's College; James T. O'Connor, Queen's College, Cork; John James Lynch, Queen's College, Cork; Francis Fernandes, Grant Medical College, Bombay; Harold Robert Loverock, Royal College of Surgeons, Ireland; John Taylor, Glasgow Schools; Samuel Graham Kinloch, Edinburgh School; Rudolph de Mello, Grant Medical College, Bombay; Albert George Meares, Melbourne University; Daniel Samuel Coto and Augustus Daniel Kearney, Melbourne University; William John Buckmaster Queen's College, Cork; Thomas Randolph Hunter, Anderson's and St. Mungo's Colleges; Thomas Baird Trotter, Aberdeen University and Anderson's College; Patrick Brady, Dublin School; and Francis Joseph Nolan, Dublin School.

UNIVERSITY OF EDINBURGH.—The following is the official list of passes at the recent examinations for degrees in medicine and surgery:—

*First professional examination.*—M. I. Ali Khan, John Allan, D. I. Anderson, C. T. Ayana, E. A. Aylward, J. W. H. Babington, R. B. Burnetson, J. R. Bartholomew, W. J. Basson, Benjamin Baty, W. P. Beattie, D. W. Boswell, F. T. Bowerbank, F. R. Bremner, M.A., David Brown, W. S. Murdoch Brown, L. G. Bruce, G. L. Brunton, Mary T. Cameron, T. F. Campbell, T. E. Carlyle, V. T. Carruthers, Mildred M. L. Cathels, R. A. Chapman, W. P. Chrystall, D. M. C. Church, Lizzie M. S. Clark, John Clarke, M. L. Cohen, B.A., A. G. Coullie, T. E. Coulson, James Craw (with distinction), G. A. Davies, Robert Donaldson, M.A., S. E. Douglas, C. E. Dumanoire, E. J. Elliot, Hugh Ferguson, J. M. R. Flament, W. H. Fosyth, W. J. Fraser, N. J. H. Gavin, H. V. Goldstein, Eleanor A. Gorrie, Percy Gosnold, B.A., Thomas Gowans, J. M. Graham, William Grant, W. W. Greer, E. J. Griffiths, Elizabeth C. Gunn, T. M. Guthrie, P. A. Harry, A. W. Hogg, M. A. Huk, M. M. Huk, J. H. Hume, K. U. A. Innis, Ada Jackson, John Jardine, William Jarvis, J. M. Johnston, J. H. H. Joubert, G. P. Joy, S. F. Jung, G. F. S. Landon, F. E. Larkins, S. W. S. Leary, A. G. Leitch, A. J. Lewis, C. W. Lewis, B.A., James Lochhead, M.A., D. H. C. MacArthur, S. A. M'Clintock, William M'Conaghy, J. S. MacDonald, J. W. M'Ewan, J. P. M'Gowan, M.A., H. R. Macintyre, James Mackenzie, Amy M. Mackintosh, William MacLaren, Neil M'Leod, Alexander MacRae, M. M. Mamourian, L. S. Milne, K. A. Moody-Stuart, W. M. Munby, D. S. Murray, A. W. Neill, C. D. O'Neal, Armand Pampellonne, Bernard Pickering, Florence M. S. Price, D. S. R. Rao, H. S. Reid, Margaret H. Robertson, Thomas Robertson, Joseph Robinson, B.Sc., S. C. Roy, C. S. Ryles, A. I. Shepheard-Walwyn, F. R. Sinton, L. H. Skene, C. J. Smith, E. H. Smith, G. M. Smith, R. A. L. van Someren, Patrick Steele, George Stewart, H. M. Thompson, Archibald Tedrick, Rose C. Townend, Caroline Twigge, G. H. Ussher, F. L. de Verteuil, William Waddell, Thomas Walsh, R. H. Watt, W. H. Welsh, D. W. Wilton, W. B. Wishart, Thomas Wright, and Margaret C. W. Young, M.A.

*Second professional examination.*—Farhat Ali, W. L. L. Alston, Lewis Anderson, W. W. Anderson, R. G. Archibald, James Arthur, Nina H. Beath, Constance A. Bennet, J. G. Briggs, W. A. Brown, G. G. Buchanan, W. C. Burton, E. E. Cassaday, R. V. Clark, M.A., Maurice Davies, A. R. Douglas, C. B. Drew, Percy El-Karey, John Fairbairn, A. B. Fiett, Agnes J. Gardner, P. E. H. Guiseppi, W. L. M. Goldie, R. G. Gordon, Philip Hallam, D. J. Hamman, Frances M. Harper, A. O. Hooper, William Hume, John Hunter, Arthur Hutley, Bertha Jex-Blake, Saiduzzafar Khan, E. A. King, W. E. Knight, Hermann Kramer, Vivian Langmore, Abraham Leach, Duncan Lorimer, A. W. B. Loudon, W. F. Macdonald, Daniel Mackinnon, S. W. Maclean, J. J. M'Millan, E. L. Meynell, R. C. Monnington, A. E. Morton, E. J. Morton, P. H. Mules, R. S. Munro, Frank O'Neill, Sophie Palmer, Herdman Porter, E. C. Prichard, Agnes M. Pringle, A. M. Pryce, A. F. H. Rabagliati, J. J. Redhead, E. M. Reece, R. E. Russell, C. W. V. Rutherford, David Sandler, Meurice Sinclair, G. W. R. Skeen, G. D. Sloan, D. W. Standley, Elbert Steyn, G. C. Trotter, Philip Vickers, J. F. van de S. de Villiers, John Wallace, B.Sc., George Wright, and E. E. Wood.

*Third professional examination.*—D. M. Aitken, M.A., R. V. C. Ash, J. W. Barrack, E. S. Brett, D. G. Carmichael, A. W. S. Christie, R. V. Clark, M.A., H. L. Clift, W. I. Dunn, O. J. Evans, A. H. Firth, G. A. Forrest, Robert Hamilton, P. J. Hay, John Jamieson, G. A. Jolly, E. W. Lewis, C. H. Lindsay, Samuel Lyle, Harriet E. M'Cloghry, H. K. Macdonald, Wilfrid M'Farlane, N. F. MacHardy, George M'Neill, Thomas Mill, Robert Morison, William Murray, J. G. Peebles, E. T. Potts, L. T. Price, F. L. Rigby, J. S. E. Robertson, A. L. Roxburgh, G. W. R. Skeen, C. W. Somerville, B. A. Spence, C. S. Steavenson, I. S. Stewart, G. C. Strathairn, John Sullivan, H. P. Thomson, E. J. Tyrrell, A. G. Waugh, and Ada Wilkinson.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Professor A. Born of Breslau, aged 50 years. His subject was anatomy and more particularly embryology.—Dr. Moussier, surgeon to the Nantes hospitals.—Dr. Skene, formerly Professor of Gynæcology in Long Island College Hospital, Brooklyn.—Dr. Shakespeare, a well-known Philadelphian ophthalmic surgeon.—Dr. Sutuguin, formerly *docent* of Gynæcology in the St. Petersburg Medical Academy.—Dr. John Ashhurst, the well-known American surgeon. He was formerly Professor in the University of Pennsylvania.—Dr. Hermann Dohnberg, Professor of Ophthalmology in St. Petersburg, has been assassinated.—Dr. Kristeller, *privat-docent* of Gynæcology in Berlin.—Dr. B. D. Howard, formerly Professor of Surgery in the University of Vermont.

NEWTON ABBOT WORKHOUSE.—At the meeting of the Newton Abbot (Devon) Board of Guardians held on August 2nd it was reported that £19,000 had been already expended upon the new building. The guardians resolved to apply to the Local Government Board for permission to borrow an additional £5500 for the erection of a new boardroom and also for providing receiving wards and tramps' wards.

THE OWENS COLLEGE.—The council has appointed Mr. F. A. Southam to be Professor of Clinical Surgery in place of Mr. W. Whitehead, who has resigned, and Mr. G. A. Wright to be Professor of Systematic Surgery in place of the late Mr. T. Jones. These appointments are subject to the confirmation of the Court of Governors which will meet in October. The council has also appointed Mr. W. Thorburn to be Lecturer in Operative Surgery and Mr. Joseph Collier to be Lecturer in Practical Surgery.

PRESENTATION TO A MEDICAL MAN.—In connexion with the legal proceedings taken against him twelve months since (which resulted entirely in his favour), the heavy law expenditure which he incurred, and his subsequently failing health, Mr. James Joseph Tracy, M.B. R.U.I., of Cork, has just been presented with a testimonial. At a recent meeting of his professional brethren it was unanimously resolved to present Dr. Tracy with an address and a purse of sovereigns as tokens of sympathy and esteem. Dr. N. J. Hobart made the presentation on behalf of the subscribers.

INOCULATION FOR THE PLAGUE.—The annual report of the Presbyterian Mission Hospital at Miraj, under the charge of Dr. W. J. Wanless, has just been issued. In reality it deals with parts of the years 1898 and 1899. For three and a half months in 1898 and the early months of 1899 plague prevailed in the town of Miraj resulting in the practical closure of the hospital and dispensary during this time. A full 12 months' work in either year could not therefore be recorded. With regard to the plague the report says the great benefit derived from inoculation is evident from the following: there were among the once inoculated 39 attacks and 22 deaths, and among the twice inoculated two attacks and one death. The population in the town and fields of uninoculated persons from Sept. 13th, 1898, to March 13th, 1899 (six months), could not have been less than 1300. Among these uninoculated persons there were 1314 attacks and 1092 deaths, a rate (to the population) of 10·1 per cent. of attacks and a rate of 8·4 per cent. of deaths, and a percentage of 83·1 of deaths among the attacked, while among the once inoculated the rate of attacks (to the population) was 1·9 per cent., and of deaths 0·8. In the twice inoculated the rate of the attacks was 0·4 per cent., and the rate of deaths 0·2 per cent. The total number of inoculations against plague with Haffkine's prophylactic serum performed in this dispensary to Dec. 31st, 1899, was 4274.

# Parliamentary Intelligence.

## HOUSE OF COMMONS.

THURSDAY, AUGUST 2ND.

*The Vaccination Question in Scotland.*

MR. EDMUND ROBERTSON asked the Lord Advocate whether his attention had been called to the recent conviction in the Dundee Sheriff Court of a number of men for failing or refusing to have their children vaccinated, and to the fact that accused pleaded conscientious objections, and on conviction preferred to go to prison rather than pay the fines imposed; whether similar cases have occurred in other parts of Scotland; and, whether, having regard to the difference now existing between the laws of England and Scotland on this matter, and to the dissatisfaction created thereby, the Government would consider the question of the assimilation of the laws of the two countries on this matter.—The LORD ADVOCATE replied: I have seen a report of the Dundee case referred to and I am aware of similar cases in Aberdeen and Kirkcaldy. I believe such cases, however, to be very few. In the six convictions at Dundee referred to five went to prison and one paid the fine. One of the five paid the fine *pro tanto* after a detention of one day. I have reason to believe that there is a great preponderance of opinion in Scotland in favour of the existing law, and the Government do not propose to consider the question of assimilating the Scotch law to the English law.

*Water Filters for South Africa.*

Dr. FARQUHARSON asked the Under Secretary of State for War whether, considering the spread of enteric fever in South Africa, he would consider the possibility of increasing the number of pocket Rustem filters served out to the troops on active service there.—Mr. WYNDHAM replied: No filters of the kind referred to have been issued

the troops. The only filters that have been issued are of the Berkefeld and Stack and Brownlow type.

FRIDAY, AUGUST 3RD.

*Vaccination Questions.*

Mr. HEDDERWICK asked the President of the Local Government Board how many calves were kept by the department as reservoirs of lymph for vaccination purposes; how many of the animals so used were sold annually as food for the people; and where the sales took place.—Mr. CHAPLIN replied: The average number of calves now vaccinated weekly at Lamb's Conduit-street is 17. All the calves from which lymph has been collected are, within the next few days, slaughtered under veterinary supervision and the calves passed on veterinary authority as sound are sold in the Central Meat Market, Smithfield.—Mr. CHANNING asked the President of the Local Government Board whether, seeing that the opinion of the law officers of the Crown, based on the case of Bramble *v.* Lowe, by which he had justified the action of the Board in treating vaccination officers as servants of the Board and not as subject to the directions of the guardians, referred only to prosecutions under Section 31 of the Act of 1867, the opinion of the law officers had been taken on the extension of this practice of ousting the power of the guardians to direct the proceedings of their vaccination officer to prosecution under Section 29 of the Act of 1867; and whether he would give the opinions of the law officers as a parliamentary paper. — Mr. CHAPLIN replied: The hon. Member is under a misapprehension in supposing that the Local Government Board have treated the vaccination officers as their servants. As the Board explained in their circular of Oct. 21st, 1898, the power and the duty of taking proceedings are vested in the vaccination officer under the Vaccination Act passed prior to the Vaccination Act of 1898 without any order of the board of direction from the guardians. The opinions which the law officers have given to this effect referred to prosecutions both under Section 29 and Section 31 of the Vaccination Act, 1867; but it would be opposed to the established practice to publish these opinions.—Mr. WOODS asked the President of the Local Government Board whether he was aware that the minimum fees fixed by the Vaccination Order, 1898, pressed heavily on the local ratepayers at Wigan and other places, and that there was paid in the Union of Wigan for the year ending Lady Day, 1898, £516 9*s.* 5*d.*; for the year 1899, £433 5*s.*; and for the year 1900, £1541 7*s.* 7*d.*; and whether, in view of these charges, he would consider the whole matter with a view of placing them on a more reasonable basis. — Mr. CHAPLIN: We have not got the figures for 1900 which show the increase in expenditure at Wigan, but the establishment of a system of domiciliary vaccination has necessarily added to the cost of vaccination, as the duties of the officers have in consequence been very considerably increased. Moreover, the amount of the fees to some extent depends on the number of successful vaccinations, and I am glad to say that this number has been largely augmented since the Vaccination Act of 1898 came into operation. In the Wigan Union there was an increase of about 60 per cent. in the number of successful vaccinations in 1899 as compared with 1898. I have, however, received other representations on this matter and I am, as I always have been, willing to consider whether an alteration should be made in the minimum fees prescribed by the vaccination order; but I think we should have some further experience before determining whether this course ought to be adopted.

*Pollution of the Thames.*

Viscount SANDON asked the President of the Local Government Board whether his attention had been called to a recurrence of pollution of the river Thames near the sewage pumping stations at Halfway Reach and Barking Reach; and whether he would cause the necessary steps to be taken to obtain an abatement of the nuisance as a precaution against danger to health of those engaged upon the river.—Mr. CHAPLIN replied: I have made inquiry on this subject and I am informed that it is the recent hot weather which is mainly responsible for the nuisance complained of in the part of the river referred to in the question. I learn from the London County Council that they are fully intent on further improving the condition of the river and that they have undertaken several large works with that object. The Local Government Board have no power to take any steps in the matter.—Mr. STEPHENS asked the President of the Local Government Board (1) whether his attention had been called to the fact that during the year 1899 33 sewage overflows dischargod sewage into the Thames on its northern side within the London area; and (2) seeing that such discharges of sewage were liable to take place whenever the rainfall exceeded one-tenth of an inch and that the existing obligations of law compelled local authorities to admit the combined drainage of sewage and water to their sewers, whether, in the next session of Parliament, it was his intention to introduce a Bill to enable the local authorities to keep separate, if they desired to do so, the sewage and the water drainage of their districts.—Mr. CHAPLIN replied: No, sir; my attention has not been called to the facts referred to and I have no information to show how far they are as suggested in the first paragraph of the question. With regard to the second paragraph, local authorities have the power to provide, and they have in some instances already provided, separate systems for sewage and water drainage. The further legislation suggested on the subject, it appears, would raise questions of considerable importance which would involve heavy expense, and in any case I am not prepared to give any pledge with regard to legislation next session.

*Enteric Fever in South Africa.*

Sir WALTER FOSTER asked the Under Secretary for War for the figures as to the number of admissions at Bloemfontein and Kroonstad for enteric fever during certain weeks and the number of deaths.—Mr. WYNDHAM replied: The figures are as follows, viz., Bloemfontein, week ended June 8th, 487 admissions, 98 deaths; week ended June 15th, 213 admissions, 64 deaths; week ended June 22nd, 221 admissions, 52 deaths. Kroonstad, week ended May 25th, six admissions, no deaths; week ended June 1st, 83 admissions, 12 deaths; week ended June 8th, 18 admissions, 18 deaths; week ended June 15th, 66 admissions, 11 deaths.

MONDAY, AUGUST 6TH.

*The Remuneration of Civil Practitioners in South Africa.*

Mr. ELLIS GRIFFITH asked the Under Secretary of State for War whether his attention had been called to the fact that civil medical officers in South Africa did not get colonial allowance, though such allowance was allowed to every other person now serving in the British army in South Africa; and whether he would take steps to remedy this state of affairs.—Mr. POWELL WILLIAMS, replying for Mr. WYNDHAM, said: The civil medical practitioners engaged for service in South Africa are paid according to the special terms for which they engaged—viz., pay at £1 a day, field allowance at 3*s.* 6*d.* a day, servant's allowance, Government horse with forage, and field rations while in the field, with a gratuity of two months' pay at the expiration of their contract. They accordingly receive higher emoluments than many of the officers of the Royal Army Medical Corps. The Secretary of State for War sees no reason for making any addition to their emoluments.

*The South African Commission of Inquiry.*

On the motion for the second reading of the Appropriation Bill Mr. BURDETT-COUTTS complained that there had been no opportunity for discussing the constitution as a whole of the Commission appointed to inquire into the care and treatment of the sick and wounded during the South African campaign, but without going into the question then the hon. Member set himself to show that the Commission was without the powers essential to bringing out the whole truth, and that the great interests involved in the inquiry would be imperilled, if not defeated, by the course which had been followed. The Commission, he said, had neither the power to take evidence on oath nor to compel the attendance of witnesses and consequently went forth at the mercy of one side and one interest in the inquiry and that the interest and side most involved in its own exculpation. The Commission had gone out to South Africa where nine-tenths of the evidence in the case was under the control of the Army Medical Department or some other department of the War Office. Their hand reached over the whole field of witnesses and of course they would organise the evidence and select the witnesses. While on the one side there would be this powerful organisation, on the other there would be absolutely nothing except the voluntary act of witnesses 99 out of 100 of whom believed, rightly or wrongly, that their future would be prejudiced by coming forward. The hon. member read to the House extracts from a number of letters by military and civil surgeons and others, in which reference was made to the apprehended consequences of coming forward with evidence, and, in conclusion, he asked the Government whether it was not still possible to increase the powers of the Commission.—Mr. BALFOUR, in reply, said that there had been few commissions with the power of taking evidence on oath and compelling the attendance of witnesses, and he pointed out that if this Commission had received such power it would have found it difficult to exercise it in self-governing colonies. As to the other issues, he thought that the hon. member was very ill-advised in raising them, especially at this time, when the Commission had embarked upon its inquiry and after the hon. member had himself been examined before the Commission.—Sir WALTER FOSTER expressed the opinion that the Government had taken too narrow a view of this inquiry. For himself he had no desire to obtain the slightest party advantage one way or the other, but he did desire that they should have a searching inquiry and get full knowledge of how it came about that their heroes in Bloemfontein were allowed to die in bell-tents in the manner described by the witnesses before the Commission. To this knowledge every citizen was entitled. With regard to the general situation he considered it was an enormous blot upon the campaign that there should have been between 16,000 and 17,000 cases of typhoid fever amongst our troops; to him that circumstance was enough to show that there had been something wrong in the administration in South Africa.—Colonel BLUNDELL, speaking as an old soldier, said that he had every confidence that the Commission would conduct a proper inquiry and arrive at a proper conclusion.—The House then proceeded to the discussion of other subjects.

TUESDAY, AUGUST 7TH.

*Inoculations at the Brown Institution.*

Mr. MOSS asked the Home Secretary if his attention had been called to a statement by the superintendent of the Brown Institution that the inoculations with rabies performed in that institution were of no use except for the purpose of compiling statistics; and whether, seeing that these inoculations with rabies inflict suffering on a number of animals, he would take the necessary steps to prevent their continuance in that institution in future.—Sir MATTHEW WHITE RIDLEY replied: The superintendent of the Brown Institution states that the question does not accurately represent any opinions expressed by him. He considers that the inoculations referred to afford the only means of determining the existence or non-existence of rabies in a suspected animal.

*The Increase of Vaccination in England.*

Sir WALTER FOSTER asked the President of the Local Government Board whether he could state the number of certificates of successful primary vaccination received by the vaccination officers during the year 1899 as compared with 1898, and the number of such certificates received for the first six months of this year as compared with the similar period of the years 1898 and 1899.—Mr. CHAPLIN replied: The number of certificates of successful primary vaccination received by vaccination officers during 1899 was 669,349 as compared with 500,314 during 1898, being an increase of 169,035 or 33·9 per cent. I have not received returns as to the number of such certificates during the first six months of the present year.

*Medical Reinforcements for South Africa.*

Sir WALTER FOSTER asked the Under Secretary of State for War if he could state the strength of the reinforcement of trained men of the Royal Army Medical Corps which it had been recently decided to send out to South Africa.—Mr. WYNDHAM replied that the strength of the reinforcements was 300.

*The Remuneration of Civil Practitioners in South Africa.*

Mr. WYNDHAM, replying to questions on this subject, said: The position of these gentlemen differs in one important particular from that of officers of the Royal Army Medical Corps. The latter receive rates of pay which are calculated with reference to the general services which they have to perform at all times and in all parts of the world. The conditions of the present war are, however, unusual as regards the specially high cost of living in South Africa, and it was therefore thought reasonable that special colonial allowances should be granted to them to enable them to meet this extra expense. The case of the civil surgeons is quite different. They made a special

contract for service in South Africa during the present war, and there is, therefore, nothing unforeseen in the conditions of their service which we feel called upon to meet by an alteration in their favour in the terms of the contract. As a matter of fact, they receive higher emoluments than many of the officers of the Royal Army Medical Corps. My attention has been called to the fact that civil veterinary surgeons are receiving colonial allowances. That is so, the reason being that they are paid at the rate of army veterinary surgeons and not at a special rate calculated with a view to the present war.

WEDNESDAY, AUGUST 8TH.

*The South African Commission of Inquiry.*

Mr. EDMUND ROBERTSON asked the Leader of the House whether he could give any estimate of the time when the report of the Commission on the care of the sick and wounded during the South African campaign might be expected.—Mr. BALFOUR replied that he had no authoritative estimate but he knew that the Commission did not anticipate that the South African inquiry would occupy any very considerable time.

# THE SOUTH AFRICAN COMMISSION.

WEDNESDAY, AUGUST 1ST.

THE Commission appointed to inquire into the care and treatment of the sick and wounded in the South African campaign resumed their sitting, with Lord Justice ROMER in the chair, at Burlington House, this being their last meeting in London before going out to South Africa. The meeting lasted for about six hours and a large number of witnesses were examined.

The CHAIRMAN at the start made an explanatory statement with regard to the conduct of the proceedings of the Commission. So far, he said, the whole of the evidence had been taken in presence of shorthand writers and made public, and this practice would be continued except in certain circumstances. It had been stated to the Commission that some witnesses who could give useful evidence might be deterred by fear of consequences from coming forward and giving information. The Commissioners had felt some difficulty with regard to this subject, but they were determined that information should not be withheld from them on any such ground and on consideration they had come to the conclusion that the names of witnesses who felt this apprehension or the particulars by which they could be identified should not be printed or published if they so desired it. The Commissioners, however, would take care that witnesses should not be permitted to use the withholding of their names as a cloak for making personal attacks upon individuals.

Mr. R. O'CALLAGHAN said in the course of examination that he went out to South Africa as surgeon-in-chief of the Langman Hospital. At Cape Town, where they were detained for several days, he visited the base hospitals and he could say of them that they were as absolutely perfect as one could expect or wish for. They reached East London on March 26th, and though all the while they were urging the authorities to hurry them forward they did not disembark until the day after the arrival of the ship. The railway authorities at East London were quite alive to the urgency of hospital aid at Bloemfontein, for they had a special train to take forward the Langman Hospital, but all along the line they found themselves being thwarted by the military authorities whose great anxiety was to get through military stores. They had to leave East London without two of their trucks. As for those they got away, it was with the greatest difficulty that they got them forward; they had practically to sit on them and say that if the trucks did not go forward they themselves would not move. If they had not done this the trucks would have been turned into sidings. After a journey of three or three and a half days they reached Bloemfontein on April 2nd, and owing to the other stores not arriving from East London they were absolutely useless for four days. No words were strong enough to describe the dilatory fashion in which the stores of the Langman Hospital were treated, for it must be remembered that the cry for hospitals at Bloemfontein at this time was almost as urgent as the cry for help from the Legations in Peking. The Langman Hospital was intended for 100 beds, but there was such a rush of cases that they took over 50 more beds; before taking these over, however, they made it a condition that they should have utensils and nurses for them. Before leaving this country they applied to the War Office and the Director-General to be allowed to take nurses, but they were refused, though when they got to Bloemfontein they received the services of nurses. At Bloemfontein there were utensils and other things they could not get from the authorities, but fortunately Mr. Langman was with them and he went and bought the things at his own expense. That, witness thought at the time, was rather hard lines considering that they were in the enemy's country. In the hospital everything went smoothly and successfully once it had been started, and so far as he was aware nobody had any cause for complaint. They never got all the fresh milk they wanted. He believed that if a due proportion of medical stores and equipment had been allowed to come up the railway a great deal of the criticism passed upon the medical arrangements would never have been heard. He saw two field hospitals near the Langman Hospital at Bloemfontein. They had been turned into stationary hospitals and no doubt there were overcrowding, undermanning, and want of nurses. While he said that he also said that no men could have worked harder than did the officers in these hospitals. The want of stores he put down to culpable leniency shown to the Free Staters.

Lieutenant C. A. LEE of the New South Wales Mounted Rifles gave evidence as to the excellence of the treatment he received in various hospitals whilst suffering from enteric fever. He said that he had the hospitals to thank for being able to appear before the Commission.

Captain THOMPSON of the 1st Australian Horse said that he became ill with dysentery and enteric fever in May between Kroonstad and Johannesburg and the regimental surgeon did all he possibly could for him. Witness was anxious to get on to Pretoria and he kept up the march, the surgeon being hopeful of staying the progress of the trouble. When, however, an engagement was expected witness was ordered back to Kroonstad, to which place he was conveyed in a Scotch cart with another officer. They found the hospital full and they were accommodated in a hotel which was turned into a hospital. There were 100 odd officers in this hotel, which had two surgeons, two trained orderlies, and some convalescent men who assisted in attending the patients. When they left Bloemfontein nobody thought there would be so large a number of cases of enteric fever and dysentery. The patients got all the care and attention they could reasonably expect under the circumstances. They had fresh milk when it could be got and always condensed milk. He knew of cases of beds, mattresses, and other things in the houses of the town being requisitioned. What struck him most of all was the wonderful amount of work got through by the medical men. Many regimental surgeons, especially after an engagement, were out all night with the wounded and on the following day they were employed with their batches of sick. Witness was in command of a squadron of cavalry attached to General French's division, and he really thought the medical men were too solicitous about the men's health and unnecessarily reduced the commands.

Mr. RUDYARD KIPLING, the next witness, said that he landed at Cape Town on Feb. 5th, and from then until the end of the month he was generally in and out of the Cape Town hospitals. He talked with the medical officers, asking them amongst other things whether they had everything they required for their patients. They replied that there was no particular strain upon the hospitals and that they had everything they wanted. When he spoke to the nurses and said that he could get things from the Absent-Minded Beggar Fund, they said that they wanted pyjamas very badly, but they added "Don't send them to the store issue department, for they will never come out; bring them to the back door." They were taken to the back door in a Cape cart and given over quietly to the nurses, and thus they reached the patients without any delay. In this way pyjamas were also supplied to the hospital train. It was reported to him indirectly that there was no medicine in the Maitland Hospital beyond a little boric acid and some quinine pills, and from the Absent-Minded Beggar Fund he sent over a few pounds' worth of medicines. They were sent privately, in the same fashion as the pyjamas, but, of course, they were given not to the nurses but to the surgeons. What he did was with the object of saving time. He saw the wounded in a hospital train coming down from the front. There was nothing bad there and everybody seemed to be working very hard. When he got to Bloemfontein, the enteric fever was only beginning and there was no strain upon the medical arrangements. He could see, of course, that there was no enthusiasm about sick cases; they were slow and uninteresting, whilst wound cases were interesting and quickly cured. When he returned to Cape Town, he went over the hospitals again. He found them perfectly clean and everybody was working very hard, but there was always this quiet complaint about the persistent slowness in getting what was required. He did not visit the Woodstock Hospital; he saw it from a distance, and the place was simply unspeakable; the air was foul and stank.

Colonel MULCAHY, the officer in charge of the Royal Army Clothing Department, presented to the Commission a series of tables showing the quantities of supplies of hospital clothing sent out to South Africa. These tables, the CHAIRMAN said, he and his brother Commissioners would examine and study during the voyage out. With regard to stationary and general hospitals Colonel MULCAHY said that in every case they shipped with them 50 per cent. of reserve in addition to the equipment. If the complement of gowns for a stationary hospital was 100 they put 150 on board. The only case where in the tables it might appear there was delay in meeting requisitions was a case where certain shirts were wired for on March 25th and a portion of these shirts were not sent out until July 21st. That meant that the particular pattern of shirt used in the hospital was not sent out, but other patterns were sent out to the number of over half a million. What were sent out were not hospital pattern shirts, but others which were practically as useful. The requisitions were quickly answered. Where they could not supply the exact article asked for they substituted other items. For instance, when a certain number of gowns could not be supplied they sent waistcoats instead. Pyjamas were not a recognised article of military hospital clothing; they had not been approved by the authorities at home; but a flannel shirt and a pair of drawers were the regulation for the military hospital and these could be used as pyjamas, and ample supplies of both articles had been sent to South Africa.

Mr. J. A. MORRISON, M.P., lieutenant in the Grenadier Guards, gave an account of his hospital experiences at Modder river and Wynberg, his general comment being that he noticed nothing deserving of complaint.

Mr. G. L. CHEATLE said that he arrived at the Modder river on Jan. 31st and found the hospitals there working perfectly. He saw no patients lying on the floor or without beds. He was there two months altogether. Lord Roberts put a hospital in his hands with the object of treating the cases of the more severely wounded. He saw the wounded from Paardeberg and Kimberley. On one day 779 cases arrived from the former place. They were all put in bed, but they were mostly afterwards sent off by train. After the first 24 hours there were no deficiencies whatever. He bought the necessary things and fed the patients, and they wanted for nothing. After the two months at the Modder river he went to Kimberley and afterwards to Bloemfontein. At the latter place he saw the Guards Brigade hospital; it had 400 patients and was very much crowded. They were a mixed lot of cases of enteric fever and dysentery, but no wounded at all. They were housed in bell-tents, marquees, and iron buildings. All the tents were entrenched and the men had mackintoshes and blankets, and in some cases red pyjamas. They complained very much of being overcrowded. They did not get any fresh milk that he knew of. The surgeons complained of the amount of work. He advanced from Bloemfontein with General Pole-Carew. When men got wounded and required treatment he stopped behind and looked after them in the Boer houses. The wounded were very well attended to in that advance and got everything which they required. Witness was with the advance to Pretoria all the time and of course passed through Kroonstad. He could only speak as to the care of the wounded; he could not speak of the typhoid fever or dysentery cases. As far as the treatment of the wounded was concerned, they had everything—plenty of dressings—and he never had any difficulty whatever. They had sufficient orderlies, and whenever they left a man behind they left with him a surgeon and an orderly. He was for two or three days outside Pretoria. Then he went on to Silvertown and brought back

the wounded to Pretoria and then he came home. At no time did he feel hampered by the want of medical equipment.

Lieutenant-Colonel F. BARROW, A.M.S., Principal Medical Officer of No. 9 General Hospital said that the hospital was equipped at the Albert Docks, London, for 500 rank and file and 20 officers and that it reached Bloemfontein about April 7th. Owing to the block in the railway service they had to wait for 10 or 12 days for the arrival of the equipment. The railway people said that they would forward it from Port Elizabeth and then it only came in driblets. What was said was, food first, then ammunition, and then medical equipment, and of course witness agreed with that view of the case. They were practically without anything to do for a fortnight. As he said, they were equipped for 520 patients, but they got 1500, 1600, and 1800 patients dumped down upon them. They had 88 marquees, and he asked for 25 more and got them; it was all they had. They had a surplus of sick mild cases. They requisitioned bell-tents for them and got them at once, and into each bell-tent they put two or three patients, but no serious cases. If cases became serious they were sent from the bell-tents to the marquees. He considered that the hospital was very fully equipped. He had been on service three or four times and he never saw a more complete hospital. They got beds made locally and on these they put mattresses in the bell-tents. All the marquees had proper spring mattresses. In the bell-tents they had the improvised local pattern of bed, with locally provided mattresses which answered very well. Their water-supply was inadequate owing to the break-down of the waterworks. They were entitled to 60,000 gallons of water per day and they found difficulty in getting 6000 gallons from two wells. They were told to boil the water, but they had no firewood and there were no trees to cut down. This state of things lasted for three weeks until they got a supply of coal and wood from the base. Naturally they ran short of regulation army stores. They had to requisition persons who were not trained orderlies, but they did their best and, indeed, did very well. He went morning, noon, and night round the tents and asked for complaints and he never heard one. He heard one patient say to General Kelly-Kenny that he had had nothing to eat for eight days, but as a matter of fact this man had had 11 pints of liquid, and because it was not solid food, which was not indicated in his case, he considered that he had had nothing to eat. What he had had consisted of bovril, beef-tea, milk, and jellies. Witness himself used to sleep in a bell-tent. He personally stopped the supply of fresh milk because of the risk of contamination owing to the dirty habits of the Kaffirs. He preferred the condensed unsweetened milk because it was impossible to contaminate it. They had tons of condensed milk, and 2000 or 3000 tins of it were used every day. As to the men's rations, there were frozen mutton and fresh meat, and very often they had to bury it because, although the ration had been drawn, the patient was unequal to eating it. War meant waste, and, no doubt there was waste in this connexion. Later he issued orders not to draw the full rations because they had milk, bovril, and medical comforts taking their place. As to the bell tents they had no overcrowding at any time in connexion with No. 9 Hospital. In fact, he never saw a thing more splendidly done by the Government, and goodness knew what the bill would be. The officers and the rank and file had exactly the same treatment as far as medical comforts were concerned. There were lots of patients who arrived with absolutely nothing the matter with them. There was one orderly to three tents, and when there was very little the matter with the patients that was quite sufficient. If there had been any water on the floor of the tents he should have seen it. The fact was they were on a slope and the site had been chosen by a board of army medical men. He had not sufficient trained men because no one had anticipated such a rush of sick. He did not see Mr. Burdett-Coutts at the hospital; if he was there he ought to have had a pass. As to the buildings in the town being taken for hospital purposes they were pesthouses. It was far better to treat a man in the open air than in an insanitary room. There could be no doubt that the houses were insanitary and the bucket system as carried out in South Africa was simply abominable. He would not put cattle into some of the houses. They had a large staff of female nurses in the marquees, and the reason why they had not them in the bell tents was that they were not required for mild cases. He confessed that they were short of utensils. As for blankets he got plenty of them; he requisitioned 2000 on one day and got them at once.

Dr. CHURCH: We have had it suggested that the officers did not like to ask for what they wanted.

Lieutenant-Colonel BARROW: If I did not get what I wanted there was a row. I never asked for anything that I did not get. I asked for transport and they said it was impossible, but I got it all the same. I got my own transport. I think that a field hospital will never be complete until it has its own transport. I got my transport after a personal interview and explaining the difficulty.

Dr. CHURCH: You had a lot of trouble about the returns?

Lieutenant-Colonel BARROW: Well, I neglected most of the returns and the statistics also. I got many urgent telegrams from Cape Town asking "where are your returns?" I took no notice of the telegrams.

The CHAIRMAN: Were they unnecessary and cumbrous?

Lieutenant-Colonel BARROW: They were necessary, but there is great difficulty in furnishing them when working at high pressure.

Dr. CHURCH: Did you ever see 10 men in a bell tent?

Lieutenant-Colonel BARROW: Never. I went round frequently in the day and dodged round and looked into them. There might be 10 in a tent from a train arriving at three in the morning, but they would not be there long after daylight.

Dr. CHURCH: Are the men afraid to make complaints?

Lieutenant-Colonel BARROW: No, they are only too anxious to make them.

Captain DUNCAN STEWART of the Royal Canadian Foot Regiment stated in the course of examination that he had an attack of malarial fever at Pretoria, went into hospital there, and could not speak too highly of the medical men and the nurses.

Mr. STROMEYER LITTLE said that he went out to South Africa not in the public service but as a visitor. As a visitor he was very favourably impressed with the hospitals, but when he came to work in one he found things were a little different. In his opinion the great bulk of the private hospitals were superior to the military hospitals. He went to Bloemfontein in the beginning of May and worked in No. 9 Hospital, where he had charge of 10 marquees. The bell tents were overcrowded, but he could not say positively how many patients there were in them because the men moved out during the day. There undoubtedly was a want of bed-pans, and many patients probably lost their lives in consequence. The condensed milk was very poor. He thought there ought to have been fresh milk.

The CHAIRMAN: But Colonel Barrow, who was in charge, told us he would not have fresh milk because it was dangerous.

Mr. LITTLE: The condensed milk was certainly liable to contamination because you had got to mix it with water, and there were millions of flies about and this water was open to them. When he got down to Port Elizabeth he found responsible people who were ready to guarantee a thousand bottles of sterilised milk per day, and he wrote to No. 9 Hospital on the subject, but received no answer.

Captain TRYON gave evidence to the effect that he had been a patient in a hospital at Bloemfontein, travelled in a hospital train, and received treatment in a hospital at Wynberg, and was fairly well looked after in all these positions.

Lieutenant-Colonel COOPER of the Irish Guards, who had been engaged as a railway staff officer, spoke as to the difficulties experienced in the transport of the sick and wounded owing to the pressure of traffic for the fighting line.

Major A. P. BLENKINSOP, R.A.M.C., said he went out with No. 20 Field Hospital. His first duty was outside Bloemfontein, where the hospital was fully equipped, and where they had 106 cases of enteric fever and dysentery. The patients were well looked after and got their food. Finding some difficulty about the fresh milk he told the farmers that if they did not supply him he would commandeer their cows and send the owners to prison in Bloemfontein, and after that there was no more difficulty about fresh milk. For sick convoy purposes he suggested that there should be made up special boxes containing medical comforts, jellies, and the like, and with regard to field hospitals he thought that they should have their own transport.

Mr. A. K. BURN of the City of London Imperial Volunteers gave evidence as to his treatment for enteric fever in one of the field hospitals.

The Commission then adjourned.

The Secretary (Major TENNANT) intimated that the visit to South Africa will probably occupy two or three months, and that on its conclusion further evidence will be taken in London.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ALDERSON, WILFRED E., M.D., M.S. Durh., has been appointed Honorary Physician to the Newcastle-on-Tyne Dispensary.

ANDERSON, THOMAS MCCALL, M.D. Glasg., has been appointed Professor of Practice of Medicine in the University of Glasgow, vice Professor Sir W. T. Gairdner, retired.

ATKINSON, C. M., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of the Workhouse, East Ashford Union, vice C. S. Atkinson, deceased.

BEACHCROFT, F. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District and the Workhouse of the Petworth Union, vice R. J. McDermott, resigned.

BISSET, A., M.B., Ch.B. Aberd., has been appointed Resident Physician to the Royal Infirmary, Aberdeen.

BLAKISTON, F. C., L.R.C.P. Lond., M.R.C.S., has been appointed Junior Assistant Medical Officer for the Infirmary of the Wandsworth and Clapham Union, vice C. Powell.

BLYTH, M. W., has been appointed Public Analyst for the County Borough of Brighton, vice E. H. Moore, resigned.

BOYD, STANLEY, M.B. Lond., F.R.C.S., has been appointed Surgeon to the Hospital for Consumption, Brompton, vice R. J. Godlee, resigned.

COOKE, L., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Aspull Sanitary District of the Wigan Union.

COWIE, WILLIAM, M.B., C.M. Aberd., has been appointed Medical Officer for the Charlton Sanitary District of the Woolwich Union, vice J. Logie, deceased.

CROLL, W. F., M.B., Ch.B. Aberd., has been appointed Resident Physician to the Royal Infirmary, Aberdeen.

CROSSFIELD, A. K., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Dartmouth Sanitary District of the Totnes Union, vice R. W. Soper, deceased.

DAY, F. W. H. L., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health by the Hitchin Urban District Council.

ELLIS, R. SIDNEY, M.B., Ch.B. Edin., has been appointed Assistant Resident Medical Officer to the St. Mary's Children's Hospital, Plaistow, E.

GOURLAY, F. T., M.B., C.M. Edin., has been appointed Medical Officer for the Shiffnal and Stockton Sanitary Districts and the Workhouse of the Shiffnal Union, vice T. H. Keogh, resigned.

GRANT, LACHLAN, M.D. Edin., has been appointed Medical Officer to the Ballachulish State Quarries, vice Dr. Farquharson, resigned.

HANCOCK, JAMES TAYLOR, L.R.C.S., L.R.C.P. Edin., has been appointed Medical Officer and Public Vaccinator to the Carlton and Drax District of the Selby Union.

HARDY, F. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Superintendent of the Sheffield City Hospital, vice A. Anderson, resigned.

HARTLEY, J. D., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Blaidburn Sanitary District of the Clitheroe Union, vice J. Sinclair.

HOPKINS, JAMES J., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Nos. 1 and 2 Castlebar Dispensary Districts, and the Electoral Division of Bellavady, in the Union of Castlebar.

JOHNSON, H. S., M.R.C.P. Irel., L.F.P.S. Glasg., has been reappointed Medical Officer by the Ashburton Urban District Council.

POLLARD, W. R., M.R.C.P. Edin., L.R.C.S. Irel., has been appointed Medical Officer to the Cottage Homes by the Cottage Homes Committee, Blackburn.

PRITCHARD, R. J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Petworth Union, vice R. J. McDermott, resigned.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ASHANTI FIELD FORCE.—Experienced Dressers for six months in the Colony, with pay at the rate of £20 a month, and other money, &c., arrangements. Address to the Assistant Private Secretary, Colonial Office.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 yearly for cab-hire, with furnished room, fire, lights, and attendance.

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (WESTERN BRANCH AND COTTAGE HOSPITAL), 113, Queen's-road, Brighton.—House Surgeon. Salary £120 per annum, with board and residence.

CANCER PAVILION AND HOME, Manchester.—Surgical Officer.—Applications to Mr. E. W. Marshall, 38, Barton Arcade, Manchester.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the House.

CITY OF BOMBAY.—Executive Health Officer for five years, renewable conditionally. Monthly salary arranged.—Apply to the Municipal Commissioner for City of Bombay, care of Mr. John Lithiby, Local Government Board, Whitehall.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—District Surgeons to the Hospital for the Eastern Division of Bethnal Green and for South Tottenham.

COUNTY ASYLUM, Dorchester.—Second Assistant Medical Officer, unmarried. Salary £140, rising to £160 the second year.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Salary commencing at £125 per annum with the usual allowances.

CUMBERLAND INFIRMARY, Carlisle.—House Surgeon for one year. Salary £70 per annum, with board, lodging, and washing. Also Assistant House Surgeon for seven months from Oct. 1st. Salary at the rate of £40 per annum, with board, lodging, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon for one year, unmarried. Salary £70, with board, lodging, and washing.

EYE, EAR, AND THROAT HOSPITAL FOR SHROPSHIRE AND WALES, Shrewsbury.—Surgeon. Honorarium of £150 per annum will be given for three years.

GENERAL INFIRMARY, LEEDS.—House Surgeon and House Physician. The former for 12 months and the latter for six months. Board, lodging, and washing provided.

GROVE HALL ASYLUM, Bow, London, E.—Junior Assistant Medical Officer. Salary £120 per annum, with board, furnished apartments, attendance, and washing.

ISLAND OF GUERNSEY.—Medical Officer of Health. Salary £200 (British currency), with local travelling expenses. Applications to be addressed, "Board of Health," States Office, Guernsey.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

MANCHESTER EAR HOSPITAL.—Clinical Clerkship for a Senior Student for six months. Honorarium 10 guineas.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80, with residence, board, and washing.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch.—Resident Medical Officer for 12 months. Salary £120 per annum, with board, residence, and washing. Apply to the Secretary, City Office, 27, Clement's-lane, Lombard-street, E.C.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road.—Assistant Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

NOTTINGHAM CITY ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OWENS COLLEGE, Manchester.—Additional Demonstrator in Anatomy, for the Winter Session.

PADDINGTON GREEN CHILDREN'S HOSPITAL, London.—House Surgeon. Salary at the rate of 50 guineas a year, with board and residence.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

ROYAL HANTS COUNTY HOSPITAL, Winchester.—House Physician, unmarried. Salary £65 per annum, rising to £75, with board, residence, &c.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with board, lodging, and washing.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—House Surgeon and Registrar for six months, unmarried. Salary at the rate of £100 per annum, with residence and partial board.

ROYAL UNITED HOSPITAL, Bath.—House Surgeon, for one year. Salary £100, with board, lodging, and washing.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer, at the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, West Bar, Sheffield.

SURREY DISPENSARY, Great Dover-street, Southwark, S.E.—Resident Medical Officer. Apply to the Secretary, 53, Borough High-street.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Witham, in the county of Essex, at Lewisham in the county of London, and at Tyldesley, in the county of Lancaster.

TOTTENHAM HOSPITAL, N.—House Surgeon for six or 12 months. Honorarium at the rate of £20 per annum, with board, residence, and laundry.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea.—Resident Medical Officer for six months. Honorarium £25, with board and lodging in the hospital.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

# Births, Marriages, and Deaths.

## BIRTHS.

COLDSTREAM.—On August 5th, at Belford, Northumberland, the wife of George Probyn Coldstream, M.B., C.M., of a daughter.

DEMPSTER.—On August 3rd, at Winsley, South Croydon, the wife of W. T. Dempster, M.R.C.S., L.R.C.P. Lond., of a son.

FINNY.—On August 1st, at Tamesa, Kingston-hill, Rosa, the wife of William Evelyn St. Lawrence Finny, M.B. Irel., L.R.C.P. Edin., J.P., ex-Mayor of Kingston-upon-Thames, of a son.

LAWS.—On August 5th, at Car Colston, Nottingham, the wife of W. G. Laws, F.R.C.S., of a son.

MAYBURY.—On August 4th, at Hampshire-terrace, Southsea, the wife of Lysander Maybury, M.D., of a son.

QUILLER.—On August 5th, at S. Paul's-close, Clapham, S.W., the wife of Charles Turner Quiller, M.R.C.S., of a son.

SHARP.—On August 2nd, at Bagdale, Whitby, the wife of Arthur J. Sharp, M.D., F.R.C.S., of a daughter.

STABLES.—On August 2nd, at Ashby-de-la-Zouch, the wife of W. W. G. Stables, M.R.C.S., &c., of a son.

## MARRIAGES.

BERRY—BRIGHOUSE.—On August 7th, 1900, at the parish church, Ormskirk, by the Rev. John Williams, M.A., curate of All Saints', Southport, assisted by the Rev. J. E. Woodrow, vicar of Ormskirk, and the Rev. J. F. Hogg-Goggin, rector of Rufford, Richard James Arthur Berry, M.D., F.R.S., F.R.C.S. Edin., to Beatrice Catherine, eldest daughter of Samuel Brighouse, Esq., solicitor, and Coroner for South-west Lancashire.

EDWARDS—JACKSON.—On July 31st, at the parish church, Reigate, Francis Henry Edwards, M.D., M.R.C.P., eldest son of Francis C. Edwards, of Blackheath, to Eleanor Margaret (Daisy), younger daughter of Geo. Jackson, of Reigate.

HUNT—EDGELL.—On Aug. 1st, at the Church of St. Nicholas, Bromham, Wiltshire, William Alfred Hunt, M.R.C.S., L.R.C.P., only son of William Hunt, Pen Villa, Yeovil, to Helen Julia, youngest daughter of the Rev. E. B. Edgell, J.P., rector of Bromham.

REISSMANN—BIRKS.—On July 31st, at Knutsford, Glenelg, South Australia, Charles Reissmann, M.A., M.B., B.Sc., of Wahroonga, New South Wales, to Edith Vause, third daughter of Charles Birks, of Glenelg, S.A.

## DEATHS.

SPITTA.—On Aug. 2nd, at Clapham Common, S.W., Robert John Spitta, M.D. Lond., in his 81st year.

STUART.—On Aug. 4th, at Gloucester-terrace, W., William Johnston Stuart, Surgeon-Major (retired) H.M. Bombay Army, aged 81.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## WHAT IS "PROPER LODGING" UNDER THE PUBLIC HEALTH ACT?"

*To the Editors of* THE LANCET.

SIRS,—I am advising my council to provide isolation accommodation for a large mining district with a population of about 14,000. The miners principally live in three or four-roomed cottages (in some cases five rooms) in rows or terraces. Sec. 124 P. H. Act, 1875, says: "Any person suffering from any dangerous infectious disorder and is without proper lodging or accommodation" may be removed to such hospital. What is meant by "without proper lodging and accommodation"? If the child or a person living in the house of one of these colliers is taken ill with infectious disease (diphtheria, enteric fever, &c.), is the child without proper accommodation, and could we have the power to remove it? In the case of a "lodger" in one of these houses I presume there would be no difficulty. I should be glad if you would kindly deal with the question in one of your issues. I feel that unless we have more power than the Public Health Act gives us the hospital would not be in use half the time.

I am, Sirs, yours faithfully,

August 4th, 1900. MEDICAL OFFICER OF HEALTH.

* * The question shall have our attention.—ED. L.

## THE DUNMOW FLITCH.

AT the annual Dunmow Flitch celebration which took place in the presence of a crowd of holiday-makers on August 6th, the first claimants were Mr. and Mrs. Evelyn John Evatt of Newcastle-on-Tyne. Mr. Evatt is said by the newspapers to be a medical student. When the matrimonial affairs of a medical student attract the attention of the press it is so generally because of their painful nature that we are bound to congratulate Mr. Evatt upon a publicity that has its origin in his conjugal happiness.

## THE FIRST GENERAL MEETING OF THE BRITISH MEDICAL ASSOCIATION AT IPSWICH.

*To the Editors of* THE LANCET.

SIRS,—In your doubtless very hurried report of the first general meeting of the British Medical Association in Ipswich you insert the lines: "that THE LANCET *plébiscite* showed plainly that the feeling of the profession was against the Midwives Bill, and Mr. D. O'Sullivan." This is on p. 357, left-hand column, lines 29-30. Please note comma after Midwives Bill. There is no sense in the paragraph. And why my name was introduced I cannot understand, as any remarks I made were agreed with by the great majority of the meeting. The report also at the top of the page (same column) shows a first line which is foreign to Dr. Saundby's remarks and is evidently interpolated by carelessness. I feel that I am placed in an invidious position by the introduction of my name in the manner indicated.

I am, Sirs yours faithfully,

Southport, August 7th, 1900. DANIEL A. O'SULLIVAN.

*** We fail to see anything invidious in our report. If Mr. O'Sullivan will read the report carefully he will see that we said that he was one of the principal speakers during a certain portion of the general meeting, and it is a fact that he was so. Leaving out parenthetical clauses, the paragraph reads: "the principal speakers being Dr. Brassey Brierley, Dr. J. Haddon, Dr. A. Cox, and Mr. D. O'Sullivan."—ED. L.

## "DRESSERS" FOR KUMASI.

*To the Editors of* THE LANCET.

SIRS,—I had occasion some two or three weeks ago to call attention to the parsimony of the Colonial Office in its attempt to obtain medical officers for an expedition to Kumasi. Whether it failed to obtain an adequate supply of qualified men for the totally inadequate remuneration offered I am not aware; but this week in your columns and in the columns of a contemporary appears an advertisement asking for "dressers." These "dressers" are offered pay at the rate of £20 a month *plus* an allowance of 5*s.* per diem, with privileges as regards passage, rations, and gratuity similar to those of the previously-advertised-for medical officer. This offer to the unqualified "dresser" appears to be as liberal as the offer to the qualified man was illiberal; the difference in the value of the services of the qualified and registered (£30 a month and no allowance) and the unqualified and unregistered (£20 a month *plus* 5*s.* a day allowance) candidate being, in the estimate of the Colonial Office is to be accepted, only some £2 10*s.* or £2 15*s.* per mensem. It was rumoured that some senior students and dressers who volunteered for service in South Africa were told off to scrub floors and clean "quarters." I do not think that these "dressers" need fear that their services will be so little appreciated, they will probably find themselves in positions of considerable responsibility. The circumstances of the case rather favour the suspicion that the previous request for medical officers at the small salary offered having elicited no very fervid response the authorities contemplate employing unqualified men under the guise of "dressers." The remuneration offered to these "dresser" candidates is ample though not extravagant, and while some "chronics" may be tempted to respond I doubt if any genuine "dresser" or "clerk" with any prospects will care to delay his curriculum and cast his chances into such a fatal lottery as a West Coast expedition.

I am, Sirs, yours faithfully,

Aug. 6th, 1900. CANTAB.

## AN IMPROVED CYCLE AND MOTOR-CAR LAMP.

OUR attention has been drawn to an improved cycle and motor-car lamp which, if generally in use, would do much to prevent accidents and reduce the strain upon the nerves which accrues from riding at night. Medical men who use the cycle for night calls would find increased comfort from the use of the lamp, for there is practically no danger of being run down from behind, while the rider is able to see his pedals for mounting. The improvement is extremely simple and consists in affixing at each side of the lamp a glass prism placed in an oblique direction from above downward and forward. One of the faces of the prism is almost at right angles to the side of the lamp and throws a beam of light backward and downward. Mr. John Cassels of 76, Hall-street, Stockport, is the inventor and the lamps are sold in two qualities, at the prices of 6*s.* and 15*s.*, the high-priced lamp being an excellent production of the lamp-maker's art.

## A BUST OF SIR RICHARD OWEN.

*To the Editors of* THE LANCET.

SIRS,—Can you kindly advise me where a bust of Sir Richard Owen would be likely to be purchased? The original was executed by the late Mr. Hodges Baily, R.A., who executed Nelson's monument on the column in Trafalgar-square, I believe, and the bust in plaster is from the original, and is the work of Mr. Baily also. It is in the possession of his granddaughters, ladies in very poor circumstances. They would accept £10 10*s.* for it—at which price, I believe, a similar bust has been previously sold. Being in Ipswich for the annual meeting of the British Medical Association has enabled me to inspect the bust, which is life-size and in good condition. It is on their behalf that I venture to ask your kind assistance in disposing of the bust, which might be much valued by a public institution.—I am, Sirs, yours faithfully,

EDGAR DUKE, M.D. Durh.

11, Wilbury-road, Hove, August 3rd, 1900.

## AUTO-INTOXICATION IN PREGNANCY.

*To the Editors of* THE LANCET.

SIRS,—I should be much obliged if any of your readers could give me any references to literature dealing with this subject. I know Bouchard's book and also some of the more recent papers on eclampsia. I wish particularly to find an account more full than that given in ordinary obstetric text-books of the increases in tissue metabolism due to the incidence and presence of pregnancy. Trusting to receive some little assistance in the matter.—I am, Sirs, yours faithfully,

July 28th, 1900. M.A., M.B.

## THE ABSORPTION OF IRON.

*To the Editors of* THE LANCET.

SIRS,—Several interesting experiments have, I understand, recently been made illustrative of the fact that iron is absorbed by the blood-vessels of the duodenal villi. Quincke has fed mice with cheese containing iron and has traced its course as far as the duodenum, where he found it was absorbed. I shall esteem it a favour if you can inform me of any other experiment bearing on the subject. Do you hold that these experiments prove that iron is actually absorbed in the duodenum? Again, are the organic salts of iron only, or are the inorganic salts equally well absorbed? The inorganic salts, such as ferrous carbonate (Blaud), have undoubtedly given good results in the treatment of anæmia; is there any evidence that quicker improvement has taken place when the organic salts, such as the peptonated iron and manganese, have been exhibited?

I am, Sirs, yours faithfully,

HERBERT HART, Medical Superintendent.

International Headquarters of the Salvation Army,
Queen Victoria-street, July 24th, 1900.

*** We are not aware that the theory that iron is actually absorbed in the duodenum has been generally accepted. Reduced iron has been shown (Quevenne) to be most readily absorbed. We publish the letter so that replies may be elicited from those who have made recent observations on the absorption of iron into the general circulation.—ED. L.

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*M.R.C.S., L.R.C.P.*—Dr. William Munk's "Roll of the Royal College of Physicians"—the preliminary passages and the careers of Chambre and Linacre; and Mr. D'Arcy Power's edition of Mr. Flint South's "Memorials of the Craft of Surgery in England" will give the information required. The librarians of the two Colleges will, we are sure, give our correspondent any special information that he may require.

*Legal.*—The question is so legal that it must be referred to a solicitor. We do not understand if the house in question belongs to our correspondent who desires to grant a lease, or if it is his leasehold

interests which he desires to assign. But, anyhow, he should take proper professional advice.

*Mr. H. C. MacQuaie* will find the information he desires in the introductory matter of the Medical Directory.

*Subscriber.*—We cannot find the name of the distributer of the cards in the Medical Directory.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, August 9th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation Vacuo. | Maximum Temp. Shade. | Min. Temp | Wet Bulb | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 3 | 29·50 | S.W. | 0·36 | 108 | 69 | 60 | 62 | 61 | Raining |
| " 4 | 29·65 | N.W. | ... | 111 | 69 | 54 | 58 | 55 | Cloudy |
| " 5 | 29·70 | S.W. | 0·10 | 79 | 69 | 52 | 59 | 57 | Cloudy |
| " 6 | 29·68 | S.W. | 0·20 | 72 | 69 | 53 | 58 | 56 | Overcast |
| " 7 | 29·52 | W. | 0·16 | 105 | 68 | 55 | 60 | 57 | Cloudy |
| " 8 | 29·83 | N. | ... | 103 | 65 | 54 | 57 | 56 | Overcast |
| " 9 | 29·87 | S.W. | ... | 77 | 62 | 56 | 60 | 57 | Overcast |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (13th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (14th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (15th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

**THURSDAY (16th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

**SATURDAY (18th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## EDITORIAL NOTICES.

**It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.**

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied, Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

**During the week marked copies of the following newspapers have been received:** *Stockport Advertiser, Gloucester Journal, East Anglian Daily Times, Scotsman, Pioneer Mail, Times of India Citizen, Yorkshire Post, Architect, Builder, Cambridge Daily News, Cardigan Observer, Prescot Weekly Times, Selby Weekly Herald, West Herts Post, Yarmouth Mercury, Liverpool Daily Post, Leeds Mercury, Birmingham Mail, Glasgow Herald, Bristol Mercury, North British Daily Mail, Manchester Guardian, Sanitary Record, Temperance Record, Melbourne Age, Saturday Review, Leicester Daily Post, Bradford Observer, Agnostic Journal, Sheffield Daily Independent, Bristol Times, Nottingham Daily Express, Public Health, King's County Chronicle, Norfolk Standard, Malton Gazette, Nottinghamshire Express, City Press, Local Government Chronicle, Reading Mercury, Hertfordshire Mercury, Mining Journal, Clapham Observer, Local Government Journal, Surrey Advertiser, Public Health, Engineer, Ayrshire Post, Saltburn Times, Court Circular, Chemist and Druggist, Buckingham Express, Suffolk Times and Mercury, &c., &c.*

## Communications, Letters, &c., have been received from—

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## Letters, each with enclosure, are also acknowledged from—

A.—Mr. R. R. Anderson, Fern Hill; Mr. W. Armstrong, Buxton; Messrs. Allen and Hanburys, Lond.; A. L.; Miss A.; Dr. J. F. Anderson, Lond.; A. D. D.; Anderson's College Medical School, Glasgow, Secretary of.

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# An Address
ON
# PROFESSIONAL ORGANISATIONS.

*Delivered before the South-West London Medical Society on July 18th, 1900,*

BY W. G. DICKINSON, M.D. DURH., M.R.C.S. ENG, D.P.H.

GENTLEMEN,—Without presuming to criticise my predecessors or to dictate to those who will succeed me in the chair I may be allowed to express my personal opinion that it is the duty of any man who is honoured by being elected as President of this society to endeavour, as far as in him lies, to acknowledge the honour which has been done him by delivering an address either on his inauguration or on his retirement. This opinion was shared by our first President, Mr. T. S. Howell, who gave us an excellent discourse on "Our Social Position, Past and Present," and by Dr. Gilbert Richardson, who read a paper on the hospitals question. The delivery of a presidential address is also, I believe, the universal custom in all the established medical societies. A desire, therefore, to promote the interests and to extend the usefulness of this society must be my excuse for the imperfect remarks which I have to offer you to-day.

In seeking a subject for my address I have naturally found some difficulty in choosing one likely to be of interest. I have selected that of Organisation in the Profession as being the topic which (next to the now defunct Midwives Bill) has recently caused most stir in the world of medical politics. I make no apology for directing your attention to a medico-political subject, for I hold with Lord Bacon that "Every man is a debtor to his profession," and that one great means of discharging that debt is to do something towards arousing the profession from the apathy and disregard of its own interests by which it is generally characterised. What is the justification for the significant silence or the covert sneer with which any allusions to professional interests are so often met by the average well-to-do practitioner? Is he so engrossed by his own personal interests that he cannot find time for the consideration of those matters which may be injuriously affecting the profession generally? I should be sorry to think so ill of him. He usually excuses his neglect by indulging in personalities: "A. B. is a bad lot"; "C. D. is a windbag"; "Who would ever pay attention to E. F.?" Well, gentlemen, if this is so, is it not the obvious duty of our well-to-do practitioner to come forward and show A. B., C. D., and E. F. a more excellent way? In a recent article on the British Medical Association it was stated that "no member of the profession has a right to say that he takes no interest in what are called 'medical politics,' by which we understand the maintenance of the honour and the interests of the medical profession, and the consolidation and extension of its influence on public opinion and on the course of legislation in matters touching the public health, and the scientific and social interests of the profession itself. The real source of many of the disadvantages under which the profession in this country still labours is traceable to the apathy of many of its members, who cannot be roused to take a share in the determination of matters which lie a little outside the absorbing calls of actual practice or of clinical work." This has been said so often that it has become a truism, and it is a painful fact that this should be so. Is everything for the best in this best of all possible professions? Do we as a body need no remedies? Do all things go well with us? Ask the treasurers of the various professional benevolent societies and hear their reply.

After this prelude, gentlemen, I will proceed to my subject. The organisations which I propose to discuss are not those bodies which are imposed upon us by law, such as the General Medical Council, the Universities, and the Corporations. Though there is much to be said on each and all of these, I wish to consider only those voluntary associations which have from time to time been evolved by our profession for various purposes. These may be divided into several classes, such as (*a*) the benevolent; (*b*) the scientific; (*c*) those which deal with individual medical protection; and (*d*) the ethical and political. Each of these has a social side—at least to the extent of holding an annual dinner. Thus, whatever their original and main object, they all subserve the important secondary result of bringing their members together and promoting professional amenities. Many organisations, such as our own society, combine two or more of the above objects.

The benevolent bodies are four in number—the British Medical Benevolent Fund, the Royal Medical Benevolent College at Epsom, the Society for the Relief of Widows and Orphans of Medical Men, and THE LANCET Relief Fund for Members of the Medical Profession and their Widows and Orphans when in distress. The third body mentioned offers what is practically an insurance on the cheapest possible terms. A payment of two guineas per annum for a limited number of years will secure to a member's widow an annuity of from £30 to £50 and one of £10 for each child. It has always seemed to me most extraordinary that so few young professional men take advantage of this society. There are also four provincial benevolent bodies. The purely scientific organisations are too numerous to mention. Spread as they are over the whole empire, they rightly attract the chief attention of our profession. Even these, however, are mainly supported by comparatively few, and it will be safe to say that the great majority of medical men either belong to no society at all or if they do never attend a meeting. The purely scientific medical bodies in London alone number 40, besides 12 local societies such as our own, many of which deal with ethical questions. The organisations for protective purposes are of comparatively recent formation. The first was the Medical Defence Union, founded in the eighties, which for some years was indifferently supported but is now in a flourishing condition. This was followed in 1892 by the London and Counties Medical Protection Society which has steadily improved its position and membership and is now on a thoroughly stable foundation. These two bodies ought, in the opinion of the majority of their members, to unite and form one strong organisation, but owing to personal differences between their respective councils negotiations have hitherto proved unsuccessful. The responsibility for this at present rests with the Medical Defence Union, which has refused the offer of the London and Counties Medical Protection Society to submit the whole question to arbitration. Each of these unions undertakes to defend its members against actions for malpraxis, attempts at blackmailing, slanderous statements, &c., and in this they are almost uniformly successful. Their subscription is but 10*s.* per annum, and any member of the profession who does not belong to one or other of them has only himself to blame when his time of trouble comes. Another organisation of great usefulness to the profession of a somewhat similar nature is the Medical Sickness Society, which insures its members against the pecuniary loss involved by sickness and accident. 17 bodies exist in London alone for the promotion of what may be termed class interests in the profession, such as the Poor-law Medical Officers' Association of England and Wales, the Metropolitan Police Surgeons' Association, the associations of graduates of the various universities, &c. There are also, I am glad to say, an increasing number of societies both in London and the provinces for providing medical attendance on the poor under professional auspices without any lay control. One of the pioneer societies of this kind was founded in our district in 1881 under the name of the Wandsworth Medical Aid Society. The foregoing all deal mainly with the support or defence of the interests of the medical man as an individual.

We now come to those bodies which exist nominally for the purpose of promoting the interests of the profession as a whole. How far they have succeeded in fulfilling their function I propose to discuss. It is these which ought to take the chief part in the organisation of the profession.

By far the greatest and most important is the British Medical Association, which has 18,000 members and branches all over the country and in the colonies, and which publishes a weekly *Journal*. The object of the Association is stated in the Memorandum to be "the promotion of the medical and allied sciences and the maintenance of the honour and interests of the medical profession." It will be seen that the Association has a dual function. As regards the first object it has certainly done much. It holds an annual meeting at which more or less interesting scientific

papers are read and discussed, its branches meet periodically for the same purpose, it makes grants for scientific research, and its *Journal* affords the chief source of recent scientific information to thousands of medical men. As to its second, and no less important object, "the maintenance of the honour and interests of the medical profession," I do not like to say that it has done nothing, but I do say that it is extremely difficult to point out anything of consequence which it *has* done. At the best its "maintenance" of these interests has been characterised by a dignified passivity. Its *Journal* from time to time draws attention to the various reforms which have been effected since the Association came into existence, such as the enactment of the Medical Acts, the formation of conjoint boards, the partial suppression of unqualified practice, of covering, and so forth, but there is no evidence whatever to show that the British Medical Association either instituted or actively promoted any of these reforms. The reason of this is not far to seek. The Association is nominally a representative body, but its members take no interest in their representation. More than a third of them do not belong to a branch and are therefore nothing but annual subscribers to the *Journal*, and probably more than half of those who do belong to branches never attend a meeting. The Council of the Association is theoretically elected by the branches, but owing to the general apathy shown by the latter the representatives are practically coöpted year by year. The Council is further swamped by a number of vice-presidents—eminent individuals who have "passed the chair"—who are naturally satisfied with things as they are and opposed to change. The consequence of all this is that the majority on the Council is as autocratic as that of the Royal College of Surgeons of England or any other non-representative body, and instead of endeavouring to promote the honour and interests of the profession they throw cold water on any proposals having this object.

A development has recently occurred which is likely to have an important bearing on the future of the British Medical Association. The Council has always ignored any resolutions passed at general meetings which did not happen to accord with its own views. Many members have all along contended that as the Association is registered under the Companies Acts this course was illegal and that these resolutions were binding. Counsel's opinion was lately taken, and the Council has called a special general meeting for this afternoon to consider a new set of regulations for the conduct of the Association; the effect of these will be to deprive the resolutions passed at a general meeting of the validity which it is now tacitly admitted that they possess. If these regulations are carried the Council will be absolutely uncontrolled in its disposal of the resources and its direction of the policy of the Association. If they are not carried others should be substituted rendering it obligatory on the Council to refer the wishes of the members expressed in general meeting to a plebiscite of the whole body.[1] Were but a small fraction of the large income of the Association set aside for the purpose of "maintaining the honour and interests of the profession" a fund would be formed which if wisely directed would prove of incalculable benefit.

Owing to the failure of the British Medical Association to carry out this important part of its functions other organisations have arisen, having the sole object of dealing with the defence and protection of the interests of the profession at large. Of these the best known is the Incorporated Medical Practitioners' Association, which was founded in 1891, has a large membership, and now publishes a weekly *Journal* of its own. Then there are the Corporate and Medical Reform Association, recently established, which has been very active in opposing the Midwives Bill; the Hospital Reform Association, which deals with the abuses of the out-patient departments and of special hospitals; the Society of Members of the Royal College of Surgeons of England which hopes ultimately to obtain a reform of that corporation; the East Suburban Medical Protection and Medico-Ethical Society; and, latest of all, the Medical Parliamentary League started by the *Medical Times*.

In the provinces many towns have medico-ethical or protection societies. Those which have attracted most attention are the Manchester Medical Guild; the Manchester Medico-Ethical Association, founded as long ago as 1847; the County of Durham Medical Union, which has been active in supporting the colliery surgeons against the aggressions of the miners; the Coventry Public Medical Service, which is fighting a huge Dispensary, without a wage limit, embracing the greater part of the population; and the Portsmouth Medical Union. It has been for some time felt by many of those who are conscious of the desirability of effecting some practical reforms and of protecting the interests of the profession that something should be done towards bringing these various bodies into coöperation, and in May last a conference on medical organisation was held in Manchester, to which the council of this society appointed me a delegate. Unfortunately, however, I was unable to attend. Many hard things have been said about this conference, and of course criticism of any new departure is easy. As THE LANCET said at the time, the conference showed at least one thing, viz., how much the profession has need of organisation. The object of the conference, however, was an excellent one, and no doubt experience has been gained which will be useful on a future occasion. It is to be hoped that there will then be fewer papers read followed by discussions of grievances which are not thereby helped towards a remedy, and more practical work undertaken of the character indicated by the title of the conference—"Medical Organisation." One resolution appears to me to be worthy of quotation, and had I been present I should certainly have voted for it. It was as follows:—

> That this conference is of opinion that the pressing need of organisation is concentration; that the multiplication of associations other than those purely local is to be deprecated; that the size, position, and wealth of the British Medical Association make it the most suitable national medical organisation; and that the efforts of all medico-ethical associations and of the conference should be directed to the conversion of the British Medical Association into an energetic body really representative of the profession.

This seems by far the most hopeful line to take, and I should like to see every local society such as this affiliated to a reformed British Medical Association.

A paper of this kind would not be complete without some reference to the International Congress of Deontology, or medical ethics, which is to be held in Paris at the end of this month. At this Congress representatives from 27 different countries will be present, and no doubt much information as to the way in which our profession upholds its interests in other lands than our own will be gained. The price of a delegate's ticket is only 12*s*., and THE LANCET suggests that societies such as ours should be formally represented to the extent of appointing a delegate even if he should prove unable to attend.

Now, gentlemen, in conclusion, let me try to answer the question which some of you have probably been asking all the time—"What has professional organisation to do with us? We have done very well without it for a number of years, why should we trouble ourselves concerning it now?" I will reply to this question *more Scottico* by asking another, "Are we debtors to our profession or are we not?" If we are, how ought we to discharge that debt? Do we consider that the contribution of an annual guinea to the Medical Benevolent Fund or to Epsom College is a sufficient liquidation? I think that our profession has further claims upon us. It has made, and is making, great strides in scientific and intellectual advancement; we ought to see to it that in economical and ethical progress it does not lag behind. We owe this not only to our profession, but to the public which we serve. As Mr. Bryant told us long ago, our interests and those of the public are identical, and it stands to reason that the latter will be better served by a profession which is prosperous, contented, and politically free than by one a large part of which is ground down to a mere living wage and has to earn its bread in a manner which has been described as "white slavery." Men who are the fortunate possessors of good middle-class or upper-class practices do not feel the necessity for professional organisation. They may say, "Let the galled jade wince, *our* withers are unwrung." It would be worthier if they remembered the needs, and more actively supported the efforts, of a large section of their fellow practitioners, whose sole prospect of improving their lot lies in the application of the principles of coöperation and organisation.

A statement of the objects for the attainment of which the profession should organise itself in a political sense would require a separate paper. My present purpose will have been served if I have induced any who have not hitherto done so to consider professional organisation on its merits.

[1] As is now generally known, the proposed regulations were rejected by a large majority, and at the annual meeting at Ipswich a committee was appointed, half the members of which were nominated by the Council and half by the meeting, "to consider and report upon the best means of re-organising the constitution of the British Medical Association" (THE LANCET, August 4th, p. 361).

# REPORT ON THE PHYSIOLOGICAL AND THERAPEUTIC ACTION OF DIGITALIS AND ITS ACTIVE PRINCIPLES.[1]

BY SIR T. LAUDER BRUNTON, M.D. EDIN., F.R.S., &c.,
LECTURER ON PHARMACOLOGY AND THERAPEUTICS AND PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL, ETC.

IN cases of heart disease digitalis is one of the most widely used remedies and it is important that we should thoroughly understand its mode of action. In the admirable treatise of Homolle and Quevenne the older literature in regard to digitalis is fully given, and both its physiological action and chemical composition are fully described as known at the date of publication. Since that time much work has been done which shows that digitalis acts on the heart, on the blood-vessels, and on the urinary secretion. The action of the drug upon frogs and mammals has been investigated. Some of the discrepancies in the opinions of different authors have, I think, arisen from considering its action upon frogs and mammals to be exactly alike. There is, no doubt, a strong general likeness between the action of the drug upon those two classes of animals, but though similar it is not identical. The effect of digitalis on the heart of the frog is to render its beats slower, its contractions more complete, and these results are obtained whether the heart be completely isolated or simply exposed and allowed to remain in the body of the animal. Not only do the beats become slower, but they become at first fuller, the heart expanding more in diastole and contracting more fully in systole. Gradually the diastolic dilatation becomes less and less until the heart stands still in systole. The stoppage of the cardiac beats is not due to paralysis, but simply to the excessive and permanent contraction of the ventricle. If it be artificially distended by allowing serum to flow in under pressure it will again begin to contract. The action of digitalis on the heart of the frog is chiefly due to its effect upon the cardiac muscle. In mammals digitalis also causes the cardiac pulsations to become slower and more powerful, but in the mammal the slowing of the heart's action is not due only to the effect of the drug upon the cardiac muscles as in the case of a frog, but is due in very great measure to stimulation of the inhibitory centre in the medulla oblongata. This stimulation may be so great that instead of the heart stopping in complete systole as in the frog it may stop in complete diastole in the dog. The slowing of the heart's action is partly due to the direct effect of the digitalis on the inhibitory centre, but it is also due to the indirect action of the drug through the rise of blood-pressure which it produces and which it is well known acts as a stimulus to the inhibitory centre. It may occur when the vagi have been divided previously to the administration of the drug, but that the slowing of the heart is in great measure due to excitation of the inhibitory centres in the medulla oblongata is shown by the fact that usually when the vagi are divided after digitalis has slowed the heart the pulsations become much quicker. That this excitation of the medulla is partly due to the rise of blood-pressure produced by digitalis is shown by the fact that when the pressure is lowered by nitrite of amyl the slowness of the heart disappears to a great extent. At the same time the inhibitory centre must be directly stimulated by the action of the drug upon it, because in some cases the heart may be greatly slowed while the blood-pressure is normal or below normal. The slowness of the heart, however, is also due to the peripheral action of digitalis upon the mechanism of the heart itself, for even in mammals the heart has been observed to be slowed by digitalis after division of the vagi, and this slowness disappears after the administration of atropine which paralyses the inhibitory mechanism. The slowness of the heart produced by small doses disappears and is succeeded by considerable acceleration when the dose is increased. This acceleration has been attributed partly to paralysis of the inhibitory power of the vagus, partly to stimulation of the accelerating nerves of the heart and partly to the increased excitability of the cardiac muscle itself. In all probability each of these factors takes part in producing the result.

There is a general consensus of opinion among pharmacologists regarding the power of digitalis to increase the strength of the cardiac contractions; but this is not the case in regard to its action on the blood-vessels, for while some maintain that its action in contracting the blood-vessels is as marked and is an important factor in the action of digitalis, others maintain that any contraction of the vessels which it produces, if any such contraction exist at all, is slight, transient, and unimportant. My own view is that contraction of the vessels produced by digitalis in mammals is very well marked, and I think it depends, just as in the case of the heart, partly upon a peripheral and partly upon a central action of the drug. I believe that digitalis has a local action on the muscular walls of the arterioles causing them to contract, and I think also it stimulates the vaso-motor centre in the medulla oblongata. By its combined action of contracting the arterioles and of increasing the power of the heart it raises blood-pressure. There can be little doubt that digitalis has the power of raising blood-pressure in the aorta by the increased action of the heart which it produces and apart from any effect upon the vessels, but in mammals we find certain phenomena connected with the rise in blood-pressure which can hardly be explained by alteration in the action of the heart alone. Thus, when the heart is stopped by irritation of the vagus the blood-pressure, as is well known, falls rapidly in a normal animal (Fig. 1), but it falls much more slowly after the administration of digitalis—an effect which I think can only be explained by contraction of the arterioles causing retention of blood in the aorta and its branches (Fig. 2). I have discussed this more fully in another place.[2] That digitalis can produce peripheral contraction of the arterioles is shown by the results of perfusion experiments in which addition of the drug to the saline solution of blood passed through an excised organ has greatly slowed the rate of flow. Whether this action is exerted entirely upon the muscular fibres of the muscles or upon local nervous mechanisms is at present uncertain. That it stimulates the vaso-motor centre in the medulla is shown by the fact that although it may sometimes raise blood-pressure after section of the cord yet it has not this effect so constantly or to so great an extent as when the cord is intact. Digitalis causes an increase to a certain extent of blood-pressure in the pulmonary circulation, though not nearly to the same extent as in the general circulation.

The diuresis which digitalis produces is probably due to increased pressure within the glomeruli of the kidneys. Digitalis causes contraction of the vessels of the kidney as well as other parts of the body, as is shown by observations of Bradford and Phillips with Roy's oncometer. At one stage of the action of digitalis, when the blood-pressure is very much raised, the secretion of urine may be completely arrested as if the renal artery were tied. As the pressure begins to fall the secretion of urine becomes greatly increased, but the urine generally shows a trace of albumin exactly in the same way as if the renal artery were first tied and then the ligature removed. If the pressure in the vessels is naturally high and the secretion of urine is abundant one could hardly expect that it would be much increased by the action of digitalis, but if the blood-pressure is low as in people with lax arteries or where the arterial system is comparatively empty in consequence of mitral regurgitation the diuretic effect of digitalis is naturally more pronounced. It acts as a local irritant when applied to the eye and causes at the same time a good deal of pain. I do not know of any experiments upon the excretion of digitalis by the stomach, but if taken for some time it certainly causes a good deal of gastric irritation with violent vomiting and loss of appetite, or even vomiting may sometimes precede any marked effect of digitalis upon the pulse when it is given in cases of heart disease.

The chemical composition of digitalis is complex and a good deal of the discordant results obtained by different observers are not only due to differences in the animals upon which they have experimented, but to differences in the physiological action of the preparations which they have employed even when these preparations have borne the

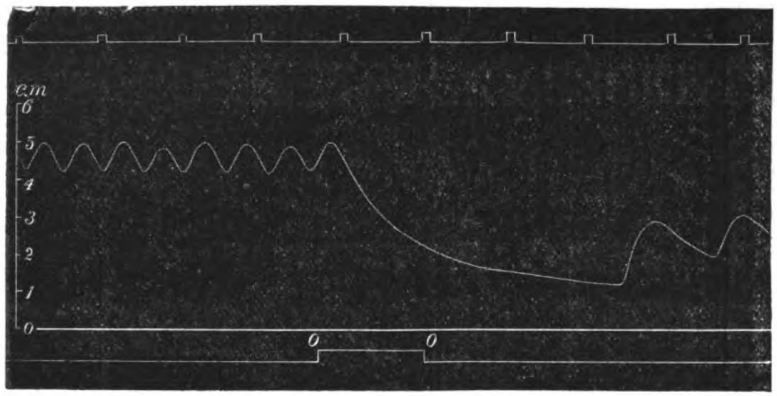
[1] Presented to the Section of Therapeutics, Pharmacology, and Materia Medica of the Thirteenth International Congress of Medicine at Paris, 1900.

[2] On the Cause of the Rise of Blood-pressure produced by Digitalis, by T. Lauder Brunton, M.D., F.R.S., and F. W. Tunnicliffe, M.D., M.R.C.P. From the Journal of Physiology, vol. xx., Nos. 4 and 5, October, 1896.

same name. According to Schmiedeberg the chief components of digitalis are digitoxin, digitalin, digitalein, digitonin, and digitin. Digitin has little or no physiological action and digitonin but little, so at present both may be dismissed from consideration. The crystallised digitalin of Nativelle consists chiefly of digitoxin, the digitalin of Homolle and Quevenne consists chiefly of digitalin, and German digitalin consists chiefly of digitalein and digitonin. The action of these drugs appears to be nearly alike in kind but different in degree, digitoxin being by far the strongest. Nativelle's digitalin, which consists chiefly of digitoxin, was found by Widal to be eight or ten times stronger than amorphous digitalin. Nativelle's digitalin in daily doses of from one to two milligrammes slows the pulse, while from three to ten milligrammes of Homolle's digitalin are required for this purpose. The German digitalin may be given in doses three times as great as Homolle's digitalin or ten times as great as that of Nativelle. The insoluble kinds of digitalin, Nativelle's and Homolle's, cause very considerable local irritation when used subcutaneously and may even lead to the formation of abscess, although the solutions are perfectly sterile. Soluble digitalin may be used subcutaneously in the form of 1 per cent. solution dissolved in equal parts of glycerine and water. From one to two cubic centimetres of this solution may be injected twice or three times a day.

The therapeutic actions of digitalis or of its active principles are (1) that they regulate the heart's action; (2) that they assist the failing circulation; and (3) that they act as diuretics. In cases of palpitation and functional irregularities of rhythm without organic disease small doses of digitalis, such as 10 minims of tincture, are sometimes very useful. The good effect of digitalis is well marked in cases of palpitation which have come on from physical strain as by lifting heavy weights, or from anxiety and worry. In cases where the palpitation arises reflexly from irritation of the stomach better results are obtained by bismuth and rhubarb than by any cardiac tonics, although the addition of nux vomica to these two drugs assists their action. In cases of aortic regurgitation where compensation is complete digitalis is quite unnecessary. Many persons suffering from aortic regurgitation are not conscious of the fact and it may only be discovered accidentally when a physician is examining them for some other complaint.

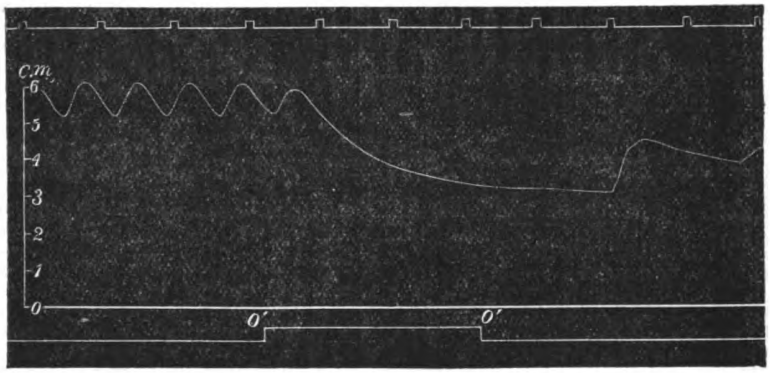
FIG. 1.




Fall of the blood-pressure during the arrest of the heart caused by irritation of the vagus nerve in the normal animal.

In aortic regurgitation with full compensation digitalis may possibly be harmful as the risk in such cases arises from fatal syncope. For the blood in the arterial system is emptied backwards into the heart in aortic regurgitation as well as forwards through the arterioles into the veins, the blood-pressure tending to become very low during the cardiac diastole. Should this diastole be prolonged the pressure may sink much below the normal and the risk of syncope is increased. But digitalis is of the utmost service when the mitral valves become incompetent either in consequence of damage to the valves themselves or in consequence of dilatation of the cardiac orifices from weakness after infective diseases such as influenza, or from failure of a hypertrophy consequent upon aortic regurgitation or renal disease (Fig. 3). Nor is it only when the heart has dilated so much as to render the mitral valves incompetent to close the dilated mitral orifice that digitalis is useful. It may be of service before this period by lessening the ventricular dilatation during diastole and thus diminishing the amount of blood which can regurgitate into it. At the same time by contracting the arterioles it lessens the onward flow and thus in

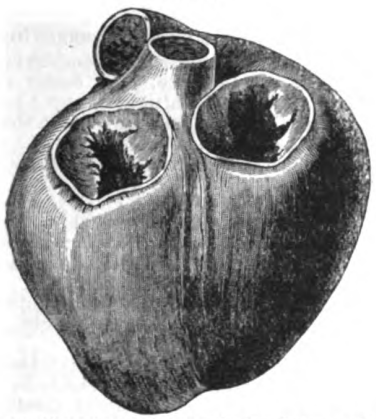
FIG. 2.




Slow fall of the blood-pressure during the arrest of the heart caused by irritation of th vagus nerve in an animal under the influence of digitalis.

a twofold manner retains the blood in the aorta during diastole, and renders the pressure of blood within it more steady, less jerking, and more nearly normal. To get the best results in severe cases the use of the drug should be associated with rest in bed and massage. The absence of exertion tends to lower the pressure which the heart has to overcome in systole and lessens the rapidity of the cardiac beats. The slowness of the pulsation produced by rest is still further increased by digitalis. Now it is during diastole that the heart has time to recuperate. It is what we might term the heart's period of rest, sleep, and repair, and by prolonging it we tend to restore the heart to its normal condition. In fact, we find that the empty

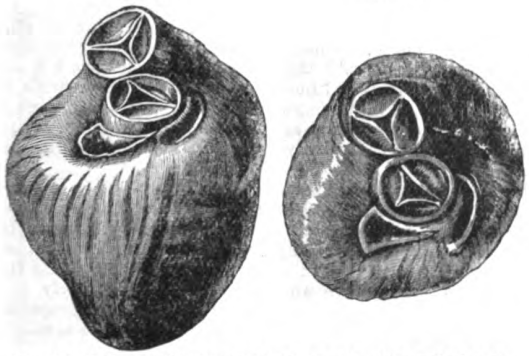
FIG. 3.



A completely dilated heart showing the insufficiency of the mitral and tricuspid valves.

arteries tend to fill, the distended veins tend to become empty, and the venous congestion which led to enlargement of the liver, indigestion, flatulence, œdema of the legs, and albuminuria, tends to disappear. The legs become normal in size, the enlarged liver becomes smaller, the digestion improves, and the urine becomes abundant and free from albumin. The pulmonary circulation also becomes freer and the shortness of breath and irritating cough become less and less and finally disappear. The dilated heart being able to contract more powerfully, the ventricular and auricular orifices become smaller and the valves, even though they may be damaged, will tend to close the orifices more completely during systole and thus lessen regurgitation (Figs. 4 and 5).

FIG. 4. FIG. 5.



Heart in full systole seen from two aspects. The mitral and tricuspid orifices are brought together by the muscular contraction so that the valves can completely close them.

In addition to this the increased force of the cardiac beats tends to oxidise the tissues more completely, for it has been shown that mechanical concussion tends to make oxyhæmoglobin give off its oxygen more freely. Moreover, the circulation in the arterioles being converted from a somewhat uniform pressure into a pulsating flow tends to lessen œdema, for it was found in Ludwig's laboratory in experiments on excised organs that when the circulation was carried on by means of steady pressure the organs tended to become œdematous and the circulation through the blood-vessels to cease, but when the natural pulsations of the heart were limited by the apparatus for artificial circulation the tendency to œdema was greatly diminished. By the use of massage in addition to digitalis a good deal of work may be taken off the heart, because, instead of having to drive the blood right round from ventricle to auricle, it will only have to drive the blood to the periphery—the movements of the masseur returning a great deal of both blood and lymph from the periphery to the heart.

Before concluding I should like to say a word or two upon the dangers of digitalis in cases of fatty heart and very high tension. It has been said with much truth that it is by no means easy to ascertain with certainty that the heart in any patient has undergone fatty degeneration, but when we find that its beats are feeble and its sounds are weak disproportionately to the size of the organ we will do well to be on our guard against possible injury from digitalis. It is evident that if digitalis causes contraction of the arterioles as well as of the heart and the heart has undergone fatty degeneration while the muscular fibres of the arterioles have not done so, the resistance to the cardiac contractions will be increased and a heart which is already hardly able to carry on the circulation may be still further hampered by the drug. In such cases, if we wish to stimulate the heart by digitalis, we ought to lessen the resistance in the arterioles by the simultaneous administration of nitrites, such as nitro-glycerine, nitro-erythrol, or ethyl-nitrite, most commonly given in the form of spirit of nitrous ether. The same precaution should be adopted in cases where the arterial tension is high and the heart is just beginning to fail, but in such cases we have also to remember the risk that may arise from the already high tension being increased and leading to a rupture of a vessel in the brain. In such cases it may be well to avoid digitalis altogether, but should it from any reason be thought advisable to use the drug, not only should nitrites be given at the same time but great attention should be paid to the condition of the bowels and liver. From pharmacological researches we learn a great deal about the action of individual drugs, but there is still an enormous field for investigation in regard to the action of drugs in combination, and although we have no definite information as to why the administration of mercury along with digitalis should greatly increase the utility of the drug there can be no doubt whatever that this is the case and that when digitalis alone fails to produce the result desired it will frequently act most efficiently if mercury be given along with it.

## THE DANGER TO THE COMMUNITY OF THE WORKMEN'S COMPENSATION ACT, 1897.

BY ALBERT BENTHALL, F.R.C.P. EDIN., M.R.C.S. ENG., M. & L.S.A. LOND.

THIS Act, which was entirely a new departure, or a leap in the dark, has now been in force for over two years and there is a general consensus of opinion that its early amendment is essential. The Act, as a whole, has been in many respects a success; the working-class have derived immense benefit, employers have been able to insure at moderate rates, and therefore the trade of the country has not suffered. The Act has, however, in its working become a real danger not only to employers and workmen but to the great mass of the people, whether rich or poor; and as I understand that the Government have been watching the development of events very carefully with a view to make the Act of advantage to all without pressing unduly upon any section of the public, I think that the profession should not only exert its influence in any proposed amendment of the Act, through those members who have been brought into contact with its working, but that the whole of the profession, whether interested personally or not, should be in a position to advise upon the subject and should interest itself in a question of national importance which will influence the fortunes of the people for many years to come, if not for all time.

As many medical men of undoubted position have not

been brought in contact with the Act I propose to call their attention to its working and to the danger which will result therefrom if it is left unamended. There is the danger to all employers of largely increased insurance rates, rates which will become a serious burden upon trade. There is the danger to the working-class of loss of work, of self-respect, and of degradation to the pauper class. There is the danger to every ratepayer of having the Poor-law rates trebled, not for the advantage of the community but simply for the support of men who but for this Act would have been both able and willing to work.

The Act was intended to provide workmen with reasonable compensation for the result of any accident happening to them in the course of their employment, and skilled medical referees were appointed under it by the Home Secretary to report to county court judges and other arbitrators as to the nature of the disability in each particular case. It was naturally supposed that the Act meant what it said and that employers were only liable for the consequences of accident, and that the medical referees would protect the employers not only from malingering or exaggeration of disability but would advise the judges or arbitrators whether a disability was the consequence of accident. The working of the Act in this particular has come as an astounding surprise, for the judges have dispensed with the medical assistance provided for them and have proceeded to make a succession of haphazard judgments upon medical questions the points of which they are quite unable to appreciate. Far be it from me to animadvert on the knowledge or acumen of our judges, who are rightly looked up to as being not only absolutely impartial, but as being on legal questions fully equipped for right judgment; but no man, however brilliant, can be an expert in all subjects, and it is the peculiar province of medicine and surgery to be inexplicable to the highest trained intellects in other branches of knowledge. Even graduates in medicine and surgery practising generally, who have devoted their lives to the study of these sciences and who are excellent all-round men, call in a specialist who has had exceptional experience in some one branch when a difficult case is met with in practice. Can it be wondered at, therefore, that judges who are absolutely untrained in medicine and surgery, who have declined all advice from the impartial medical referees provided by the Act, have hopelessly failed to grasp the often intricate medical points in question and have brought the Act to its present position of a veritable danger to the community, for the reason that as it is impossible to obtain justice in the interpretation of it, employers are obliged to pay doubtful and suspicious claims rather than incur heavy law costs resulting in haphazard judgments.

The Act as it stands puts a premium on malingering and has a demoralising effect upon large numbers of workmen. The Court of Appeal, with that singular blindness which seems generally to affect laymen when asked to consider any medical subject, has by one decision altered the whole scope of the Act and enlarged it from its contemplated function of compensation for accident incurred in the course of employment to an Act compensating workmen for the effects of any pre-existing disease which may be slightly and temporarily affected by a trivial accident which would not produce any disablement in the case of a healthy man. By this decision employers are confronted with the question, Shall we employ men who are old or diseased when we know that we shall have heavy compensation to pay if a trivial accident produces death or disablement to a workman who is diseased or aged? The large employers have many of them answered this question by declining to accept the services of old men or of those suffering from any physical defect; this action will be followed by all classes of employers, and the result must be that men fully able to work and who would, barring the event of some slight accident, work for years, will be driven from employment and forced to seek relief from the Poor-law. Thus the community will be saddled with the burden of providing subsistence for men anxious and willing to work but who are unable to obtain it.

There are many points under the Act which have come into prominence, but from a medical point of view the questions of the functions of the medical referees, the assessment of the amount of disability produced by accident, and the discrimination between the effects of accident or of the results of pre-existing disease overshadow them all. On these questions I venture to hope that the profession will be solid and that each individual member will use his influence with Members of Parliament and others so that the Act may be amended and its dangers avoided.

I have appended some short notices of cases which have come under my notice and these will, I think, bring home to the profession the serious consequences which must result if the Act remains unamended. If the Government decides to leave the disease question untouched, it must be apparent that employers in the future will have either to pay very largely increased insurance rates or they will have to protect themselves by the employment of healthy and robust workmen only, but if in the amendment of the Act now in contemplation this question is dealt with and also medical referees made efficient, employers can easily bear the burden of compensation for accident only and thousands of men with families and happy homes will not be forced to the last refuge of the destitute—the Poor Law.

### CASES UNDER THE WORKMEN'S COMPENSATION ACT.

*Gout.*—A workman in the course of his employment held a flatter for a hammerman to strike. The flatter turned and his hand was jarred. Two days afterwards gout appeared in the hand and the medical attendant stated that the man had the gouty diathesis and had had several previous attacks of gout in this same hand. The Court of Appeal held that the employer was liable, Lord Justice Collins going out of his way to explain that under this Act employers were liable just in the same way as railway companies were, where negligence was proved—that is, that they have to pay heavily for a slight injury to a weakly person when the same injury would not, perhaps, have affected a healthy one.

*Bright's disease.*—A bruise on the shin producing in a workman suffering from albuminuria prolonged ulceration was held to render the employer liable.

*Electric shock.*—A workman engaged as a bricklayer alleged that by touching a broken incandescent electric light he had sustained a shock that produced permanent disability. The hospital surgeons stated that they had not heard of any accident, but had treated the man for peripheral neuritis of alcoholic origin. The man was a typical chronic alcoholic and it was explained by medical and electrical experts that 100-ampère current could not cause the disability. The county-court judge remarked, "Oh, but they kill people by electricity," and he could not be made to see the difference between 100 ampère current working at a pressure of under 100 volts and of a current at a voltage of 3000. He was asked to feel the current of an identical lamp to the one in question, but he declined and awarded the workman £1 a week for life.

*Cancer.*—A workman suffering from cancer of the bladder, for which an operation had been performed, died after a further operation in the groin. Although cancer was the cause of death it was alleged that the man had accidentally wrenched his leg at a time between the two operations, and a "fatal" claim was made on the employer.

*Varicose veins.*—A workman with varicose veins of long standing in both legs had an accident producing a slight sprain of one ankle. When all objective signs of this sprain had disappeared he said that he could not work as his veins were much worse. Although two medical men who had watched the case all through refuted this, and although the workman did not produce any medical evidence in support of his statement, the county court judge awarded him half wages for life.

Employers have also been held to be liable in cases of phthisis where an alleged strain had been said to produce hæmorrhage; in cases of diabetes when gangrene had appeared after a trivial injury, and in cases of old age when senile gangrene had appeared after a bruise of a foot. Numberless cases have also occurred where county court judges have disregarded the medical evidence altogether and have made awards in favour of workmen who were absolutely not in any way disabled.

Cockspur-street, S.W.

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MÜLLER'S ORPHAN HOUSES, BRISTOL. — The annual report of this institution has just been issued and it shows that the total amount received in the year for the various branches of the work without a single application being made for pecuniary help was £43,986. The orphans numbered 1729, of whom 14 had died. The school work, missionary work, and the Bible distributing have, as usual, been prosecuted earnestly during the year.

# MEASLES, GERMAN MEASLES, AND THE "FOURTH DISEASE."

BY ROBERT CRAIK, M.D. GLASG.

CASE 1.—In April, 1899, a girl, aged nine years, had an illness the chief symptoms of which were pyrexia and a bright-red rash. On waking one morning she felt unwell and it was found that she had a rash. Her temperature was 99° F., the tongue was slightly furred, and the rash was very like that of scarlet fever, except that the naso-oral region was invaded by the rash which was more punctate and had less of the general flush than one expects in scarlet fever, especially on the face. As it was important to arrive at a definite opinion as soon as possible I asked a medical friend to see the case with me. He pronounced it to be scarlet fever. On the limbs and body it exactly resembled scarlet fever. I decided not to notify but to isolate. For a fortnight the patient was kept in bed and during the third week she remained in one room. It was in the course of the third week that I detected a fine mealy desquamation on the limbs but not on the hands or feet. In the course of the third week the patient several times mixed with the younger children in spite of my advice. No other case occurred in the family. This fact, taken along with the absence of any real sore-throat and strawberry tongue, the very mild illness and the slight desquamation, confirmed my opinion that it had not been scarlet fever. In March, 1900, I attended the same patient for a typical attack of measles of considerable severity with broncho-pneumonia. Convalescence was tedious, but satisfactory. In May, 1900, I attended her again for a typical attack of German measles with the chains of enlarged glands in the neck. As a rule Koplik's spots are present and are easily seen at an early stage in measles. I have not seen anything like them in German measles during a recent epidemic.

CASE 2.—On March 26th, 1900, a girl, aged four years, was reported to be suffering from scarlet fever. On the previous night a rash was noticed; she had been hot and restless during the night and had vomited. She had some sore-throat and the tongue was furred. I had attended her for a typical attack of measles about two months before. The rash was very like scarlet fever, and although there was no scarlet fever in the district it was decided to notify the case. The temperature had been 101° F. for over 24 hours. The patient's temperature was 99° on the evening of the 27th and it remained normal. There was no desquamation or only the very slightest.

CASES 3 AND 4.—On April 8th the brothers of the last patient, aged respectively eight years and five years, were reported to be suffering from scarlet fever. The rash had appeared during the night and the children had been hot and feverish. The younger one had bled at the nose. They both complained of sore-throat and seemed to have slight rhinitis. Their temperatures were above 100° F. for 24 hours and one had a temperature of 102°. It reached normal in about 48 hours and remained normal. Although the rash was very marked there was no desquamation.

These three children (Cases 2, 3, and 4) were sent to the Scarlet Fever Hospital and mixed freely for six weeks with six patients the subjects of typical scarlet fever with profuse desquamation who had been sent by various medical men from several districts, and not one of them developed scarlet fever. For several reasons I think that they had not scarlet fever. 1. Case 2 was the first case in the village. The children in Cases 3 and 4 did not show the rash till 13 days after the removal of their sister. The house in which they lived was a small cottage and there was no isolation. There were no other cases meanwhile as far as is known. 2. Not one of the three children had a strawberry tongue. 3. The temperature did not remain above 100° F. for 48 hours in any of the three cases and did not rise again after disappearing. 4. Although the rash was so very marked in all three cases there was no desquamation in any. 5. These cases (Cases 2, 3, and 4) proved to be the first of an epidemic of German measles. Most of the cases were typical of German measles, the tenderness in the neck giving the clue to the disease from the beginning. None of the other cases so closely resembled scarlet fever as the three under notice, but I think that they all more closely resembled scarlet fever than measles. However, it was during this epidemic that the child who was the subject of Case 1 had her third illness. 6. There was no scarlet fever in the village at the time and no probable clue to a source of infection.

Conisborough, Yorks.

# PRELIMINARY RASHES IN MEASLES.

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ON April 8th, 1900, a boy, eight years of age, was admitted to the hospital with high fever. There was a history that after an illness of four or five days he had had on the previous evening a smart epistaxis. He was admitted late at night, and early the next morning he presented all the signs of a severe attack of measles, the typical rash appearing later in the day. He was at once removed to an isolation ward, and the ward in which he had spent the night was placed in quarantine. His disease ran a favourable, though severe, course and he left the hospital on April 22nd. In the cot next his was a small boy, three and a half years of age, convalescent from broncho-pneumonia. On April 9th, though otherwise well, he vomited, and three days later he had a good deal of fever, without any recurrence of the pneumonia, the temperature rising as high as 103·8° F. It came down again on April 14th and he was quite well till April 18th—i.e., 10 days from the admission of the patient suffering from measles. On this day the temperature of this boy and also of a girl in the opposite cot rose in the evening, and the boy had a slight nasal catarrh but was otherwise well. The girl, however, with a temperature of 103·6° F. was very ill, and in the evening she developed a brilliant scarlatiniform eruption round both elbows and extending some way up the back of the arm. There was no sore-throat. She was, however, isolated. On the next day she had a brilliant erythema which developed in patches over the face and trunk, and the face was scarlet with a well-marked "oral ring." The boy meanwhile presented a slight blotchiness of the face and some small discrete and easily palpable papules behind the ears and on the neck and shoulders. These eruptions in both cases had disappeared on April 21st and the boy especially appeared quite well; but on the next day—i.e., 14 days after exposure to contagion—both patients had the typical measles rash. On the next day, the fifteenth, two more cases declared themselves at the further end of the ward, and two more on the sixteenth day; the last of the series following on April 26th—i.e., the eighteenth day after exposure. Of these five three had well-marked preliminary rashes appearing in all three on the day before the true measles rash; in two cases the rash was a fine papular eruption on the face, behind the ears, and on the neck, very distinct and easily seen and felt; while the third had a scarlatiniform eruption, which was not, however, uniform, but blotchy, over the neck and shoulders. Thus out of a ward of 19 patients exposed to infection 10 had already had the disease and escaped re-infection; one died from sarcoma during the incubation period; one, a baby a few weeks old, escaped infection; and the remaining seven caught the disease. The preliminary rashes were present in five of the seven cases, and in four, apart from the temperature, were the earliest manifestation of the disease, for Koplik's spots, though carefully looked for, were not found; in the fifth the tenth day of the incubation period was signalised by an explosion of "convulsions" lasting 12 hours.

These rashes were so obvious and striking that I have thought them worth recording, more especially as I find that the majority of the text-books omit all mention of them. They receive a passing notice in Fagge's "System of Medicine" and in Dr. Caiger's article on Measles in Allchin's "Manual of Medicine," but in the other books which I have consulted I have failed to find any reference to them. I believe, however, that they are familiar to the medical officers of the hospitals of the Metropolitan Asylums Board, where they appear as cases of scarlet fever. I venture to think that they are of some importance, both as a means of diagnosing measles before the appearance of the true rash, and also because in the scarlatiniform varieties they are apt to mislead the practitioner who is not aware of their occurrence.

Bentinck-street, W.

# THE HOT-AIR TREATMENT OF ECZEMATOUS, GOUTY, RHEUMATIC, AND OTHER AFFECTIONS.[1]

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THE free interchange of opinions and observations being at the root of medical progress there need be little hesitation in bringing forward a brief description of a comparatively new therapeutic method. In the present instance it is proposed to relate from personal experience the chief points of interest with regard to the superheated-air treatment of eczematous, arthritic, and other diseased conditions. The special treatment consists in the local application of dry hot air at an exceedingly high temperature. The therapeutic results of this increased administration of heat have been, to say the least of it, remarkable. In this way many chronic and painful conditions have been brought within the range of relief and sometimes of cure, and there can be no doubt that a new therapeutic agent of value has been placed in our hands.

The apparatus consists essentially of a cylinder in which a part of the patient's body, say an arm or a leg, is enclosed and fastened in by an air-tight curtain. Heat is applied by means of gas, oil, or electricity until the air inside the cylinder reaches the desired temperature. Before the treatment is applied the patient is stripped and wrapped in blankets, while the part placed inside the cylinder is covered with a layer of lint. After a varying period there is free acid sweating, together with increased frequency of pulse, while the body temperature is raised 2° or 3° F. In addition to these changes there is often an immediate and striking relief of pain and the range of movement is increased in stiffened joints. These two last-mentioned facts point to a deep therapeutic action beyond the obvious surface diaphoresis. It will also be observed that although the application of the heat is local yet the effects upon the body are general, as shown by the quickened pulse, the free sweating, and the raised temperature. For that reason pain in a foot may be relieved by placing an arm in the apparatus, and a stiff elbow may move more freely after local treatment of a leg. These are things that admit of definite statement. The free action of the skin is accompanied by increased elimination from the kidneys. Dr. Chrétien[2] of the Laennec Hospital in Paris has recorded the fact that in a case of long-standing gout the daily elimination of uric acid by the kidneys was found to rise from 57 centigrammes after the fourth bath to 89 centigrammes after the ninth. It is to this increased kidney action that the benefit of the superheated air in gouty conditions is doubtless to some extent due.

It will naturally be asked, What cases are suitable for superheated-air treatment? Generally speaking, the treatment is likely to do good in (1) painful nervous affections; (2) many painful and stiffened joints; (3) other diseases—e.g., anæmia and Bright's disease; (4) eczematous skin troubles; and (5) arthritic diseases, rheumatism, gout, and their allies.

1. *Nervous affections, sciatica, lumbago, writer's cramp, chorea, local atrophy.*—The relief of pain often obtained by the hot air naturally suggested the treatment of nerve-pains. It was found that some obstinate neuralgias and sciatica yielded readily to a few applications. At the same time it should be noted that a few cases of sciatica resist this, as they do every other form of treatment, from simple massage up to heroic nerve-stretching. On the other hand, the hot-air treatment now and then cures obstinate sciatica in a rapid and brilliant manner after the failure of other remedies. This uncertainty of result is probably due to the varying origin of the pain in a structural neuritis or a functional neuralgia. The effect of the hot air may be aided by passive motion to break down adhesions followed by a period of complete rest. Writer's cramp is a neurosis that in several recorded instances has been quickly cured. In one case under the author's care the patient was able to write a newspaper article after being treated a few times. Chorea, even of a severe type, may be cured with a quickness and success rarely known to drugs. At the Tallerman Free Institute a girl, aged 15 years, suffering from moderately severe chorea, showed marked improvement after a week's treatment. Three weeks later she was so far recovered as to be able to assist in housework, and, as her mother put it, "to peel potatoes." In five weeks she was cured.

2. *Painful and stiffened joints.*—The immediate relief to pain is one of the most remarkable results of the hot-air treatment. Were there no other good effect that alone would justify the existence of the cylinder. Narcotic drugs are only in a limited sense curative; they dull the perceptive centres but leave the seat of active mischief untouched, while they are apt to do a great deal of mental and bodily harm. With the Tallerman treatment, on the other hand, the relief is often rapid and permanent, and when it fails to relieve it has the great advantage of doing no harm. With regard to stiffened joints, the amount of good effected by the superheated air depends to a great extent on the nature of the limitation. Where there is bony union of course no good can be done so far as movement is concerned. Neither can much be hoped for when the joint is hopelessly disorganised, as in a Charcot's joint or in the later stages of osteo-arthritis. Where the limitation of movement, however, is due to fibrous ankylosis, to synovial thickening, or to adhesions generally in or around a joint, the results of the Tallerman treatment are often brilliant. After a single application the range of movement may be visibly increased and pain abolished. In some cases it is advisable to break down adhesions under chloroform. In dealing with joint-stiffening, therefore, it is necessary to make a careful diagnosis as to the structures that are at fault and the stage at which the diseased process has arrived. In early osteo-arthritis it is possible to arrest the malady, whereas at an advanced period when the articular surfaces are eburnated and there is a large amount of periarticular deposit all that can be hoped for is to diminish the pain which is now and then so prominent a symptom. Where the mischief in a joint is no longer active the hot-air treatment may be applied irrespectively of the origin of the malady, whether that be gouty, rheumatic, osteo-arthritic, gonorrhœal, or traumatic, and so on.

*Gonorrhœal rheumatism.*—As everyone knows, gonorrhœal rheumatism is often most rebellious to ordinary treatment. Under the hot-air treatment, however, it often yields in a way that is not less rapid than satisfactory. A typical case is the following:—

CASE 1.—A man, aged 45 years, presented himself at the Tallerman Free Institute on Jan. 29th, 1900, complaining of pain and stiffness in several joints. There was no family or personal history of rheumatism. He stated that he had suffered twice from gonorrhœa. The first attack was three years previously and he was treated at Guy's Hospital. In the second attack he went for some time without treatment, but was afterwards admitted to the Lock ward at Champion Hill Infirmary. After being there for two weeks he got pains in the wrists, shoulders, and feet. He was in the infirmary altogether for 13 months and had left two months before coming to the institute. During the whole of that time the pain never left the joints first attacked. At the institute his left wrist was found to be free, the right was locked, so that only a slight movement could be effected with much pain. He walked stiffly with the aid of a stick, and halted with the right foot. There was no tenderness in the knees and feet, but pain was complained of in all those joints. His improvement under the Tallerman treatment was rapid. The pain went from the shoulders and the left leg after the third treatment and after the fourth he walked without a stick. The right wrist moved more easily. Nine days later he felt so well that he went to work shovelling snow in the streets, but the pain came on in the feet and he had to return home. This recurrence soon yielded to treatment and he got rapidly well and has not since reported himself.

3. *Anæmia, Bright's disease, &c.*—Without entering into details it may be stated generally that cases of anæmia often benefit to a marked extent under the hot-air treatment. This may be to some extent due to the fact that chronic constipation is often markedly relieved by the treatment, especially when applied to the abdomen by what is known as the "hip-bath." Asthma, chronic bronchitis, dropsy, Bright's disease, dysmenorrhœa, and some forms of heart disease may be benefited by the treatment.

[1] A paper read before the Clinical Society of Great Yarmouth on May 15th, 1900.
[2] The Tallerman Treatment, A. Shadwell, M.B., p. 9.

4. *Eczematous and other troubles.*—Some most interesting results have followed in the case of symptomatic eczemas. In 1890 I drew attention to a class of skin inflammations which I ventured to call "excretory inflammation."[3] I pointed out that the direct or vicarious action of the skin as an excretory organ might lead to its irritation by the outward passage of various blood-borne irritants such as iodine or arsenic, the virus of certain diseases such as gout or rheumatism, or specific micro-organisms or their products as in various exanthems. In these various symptomatic rashes the skin was attacked as one of a system of excretory organs. If there be any truth in that theory then the removal of the underlying cause of a chronic excretory irritation would cure the concomitant rash. In the following case, an eczematous skin rash of several years' standing was cured by the Tallerman treatment unaided by external or internal medicine.

CASE 2.—A female, aged 45 years, unmarried, came to the Western Skin Hospital in Nov. 1898, complaining of an eczematous rash from which she had suffered for 16 months. She had been under a private medical man. At the hospital she was treated by various internal and external remedies and was seen by several dermatologists. She had an eczematous rash which began and persisted in the hands and at times involved the trunk and limbs. She was the subject of various diagnoses, such as masked scabies, eczema of gouty origin, and syphilis, and underwent thorough treatment. At the end of 1899, however, she appeared to be one of those chronic patients who are the despair of every skin hospital. She was at last sent to the Tallerman Institute for the hot-air treatment. The crusted, desquamating, eczematous condition of the right hand is shown in the illustration (Fig. 1), and the left hand was almost as severely affected. The right hand only was put in the cylinder and after 11 exposures was practically free from the eczema, which remained slightly over the metacarpo-phalangeal region of the right hand. After a further series of baths both hands became perfectly normal. There was a slight recurrence in the right hand which, however, soon got well, and the patient has now remained well for some months, the illustration showing the present condition (Fig. 2).

FIG. 1.

The right hand of the patient before treatment.

This case shows in a striking way the power the superheated air has in affecting a general condition, as the left hand was cured of the eczema without having been placed once inside the cylinder. It also shows what the treatment can do in some cases where drugs have failed.

In a second case a chronic palmar eczema of five years' duration following a burn in a rheumatic subject was rapidly cured. In this case it is interesting to note that menstruation became regular after the baths; it had not been regular for a year previously.

In another case still under treatment an acute eczema of the hand and forearm, attended with great œdema, has been almost cured.[4]

It may fairly be claimed, then, that the Tallerman superheated-air system has furnished a remedial agent of value in the treatment of certain obstinate inflammations of the skin. Good results have been thus obtained in various forms of seborrhœa, erythema, ichthyosis, and dry and scaly eruptions generally.

5. *The arthritic group.*—It is curious that in such well-defined diseases as gout, rheumatism, and osteo-arthritis we know so little that is definite with regard to their origin. We are agreed that an excess of uric acid is constantly present in the blood of a patient who has gout, but we cannot say whether it is produced by, or even whether it is the cause or the result of, a damaged kidney. Nor is the etiology of rheumatism less obscure although recently there has been a tendency to attribute the malady to a bacterial origin. In osteo-arthritis we are more than ever at fault, as we have a condition in which gouty, rheumatic, vascular, and nerve troubles may be present singly or together in a malady that destroys the joints progressively. Acute gout and acute rheumatism we are able to control by drugs—by colchicum and saline aperients in the one and by salicin and the salicylates in the other. Few medical men, however, would claim a definitely curative action in either case. When we come to sub-acute and chronic gout and rheumatism most of us will admit that there is little hope of controlling, and still less of curing, by means of drugs. It may be said of both diseases, as a recent writer has said of gout, "that as regards diet, exercise, and even drugs each case must be treated more or less experimentally, and later by the light of such knowledge as experience of the individual case may give."[5]

FIG. 2.

The right hand of the patient after treatment.

When we come to osteo-arthritis the confession of helplessness is still more emphatic. As a rule a patient attacked by that disease has nothing to look forward to but a life of progressive misery and suffering. These gaps in therapeutics are to some extent filled by the Tallerman treatment. Acute gout can be controlled by the hot-air

[3] Excretory Irritation, D. Walsh, M.D., 1897 (Baillière, London), p. 9.

[4] Since the paper was read this patient has been completely cured.

[5] F. J. Smith, M.D.: Differential Diagnosis, p. 212.

cylinder. Acute rheumatism, so far as one knows, has not been thus treated. Sub-acute and chronic conditions of both gout and rheumatism are often either benefited or cured by the treatment. Last but not least, osteo-arthritis may be checked in its early stages, while later pain may be relieved, the movements of crippled joints restored, and the progress of the disease arrested. In making these general statements as to chronic joint stiffenings due regard must, of course, be paid to the condition of the joint. At the risk of some repetition it may be pointed out that in an advanced state of disorganisation all that can be hoped for is to relieve pain and check the progress of the disease.

CASE 3. *Chronic monarticular rheumatism.*—A man, aged 45 years, had chronic sub-acute pain of the right shoulder of about two years' duration. There was no clear family history of rheumatism or gout. The urine was normal. The pain was felt on certain movements of the joint. There was one acute attack in which the temperature ran up to 102° F., with intense articular pain and tenderness. There were occasional twinges of pain in the right forearm and wrist. The patient used to ride a good deal, and sometimes got wet while hunting, but that did not increase the joint trouble. A glass or two of champagne, however, was almost certain to be followed by pain in the shoulder within 24 hours. Treatment of all kinds proved useless so far as a cure was concerned. Courses of drugs, salicylates, iodide of potassium, and alkalies were given. Diets of various kinds, including a vegetarian course, were tried. Prolonged massage and bath treatment at various spas—Bath, Droitwich, and Baden—afforded nothing beyond temporary relief. The effect of the superheated-air bath was marked and immediate. After 11 baths the patient was almost free from pain. He had an apparatus at his own house, and after a few months he could strike out freely from the right shoulder. He was free for something like two years, when the rheumatism recurred in the left shoulder under conditions of bad living and exposure.

CASE 4.—The patient was a married woman, aged 50 years; she had 10 children living. She came to the Free Institute on March 2nd, 1900, complaining of pain and swelling of the feet. Her father died, aged 46 years, from heart disease. Her eldest brother had "rheumatism." The patient had had rheumatic fever four times; the first attack was 22 years ago; she had had three attacks within three years. Six weeks previously swelling came on in the feet with great pain which had kept her awake at night and she had had to take sleeping draughts constantly. The hands were stiff and the arms could not be lifted above the level of the shoulders which crepitated and were tender on deep pressure. The eyes were puffed in the morning and she felt "tired." The heart's action was irregular, with loud mitral systolic and double aortic murmurs. She had suffered from cough for several winters. The specific gravity of the urine was 1020; there was no albumin. A diagnosis of chronic rheumatism with valvular disease of the heart with poor prognosis was made. Improvement under the superheated air was marked and rapid. After being treated four times the patient was able to walk better and to sleep at night without draughts. On May 30th she could walk well for some distance. The movements of the hands were free and she could touch the top of her head with the left hand and almost with the right. No cardiac murmurs were heard on the last-mentioned date. Her general health was improved and she felt hungry on walking home after treatment.

The foregoing case shows that cardiac complications need not necessarily contra-indicate the application of the Tallerman treatment. It also shows the amount of good that can be effected even in most unpromising cases. A great number of further cases, illustrating the value of the treatment, might be added. The few that have been noted will serve to indicate the chief directions of usefulness of this new remedy. Many more have been placed on record by good observers, both at home and abroad, as may be seen by a reference to Dr. Shadwell's monograph on the subject.

Bentinck-street, W.

WATER-SUPPLY OF NEWPORT (MON.). — The expenditure of the Newport Corporation on the Wentwood Water Works scheme up to the present amounts to £214,798.

SMALL-POX HOSPITAL FOR BARRY.—At a meeting of the public health committee of the Barry District Council held on August 8th it was decided to erect a permanent small-pox hospital at an estimated cost of £8160.

# SOME REMARKS ON CANCER OF THE BREAST.

BY SKENE KEITH, M.B., C.M., F.R.C.S. EDIN.

A VERY great deal of interest, perhaps even greater than has ever been the case before, appears at the present time to be taken in the disease cancer. The three questions usually asked by the general public are, Is it increasing? is it hereditary? and is it curable by operation? Concerning cancer of the breast I wish to bring forward some details, not new certainly, but which often do not seem to me to have had sufficient attention paid to them when the character of the operation in that region has been discussed. I make no apology for not entering into the first two questions, for it does not seem to me that we are in a position to answer either of them definitely. To answer the first, it would be necessary to have for comparison the statistics of two considerable periods of time, with—and this is of vital importance—an equal amount of knowledge on the part of those supplying the data for the statistics. Even if we were to attempt to compare the statistics of the past 10 years with those of the preceding decade we are faced with the fact that medical education has improved and more especially in the department of pathology. Although the microscope has done wonders to help us, it is not so many months ago since we had a case brought forward, by competent men, of a cure, temporary at least, of a sarcoma by the injection of Coley's fluid. The diagnosis had been made not only clinically but also by the help of the microscope. Doubt was expressed as to the correctness of the diagnosis, and after a second microscopic examination of the specimen the tumour was pronounced not to be a sarcoma. If this represents the state of our knowledge here in London how can we expect that a hard-worked practitioner in the country can always give a correct certificate in a doubtful case?

Then when we come to the question of heredity and a patient says, "It is very strange; there was never anything of the kind in my family," how does he or she know that it is not in the family? People try to hide cancer, and it is this feeling of secrecy which helps to bring patients to us too late. It must have occurred to many practitioners to meet with cases of cancer where, for one reason or another, an operation has not been advisable and where the patient has died from something else. In such a case the friends may know nothing about it, and will truthfully say that so far as they know the disease is not "in the family."

The answer to the question, Is cancer of the breast curable by operation? is, in my opinion, most certainly in the affirmative; but not every case, even when it is apparently favourable in itself for operation. One life insurance office quite recently did not recognise as a cure a case where there was no return after seven years. The first thing to be decided, if possible, is what is a cure. A reasonable definition appears to be that the patient dies from some other disease than cancer, there being no sign of return. Within the scope of this definition a cure might be claimed if a patient died from any acute disease a few weeks after operation. This would be a true but not a legitimate claim, and it shows the difficulty of defining what is a cure, under the circumstances. The question of time, therefore, comes in, but it does not come in satisfactorily; because if a patient died 20 or 25 years after a cancerous breast had been removed no one could say positively that the disease might not have returned if she had lived another year. There must always be this doubt, and there may therefore be those who honestly hold that a cure cannot be obtained by operation. A space of three years has been arbitrarily fixed by some as the time after which a cure may be claimed. This is undoubtedly too short a time, but even suppose one fixed it at five years, there would still be some, though much less, doubt. Every year increases the patient's safety, and at the same time increases the difficulty of keeping track of the cases. The only positive gain in fixing a certain length of time as a cure is that it will cut out the patients who die from some other disease before the time limit is reached. There is another way of looking at this question of cure, and that is, can a cancerous growth which appears after, say, five or six years be reasonably called a recurrence of the original growth, or is it not a disease originating *de novo*? But this

brings us back to the heredity and predisposition question. Speculations and theories of this kind do not do anything for the patient, and while I consider that many patients can be cured, there will be, with our present knowledge, always some doubt in the patient's mind after operation. A time limit may be sufficient for statistics, but it is not long enough for the patient.

Within the past 10 years I have seen four cases where operations had been performed on the mamma for malignant disease and where the whole of the gland had not been removed. To be quite correct it would be better to say that the patients had been told that the disease was cancer. In three of these four cases there was a return, and in the fourth there has not been, so far, any return, though I was consulted as to the propriety of a third operation, which had been proposed. As it is now five years since the second operation, performed 10 weeks after the first and more than three since I first saw the case, and as the patient has still two considerable pieces of breast, which I was informed swelled up considerably after a confinement, it is probable that the disease was of a benign nature. This, however, does not affect the statement that four cases have been seen in 10 years where apparently no effort had been made to remove the whole of the mammary gland when operated on for cancer.

It might be supposed that these operations had been performed by surgeons of little experience, but this was not the case. In one the operator was a surgeon to a general hospital in a large provincial town, and in two the operations were performed by two hospital surgeons in London. In the fourth case my father was consulted, and I do not know who the operator was. This one I simply saw as a curiosity, my father never having met with anything of the kind before. This may be a unique experience, and it may be rash to argue from such a small foundation, but when we hear so much of the very formidable operations advocated at present and see the patients come as they do, when the operation has failed to cure, with the evidence of an enormous scar to show how extensive the operation has been, are we not justified in thinking that there may be something not quite right? Have the operations in the past been performed as well as they might? and—what everyone knows but what seems to be kept in the background—is it not that there are many varieties of malignancy in what appear to be ordinary cases of cancer of the breast? To take the second question first, it may be, and at least ought to be, flogging a dead horse. Compare the case of a florid, clear-skinned young woman, 35 years of age, with a hard mass in the breast, which has been noticed for a month or six weeks and which is increasing in size, with that of a thin old woman 75 years of age, who has noticed a lump for some time, she does not exactly remember for how long. Microscopically the structure of these two growths may be very much the same, but in the first the patient will be dead in a year after the operation, no matter how extensive it be; and in the second five or even ten years may show but little increase in the size of the growth. Nor is it only in the very old that we sometimes see comparatively slow growth of a scirrhous tumour, though the answer to this may be that all slow-growing tumours have been originally simple. This answer hardly holds for a case such as the following. A patient, 48 years of age, consulted me nearly six years ago on account of a hard mass in the left breast situated at the upper and inner part. The history of the tumour was that it had been known of for about six years, as a medical man had been consulted at that time. My diagnosis of scirrhous cancer was corroborated by the late Sir James Paget, and also after the removal of the breast. Rather more than a year ago there had been no return. As there had not been any perceptible increase in size in six years it is at least very improbable that the tumour was cancerous from the beginning. A case like this demonstrates also the difficulty of a time limit. Three years would undoubtedly be too short, when the tumour had been growing for at least double that length of time.

The average duration of life after a cancer of the breast has been discovered has been variously estimated at from about three to four years. This means, of course, that a certain number would die before the average time was reached, or, in other words, that the malignancy in these cases was greater than in the others, and that consequently the tendency to return would be greater in them.

To come back to the question of the possibility of some of the operations in the past having been performed without sufficient care, we must clear up the question of return of the disease. A local return—that is to say, one close to where the disease had been removed or in direct communication with the surrounding lymphatics—must be differentiated from the reappearance of cancer in some other part of the body. The reason for the return in the first is, or at least may be, that the disease has not been removed with sufficient care or extensively enough. When the disease reappears in some other part of the body no blame can possibly be attached to the way in which the operation has been performed. An example of the first was a lady, 45 years of age, whose breast I removed for a scirrhous growth, the presence of which the patient had known of for at least two years. Barely 12 months afterwards a small growth of about the size of a pea was noticed under the skin and some distance from the scar. It was supposed to have come as the result of a kick while playing with a child. I removed it freely, and also another at the end of the second year, which also was put down to a blow. Since this third operation the three-years limit has been passed. An example of the second was a case where the breast was removed and within five months there was deposit in the lungs, everything else being healthy. In the first there was a local recurrence because I had evidently not removed as much apparently healthy tissue as was necessary; in the second there was surely a centre of disease unconnected with the breast. Had one or both pectorals been removed in the first case the disease would have returned, because the deposit was in the fat superficial to the edge of the breast, and a similar operation would not have prevented the appearance of the disease in the lungs in the second case.

The Halsted operation is one which must have, from its severity, a certain amount of mortality in weak subjects, while the removal of the breast and axillary glands is an operation unaccompanied by risk to life, except the accidental risk common to all operations, no matter how trivial. What is more necessary than the removal of one or both pectoral muscles is the careful removal of the fat superficial to the breast. It may be different in hospitals now, but 20 years ago it was common to see a fairly large piece of skin excised, and little or no precaution taken to remove the fat superficial to the remainder of the breast and so, when the wound was drawn together, a thick layer would often be seen to have been left behind. Comparatively recently it has been shown that the lymphatics do pass freely into the superficial fat, and it may be that if extra attention is paid to this part during the course of the extensive operations practised by some, the improved results are due to this rather than to the free removal of muscle. To come back to the starting place, if a certain number of cases are operated upon where part of the gland only is removed, is it not possible that many more may not have sufficient tissue surrounding the breast removed and that it is in this way that the supposed necessity for the much enlarged and consequently more dangerous operation has come about?

Charles-street, W.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### NOTE ON AN UNUSUAL CASE OF SCARLET FEVER.

BY A. J. RICE OXLEY, M.D. DUB., M.R.C.S. ENG.

THE following case is of so unusual a character that it appears to me to be worthy of record.

On June 20th I was sent for to see a boy who was suffering from rash, sore-throat, and fever. The case was undoubtedly one of scarlet fever and was at once isolated. On the 26th free peeling commenced, the little patient meantime having done very well in every way. On the 30th he was allowed to sit up. On July 2nd the cervical glands, both sides, commenced to swell and become tender, although the temperature remained normal and the patient was in the best possible spirits. There was no albumin. He was, however, ordered to resume the fluid diet and was carefully kept in bed.

On the 7th, after a good night, the patient became disturbed and feverish (the temperature being 103° F.), but he made no special complaint beyond a feeling of pain in the back and the lower extremities. I found, however, slight effusion into the right knee-joint. On the 8th, whilst generally examining the patient, I found a circular patch of extravasated blood on the left side just above the crest of the ilium. This was at first reddish but rapidly turned to purple. The nurse, an experienced one, assured me that this patch was not present a short time prior to my visit. A few hours afterwards the whole of the gluteal region and the inner thigh were found to be covered by an enormous deep purple extravasation quite separate from the first one. Meanwhile the little fellow had not unexpectedly become very weak and showed signs of speedy collapse, which was combated by injections of strychnine and the administration of oxygen. Ergotin was also injected. Before long, however, a small extravasation appeared on the right side which rapidly assumed very extensive proportions, and, in spite of every effort, death soon supervened, when it was found that the left side from the nipple to the knee—on a line external to the nipple—was occupied by one vast extravasation. There was also a comparatively small one on the arm about the insertion of the deltoid. On the back extravasation extended from the folds of the nates to the lower dorsal vertebræ—a band of clear skin intervening. On the right side extravasation extended from about two inches above the knee (popliteal space) to the crest of the ilium but not invading the front part of the thigh at all. There was only slight albumin in the urine the last day and no blood.

What is the correct definition of such a case? I cannot, after pretty considerable experience, remember anything like it, nor can I find any report of so severe a type of hæmorrhagic complication, nor can my colleague, Dr. Stanley Wellby, who kindly assisted me with the case.

Streatham, S.W.

## NOTE ON A CASE OF STRYCHNINE POISONING.

BY THOMAS LETTIS, M.D. DURH.,
AND
HORACE POTTS, M.R.C.S. ENG., L.R.C.P. LOND.

ON July 24th, 1900, at about 9.30 A.M., I (Dr. Lettis) received a message that a woman had taken some wrong medicine. On arriving at the house a few minutes later I found the patient on the floor in a state of tetanic convulsions and struggling violently. From the nature of the convulsions I came to the conclusion that she was suffering from strychnine poisoning and at once attempted to produce vomiting by administering mustard-and-water; failing in this I returned home for a stomach-pump, calling in at the same time Mr. Potts to help me.

On our return to the house the patient was having an exceedingly severe convulsive attack; respiration had ceased, she had become quite cyanosed, the pulse could not be felt at the wrist, the eyeballs protruded from their sockets, and the tongue was thrust half out.

It appeared to both of us that the patient was dying. Luckily the convulsion relaxed and the tube was passed down to the stomach, and with a funnel attached to the other end her stomach was repeatedly washed out both with warm mustard-and-water and plain warm water. After this had been done an immediate improvement was noted, the convulsions grew gradually slighter and slighter, until by shortly after 11 A.M. she remained quiet unless touched. We agreed to see her in an hour's time (12 noon). Then the patient stated that she was much better but complained of feelings of great giddiness with pains in the loins and numbness of the legs. When about to observe the condition of the pupils, which were somewhat dilated, merely touching the eyebrow produced a considerable amount of twitching of the whole body. Bromide of potassium was now given in small doses. By 4 P.M. the patient had so far recovered as to get up and walk up to her bedroom on another floor.

Twitching continued to a certain degree for 24 hours afterwards, otherwise her recovery was uninterrupted. The patient, a woman 67 years of age, was the widow of a herbalist and she had been in the habit of taking some of her husband's preparations when she thought fit. The substance that she took was a combination of various extracts—the extracts of strychnos Ignatii, valerian, and one or two others of no importance. Her statement was that feeling giddy in the morning she took some of these extracts, thinking they would act as a pick-me-up. She said that she took a little of the first on the end of a knife, mixed it with hot water, and drank it off. She then sat down to her breakfast, taking tea, a little bacon, and bread. She felt sick, endeavoured to vomit without effect, and slipped off her chair on to the floor and the convulsive attacks commenced.

The case seems to be worthy of reporting from two points of view. First, because cases of strychnine poisoning are not very common, and cases which recover are still less so; and secondly, because the drug used—namely, strychnos Ignatii, which is stated to have a greater percentage of strychnine than the strychnos nux vomica—is probably very rarely used in this country.

## A CASE OF DISLOCATION OF THE SHOULDER-JOINT PRODUCED BY MUSCULAR ACTION ALONE.

BY J. GRIMMOND SMITH, M.D. EDIN.,
ASSISTANT MEDICAL OFFICER, LONDON COUNTY ASYLUM, CANE HILL.

THE patient was a man, aged 46 years, and was an inmate of the London County Asylum. His previous history was unknown. His mental condition was as follows. He was a congenital imbecile, was not epileptic, would not converse or only in monosyllables, and was frequently unsettled and excited, when he would rush about, violently waving his arms above his head. As to his physical condition, he was of good muscularity, short in stature (5 feet 4 inches), and his arms were abnormally long (30½ inches), but there was no undue laxness of the muscles.

On Feb. 4th, during an attack of excitement and whilst going through a series of extraordinary movements of his whole body, the arms being extended above and behind the head which was flexed on the chest, he dislocated his right shoulder-joint. On examination the head of the humerus was found in the subcoracoid position. This was reduced with some difficulty and kept at rest for a week. He has had several similar attacks of excitement since the above, but there has been no recurrence of the accident.

The rarity of a dislocation produced in this way leads me to believe that the above record may be of interest to your readers.

Purley, Surrey.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.**

## STRATFORD-ON-AVON HOSPITAL.

### A CASE OF INTUSSUSCEPTION IN AN INFANT 10 MONTHS OLD; LAPAROTOMY; RAPID RECOVERY.

(Under the care of Mr. HARRY LUPTON.)

WE have on many occasions pointed out the advisability of a primary laparotomy in intussusception, and Mr. Lupton's case is a good example of an intussusception which no inflation or injection could have reduced. There are, of course, cases in which an injection may prove effective, but the intussusception must not be above the ileo-cæcal valve and must be recent. It is often not possible, moreover, to be sure that the bowel has been completely reduced and much valuable time may be lost in fruitless efforts to reduce the intussusception by inflation or injection; the depressing effect also of these procedures must diminish in no small degree the chance of the child's recovery. Dr. F. H. Wiggin of New York has shown[1] that 75 per cent. of the cases are not reduced by injection or inflation. Mr. H. S. Collier advocates a

[1] THE LANCET, August 28th, 1897, p. 525.

combined method [2] in which injection is used, and if any intussusception remains a small incision is made over it and the bowel is reduced.

A well-nourished male infant was admitted into the Stratford-on-Avon Hospital at a late hour on July 4th with symptoms of intussusception. He had been seen by a medical man and the case had been so diagnosed. The child was very restless, and writhing after the manner of infants with abdominal pain. An enema had been given, but only a little blood-stained mucus had been passed. An attempt at examination at once threw the abdominal walls into a rigid state, and nothing definite could be made out, except, perhaps, that there was *not* any "sausage-shaped tumour" in the right flank. At a consultation of the staff it was decided to administer chloroform, to make a more complete examination, and, if considered advisable, to proceed at once to operation. Under the anæsthetic there was found complete absence of any swelling or hardness in the right flank, but on the left of the abdomen there was a fairly hard mass, terminating about an inch above and to the inner side of the iliac spine. Under the circumstances, and in view of the symptoms, it was decided to operate at once.

The abdomen was opened in the middle line in the usual manner. The swelling was readily found and it proved to be the descending colon having within it the invaginated ileum. There was some little difficulty in getting the fingers around the bowel down to the cæcum and delivering the whole through the wound, and when done the invaginated portion, at least six inches of it, was found to be very firmly held. It required a great deal of coaxing, pressure on the colon combined with gentle traction on the ileum, to free the small intestine. However, it was at length accomplished and the bowel did not look much the worse; there were no gangrenous patches, separated peritoneum, or tears.

The child was kept without food for the first eight hours when he became so restless that it appeared to be the lesser evil to begin with teaspoonfuls of tepid water and in a few hours more teaspoonfuls of the mother's milk. On the night following the operation it was deemed advisable to give a small dose of bromide and chloral, the restlessness still being great. On the same night flatus and fæces were passed and sleep was obtained. After that it was all plain sailing. The stitches were removed on the eighth day and the mother was allowed to take the child home with the abdominal wound firmly healed on the eleventh day.

*Remarks by* Mr. LUPTON.—This is one more case showing the great advantages of early operation and the uselessness of delay in such cases. Enemata and the time-honoured bellows could by no possibility have had any other effect than the delaying of operation—to the disadvantage of the child.

## ROYAL INFIRMARY, EDINBURGH.

### A CASE OF TRANSPERITONEAL LIGATURE OF THE LEFT COMMON ILIAC ARTERY FOR HÆMORRHAGE FOLLOWING EXPLORATORY INCISION OF A SARCOMA OF THE INNOMINATE BONE.

(Under the care of Mr. H. ALEXIS THOMSON.)

THE value of the transperitoneal ligature of the common iliac artery is strikingly shown in the following cases, for although the large amount of fat which was present increased greatly the difficulty of the operation, the extra-peritoneal operation would have been impossible, as the tumour would have been in the way. A thick abdominal wall and the presence of fat around the artery are obstacles whichever route be adopted. The chief advantages of the transperitoneal method are the slight disturbance of the peritoneum and the avoidance of any interference with the aneurysm or tumour on account of which the operation is required.

A stout woman, aged 54 years, was on March 1st, 1900, admitted into Professor Chiene's wards complaining of pain in the left hip and of difficulty in walking. She had been sent to the infirmary by Dr. M. Stewart of Finstown, Orkney. Her statement was to the effect that 18 months previously she began to suffer from pain in the region of the left hip; the pain had been more severe during the past six months. She had lost flesh rapidly and was only able to hobble about with the assistance of a crutch. Her ailment was regarded and treated as rheumatism, until a swelling appeared in the left buttock. On examination it was found that the gluteal swelling was part of a larger one extending upwards over the iliac crest towards the last rib and projecting also from the iliac fossa; fluctuation was readily elicited in both swellings and from one to the other. Passive movements were quite free at the hip-joint, but she herself was unable to move the limb.

To clear up the diagnosis, which lay between an hour-glass shaped abscess and a soft sarcoma growing from the pelvis, Mr. Thomson made an exploratory incision into the gluteal swelling on March 5th, being ably assisted by Dr. J. M. Reid, the house surgeon. Having pushed the knife through the skin, fat, and glutei muscles and inserted the finger, friable granulation tissue and a spiculated eroded condition of the venter ilii were encountered, so that the finger was easily passed through the latter into the iliac fossa. On withdrawing the finger from the wound blood escaped very freely and continued to do so in spite of very firm packing with sterilised gauze. Mr. Thomson did not think much of it at first, but as time went on it became serious and he decided to ligature the feeding artery without further delay. The internal iliac artery was out of the question as it was very close to, and probably involved in, the growth. To expose the common iliac artery the abdomen was opened in the middle line; an extensive incision was required from the loading of the parietes with fat. The intestines had not been completely emptied and some difficulty was experienced in displacing them; elevation of the foot of the table so that the patient occupied a modified Trendelenburg position greatly facilitated this as well as the subsequent steps of the operation. The parietal peritoneum lining the posterior abdominal wall was then divided in the line of the common iliac artery, but a very thick layer of fat had to be traversed before the pulsation of the vessel could be recognised. The artery desired being on the left side there was no difficulty with the vein. It was tied with ordinary thick catgut, passed by means of a Macewen's hernia needle. The disappearance of pulsation in the left common femoral at the brim afforded confirmation that the desired artery had been satisfactorily obliterated.

The abdominal wound was closed, the left lower extremity was wrapped up in cotton-wool, and the foot of the bed was elevated. The peculiar restlessness of the patient necessitated her being kept slightly under the influence of morphine. The bladder had to be emptied by the catheter. So far as the ligature of the artery was concerned her progress was quite satisfactory; the corresponding lower extremity retained its warmth from the first. She complained of cramps and of complete loss of power in the limb. The wound in the buttock never bled, but it was still discharging pus when she left the hospital two months later.

Three months after the operation her medical attendant wrote that her strength was holding out well, but that the tumour was increasing in size. There was no return of pulsation in the femoral artery.

*Remarks by* Mr. THOMSON.—All those who have practised the transperitoneal ligature of one or other of the iliac vessels refer to the ease and simplicity of the operation. When Professor Annandale tied the internal iliac artery for gluteal hæmorrhage I had the privilege of assisting him and the vessel was certainly exposed with ease and rapidity. In the case above recorded there was considerable difficulty on account of the quantity of fat in the abdomen and especially behind the peritoneum. While the transperitoneal operation is a great advance on older methods it should be pointed out that it is not quite the simple procedure it is described to be when the patient is above middle life and the abdomen is loaded with fat. The Trendelenburg position is a great advantage.

[2] THE LANCET, August 26th, 1899, p. 561.

NEW ASYLUM NEAR ABERDEEN.—The plans for this institution, to be erected by the Aberdeen City Parish Council at Kingseat, Newmachar, about 10 miles from the city, have now been completed by the architect, Mr. A. M. Mackenzie, Aberdeen, and have been approved by the Lunacy Board for Scotland. The asylum will be on the village plan, following the model of that at Alt Herbitz, Prussian Saxony, and it is estimated that the total cost of the scheme may amount to £100,000. The hospital will accommodate 700 patients and the administration block will be in three storeys. Altogether the buildings will cover a large area.

# Reviews and Notices of Books.

*Tuberculosis: its Nature, Prevention, and Treatment.* By ALFRED HILLIER, B.A., M.D., C.M. Edin. Illustrated. London: Cassell and Co. 1900. Pp. 243. Price 7*s.* 6*d.*

TUBERCULOSIS offers many aspects for study. These have been considered under different headings and in many different volumes, but in the work now before us Dr. Hillier has dealt with all the varieties of tuberculosis affecting the several parts of the body, but pulmonary tuberculosis naturally occupies the chief place.

The clinical forms of tuberculosis are well described, Dr. Osler's able and scientific classification being adopted. The part played by micro-organisms other than that of tubercle—notably, the streptococcus and staphylococcus pyogenes aureus—in the stages of softening and cavity formation is commented on at length, and in support of the very strong views of Koch, that the pyrexia in pulmonary tuberculosis is due to the toxic products of these septic micrococci, Dr. Hillier points out that lesions which are purely tuberculous in character even when completely broken down, but to which no septic cocci have found entrance, produce little or no pyrexia. The various forms of so-called "cold abscess" with which tuberculous disease is associated are further instances corroborating Koch's views.

Dr. Hillier's description of the symptoms and physical signs of pulmonary tuberculosis is exceedingly well written, but we think he has been a little unfortunate in his account of the "Establishment of the Disease" and his remarks lay themselves open to misconception. For instance, the following is very liable to be misunderstood coming under this head: "A slight attack of hæmoptysis in an apparently healthy and robust individual may be the only cause of his seeking medical advice. Development of other clinical signs may follow rapidly or be considerably delayed." From this statement the reader might well conclude that the hæmoptysis started the tuberculous trouble, but this is by no means Dr. Hillier's opinion, for he explains two pages afterwards that in regard to "'precursory hæmorrhages' ..... there is little doubt that in the great majority of cases the disease is in existence at the time of the hæmorrhage." This is the view now adopted by nearly all observers.

Dr. Hillier's comments on heredity and communicability of pulmonary tuberculosis are also most interesting, and he strongly supports those authorities who maintain that the influence of the latter far outstrips that of the former. The statistics in favour of the hereditary character of the disease are very misleading, and, as the author remarks, "the demands which scientific criticism is entitled to make of statistics are in no way satisfied by such data as these."

The part of the work dealing with the treatment of pulmonary tuberculosis is, however, the most instructive; especial reference is, of course, made to the "open-air treatment." Dr. Hillier's experiences in South Africa entitle him to speak with authority. He discusses in an able manner the beneficial and curative effect of pure air on the patient suffering for pulmonary tuberculosis from a theoretical as well as from a practical point of view and quotes the arguments of Daremberg, Reiset, Brown-Séquard, d'Arsonval, and others in favour of the scientific basis for the open-air treatment.

We would especially draw attention to the remarks on the effects of wind, rain, and fog. Dr. Hillier wisely sets importance on the distinction between open-air and exposure, which seems to be ignored by the most ardent advocates of the sanatoria method of treatment. The Nordrach *régime* is fully described, and numerous illustrations give a good idea of the buildings, rooms, and shelters to be found at the various establishments now open.

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*Manuel de Gynécologie, Médicale et Chirurgicale.* (*Manual of Gynæcology, Medical and Surgical.*) By A. LUTAUD. Fourth edition. With 607 Illustrations. 8vo. Paris: A. Maloine. 1900. Pp. 700.

AS the author remarks in his preface anyone who compares the first edition of this book, which appeared in 1883, with this the fourth edition cannot fail to be struck with the development which it has undergone. In no other department of medicine perhaps would a text-book 17 years old be so completely out of date as in gynæcology. In those days gynæcologists were still physicians, at the present time they are to a very great degree surgeons, a change which has quite recently been recognised by the formation of a new appointment at one of the large London hospitals—viz., that of obstetric surgeon. Professor Lutaud has certainly not failed to advance with the times. We are not in a position to say what was the exact character of the first edition of this book, but as to the surgical tendency of the present edition there can be no doubt. When we remark that the author says he has preserved what he could of rational medical treatment, and when we note the large part of the book devoted to the description of various surgical procedures, we are more than ever impressed with the fact that medical gynæcology would appear to be rapidly becoming obsolete. The work, a manual of some 700 pages, is divided into eight parts. The first part treats of the anatomy, physiology, teratology, and malformations of the genital organs, matters about which little or no difference of opinion exists and which are adequately described. The various methods of examination and exploration are described in the second part. For specular examinations the author prefers one or other of the forms of bivalve speculum, such as that of Cusco. Vulliet's method of dilatation of the cervix is recommended. This consists in preliminary dilatation of the cervical canal with steel sounds followed by the introduction of tampons of iodoform gauze which are left in place for 48 hours and the number of which is gradually increased. In this way, in a time varying from nine or 10 days to five weeks, complete dilatation of the cervix can be obtained. The method is an efficient one but too slow for general use. A solution of creosote in glycerine is employed by the author for applying to the cervix after curettage. Pelvic massage is shortly described and recommended for various pelvic conditions. The statement is made that the bacillus of Koch has been found in the secretions in cases of esthiomène, but no authority for the statement is given. There is no description of tubercular disease of the vulva and it is not clear whether the author regards esthiomène as identical with this condition or not. Heredity is regarded as being a factor in the development of excessive hypertrophy of the labia minora, and Scanzoni's case of a woman and her three daughters who all presented this deformity is quoted. In the treatment of vaginismus Professor Lutaud recommends splitting the recto-vaginal septum, exposure of the sphincter vaginæ muscle, and its subcutaneous division followed by stretching.

For the purpose of influencing the endometrium in cases of chronic metritis the use of sponge tents is advocated. The tents, kept in an alcoholic solution of perchloride of mercury or naphthol, are introduced into the uterus and left in for from six to eight hours. On removal the uterus is irrigated. In cases where this method of treatment alone does not cure the tents are soaked in a solution of salicylic acid and alcohol and re-introduced. Guinard's novel method of treating inoperable cases of carcinoma of the cervix is described—viz., the introduction of a piece of carbide of calcium into the vagina, the acetylene gas set free being supposed to act upon

the growth. Professor Lutaud summarises the very important communication read by Ricard to the French Congress of Surgery, 1899, in which the advantages of the abdominal route in dealing with all cases of cancer of the uterus are strongly urged. Even when cancer of the cervix is in its early stages the glands may already be involved, and Ricard considers it the duty of the surgeon to determine with certainty whether this be so or not. This can only be efficiently done if the abdominal operation be performed. We have quoted enough to show that the book is a useful compilation of the main facts of gynæcology. The author is evidently a believer in minor gynæcology, and the description of the various minor operations and forms of treatment are especially fully described. Much of the pathology, especially that relating to uterine displacements, is not in accord with the views held in this country, and many forms of pessary are recommended for use which as far as English practice is concerned are entirely obsolete. The book would have had a greater value had the author expressed a more decided opinion upon many of the methods of treatment and operations which he describes and had he given us more fully the results of his own experience. The illustrations are numerous but of poor artistic merit.

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*Tropical Diseases: A Manual of the Diseases of Warm Climates.* By PATRICK MANSON, C.M.G., M.D., LL.D. Aberd., F.R.C.P. Lond., F.R.S., &c. With 114 Illustrations and two Coloured Plates. Revised and enlarged edition. London, Paris, New York, and Melbourne: Cassell and Co., Limited. 1900. Price 10*s.* 6*d.*

THE first edition of this work was published in 1898 when it was reviewed in our columns.[1] During the relatively short time which has intervened between that and the present date, owing to the keen way in which the study of tropical diseases has been pursued, the progress made has been such that the need has been felt for the appearance of a revised and enlarged edition of Dr. Manson's work. The merits of this manual have been so generally recognised that we are not now called upon to dwell upon them or to make any fresh journey over the ground previously traversed by its author in 1898. It will suffice on the present occasion to say that the new edition has not only been enlarged by the addition of fresh matter but that its pages bear the marks of having been very carefully revised. To begin with the most obvious change, the volume has grown from 607 to 684 pages and contains 114 illustrations in place of 88, which was formerly the number (two coloured plates being common to both editions).

The numerous investigations which have been, and are still being, so keenly pursued into all that is comprised in the term "malaria" make up a most interesting chapter in the medical history of our time. The subject affords an excellent illustration of a point upon which Dr. Pye-Smith dwelt in his address in medicine at the annual meeting of the British Medical Association at Ipswich on "Medicine as a Science and Medicine as an Art"—namely, that medical art without science is not only unprogressive, but almost inevitably becomes quackery. For the diagnosis of malaria the practitioner in tropical countries needs to have recourse to the microscope and to know how to apply this test as much as the practitioner in this climate requires to use the stethoscope in his ordinary practice. But this is only to take one and a very limited though practical view of the subject. The researches in connexion with the malarial parasite have been conducted with a patient, refined, and subtle skill, and have led to views and conclusions which would probably a few years ago have been put down to an exercise of the scientific imagination. Some of the conclusions, however, are capable of verification and can be demonstrated as facts, while others are probable or merely tentative and conjectural but very suggestive nevertheless, and requiring further investigation. Anyway, the method that has been adopted throughout is a strictly inductive one—that of tracking the dependence of one event upon another in logical sequence. Those of our readers who have already heard, or read in THE LANCET,[2] Dr. Patrick Manson's two clinical lectures on Malaria and the Malarial Parasite delivered at the Medical Graduates' College and Polyclinic are in a good position to know how the matter stands at the present time. In addition to the section devoted to the consideration of the fevers met with in tropical and sub-tropical climates we have been more especially interested by the chapters on Beri-beri, Hill Diarrhœa, and Sprue, and by those on Filariasis and Leprosy. We may parenthetically call attention, in regard to the last-named disease, to a paper by Professor Sticker of Giessen, who was one of the German Plague Commission in India. Professor Sticker's inquiry goes to show that the nose is peculiarly the seat of leprosy. The lesion in the nose, which generally contains and discharges large numbers of bacilli, is, he says, the single constant change in all cases of leprosy in every form and stage of the disease.

We have no hesitation in saying that this revised and enlarged edition of Dr. Patrick Manson's manual is an excellent guide-book to the study of tropical diseases. It is written in a clear style and in a scientific spirit and is brought up to date; the descriptions of disease are good and well illustrated and—to mention a small but important matter for facility of reference—the book is supplied with a good index.

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## THE ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on Tuesday, August 7th, Dr. J. ANDREW, the President, being in the chair.

The PRESIDENT referred to the death of H.R.H. the Duke of Edinburgh and read the following telegrams which had passed between him and Sir A. Bigge:—

Please convey to Her Majesty the Queen the respectful and sincere sympathy of the President and Fellows of the Royal College of Physicians of Edinburgh on the occasion of the death of His Royal Highness Alfred Duke of Saxe-Coburg and Gotha, Duke of Edinburgh.

The President, Royal College of Physicians of Edinburgh.—The Queen desires me to convey to the President and Fellows her thanks for their kind message of sympathy.—A. BIGGE.

The SECRETARY laid on the table the annual statement by the governing board of the School of Medicine of the Royal Colleges in terms of the constitution. The statement showed that the classes of the school have been largely attended and that the management and discipline have been satisfactory. The College elected Dr. J. Andrew (President), Sir John Batty Tuke (Vice-President), Professor A. R. Simpson, Dr. P. A. Young, and Sir John Sibbald to be representatives of the College on the governing board of the School of Medicine of the Royal Colleges. Dr. Andrew was appointed by the council representative of the College on the conjoint committee of management of the triple qualification in room of Dr. J. Wyllie, resigned. Dr. G. W. Balfour was appointed Morison Lecturer for the year 1900-1901.

On a letter from the Town Clerk of Edinburgh the College agreed to express its willingness to enter into an arrangement with the Magistrates and Town Council for the bacteriological examination of suspected food-stuffs, &c., in respect of diphtheria and typhoid fever on the understanding that the proposed facilities should be made equally available to all classes of citizens.

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[1] Vide THE LANCET, June 18th, 1898, p. 1694.

[2] THE LANCET, May 19th (p. 1417) and July 21st (p. 153), 1900.

# THE LANCET.

*LONDON: SATURDAY, AUGUST 18, 1900.*

OUR profession is not militantly political. But it is one that cannot be neglected by politicians with impunity, for it deals with human interests and social and sanitary conditions that affect greatly the welfare of the nation. Moreover, it has the political influence belonging to men of general and special education who have chiefly themselves to blame if this influence is not considerable. We do not pretend to say to which side the political bias of the medical profession leans, but it is safe to allege that if it is largely conservative in its respect for good precedents it has that admixture of progressiveness which comes from contact with the revelations of ever-advancing science. If the medical profession is estranged from the Government in any degree more than it was when they came into office, it is only because the Government have not acted up to the measure of their own strength. On two or three subjects they have deeply disappointed all medical opinion. On the vaccination question they yielded feebly, and they have since broken a promise to bring in legislation requiring revaccination. The action of Mr. RITCHIE in the matter of the Companies Bill was again very unsatisfactory. To lose the opportunity of altering the law which the Companies Bill offered so as to prevent any lay amalgamations from being used for covering unqualified practitioners in medicine was, we think, a piece of political cowardice. The medical profession is not likely soon to forgive this betrayal of its interests and the interests of the public. Mr. RITCHIE did more than lose the opportunity. He was active in his opposition and went out of his way to use the influence of the Government against the much-needed clauses, with the easy suggestion that a more convenient season would come for new legislation to prevent laymen from practising medicine. He should have known that the most convenient season for such legislation is the earliest. To give another instance of the way in which the Government have shown weakness and timidity we need only note their attitude towards proposed legislation for abating the drunkenness of the nation. In France and Russia grave efforts in this direction are being made; but all such efforts in this country, however modest or inadequate, have been met by the Government with discouragement and sometimes with cynicism.

The midwives question was dealt with in an unsatisfactory way by the Government. It should either have been taken up as a Government question and dealt with seriously and responsibly upon the definite principles formulated by the General Medical Council and the British Medical Association, or it should have been left alone. Neither course was pursued. A private Bill which contained some objectionable provisions, passed the second reading and emerged unchanged from the Standing Committee on Law. The Government had the opinion of the General Medical Council before them and knew the views of the medical profession upon the question, yet there were some indications in the late session that had this Bill been proceeded with they would, under political pressure, have made it their own. This would have been an unpardonable breach of faith. It must be clear to the Government that the assent of the profession to such legislation is strictly conditional, the condition being that the new measure shall put an end to the race of Gamps whose ignorance and uncleanness introduce terrible risks into even the most straightforward cases of labour. We should be glad to be convinced that in this matter we are wrong in doubting the good faith of the Government, but previous experiences cause us grave misgivings. It savours of deception for the Government at the outset to ascertain the views of the General Medical Council and to seem to adopt them, if at the last they intend to disregard those views. Again, a much needed measure to amend the lunacy laws, after a successful passage through the House of Lords, failed to get into the statute book, while a Bill to improve the position of medical officers of health and sanitary inspectors met a like fate through want of help from the Government.

Lastly, a Bill in passing which there should have been no difficulty—the Medical Acts Amendment Bill—was withdrawn. This was a very simple measure for making more clear and definite the power of the General Medical Council to remove from, and restore to, the Register the names of practitioners guilty of professional misconduct. We recognise that the Government had no other intention than to pass the Bill in the form suggested by the General Medical Council and virtually approved by all the universities and licensing bodies granting medical qualifications. But its postponement to the very end of the session placed it at the mercy of any unreasonable member and, though non-contentious, it had to be withdrawn. Such ineffective handling of measures of great importance, such weak support of principles which should be strongly asserted in regard to legislation affecting health and life, are very disappointing in a Government with a great following and deserve the serious condemnation of the medical profession. It is by no means clear that if the Government were to be defeated at the polls we should fare any better at the hands of any other possible Government, but it would not be easy to fare worse. It is painful to us to write in such tones of complaint and suspicion of a Government who have in some ways earned the lasting gratitude of the nation. But with every readiness to make allowance for unprecedented obstacles and anxieties we cannot excuse the complete want of consideration which has been persistently extended by the Government to the views of a highly educated and liberal-minded profession.

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WE recently published[1] the Ingleby Lectures delivered at the Mason University College, Birmingham, by Dr. O. J. KAUFFMANN. The subject selected was "The Commoner Neuroses of Childhood, their Pathology and Treatment." Dr. KAUFFMANN was happy in the choice of a theme and his remarks will be read with great interest. The group of

[1] THE LANCET, June 30th (p. 1859) and July 14th, 1900 (p. 75).

maladies known as "functional nervous disorders" contains ailments of daily occurrence causing much distress to the little sufferers and much anxiety to their friends and parents. We agree with the lecturer that much is still to be learnt regarding the nature and causation of these neuroses and much in regard to their correct and complete diagnosis, and that something still remains to be done in the way of treating them successfully, to which end a true appreciation of their nature is the first essential step.

The disorders considered by Dr. KAUFFMANN are—chorea, saltatory or salaam spasm, tetany, night-terrors and dreaming, nocturnal enuresis, migraine and allied conditions, and epilepsy. Dissimilar though these diseases may at first sight appear yet they have several points in common. They occur with greatest frequency in childhood, some, as chorea and nocturnal enuresis, being almost limited to that period of life, at any rate as regards their onset; further, they are more frequent in the female sex, and where this appears not to hold true entirely, as in migraine and epilepsy, it is nevertheless a fact that females are more disposed to be the sufferers during the time of adolescence. In the course of the lectures it was demonstrated that these neuroses have still more points in common, particularly in the matter of causation. There seem to be two main groups of causes, the one being classed as "emotional," the other as being due to toxic conditions, hereditary predisposition having an important influence on each. The toxæmic element would appear to be more effective than the emotional in all these maladies excepting saltatory spasm. This is a point which hitherto has not been clearly established, but Dr. KAUFFMANN'S observations have been carried out in a thorough manner and his arguments tend to carry conviction. Several elements tend to produce the gastro-intestinal disturbances giving rise to toxæmia. Over-eating has a great effect in setting up disorder of the alimentary canal. The lecturer explained its action by contending that normally the glands which produce the digestive juices secrete them in quantities which are capable of dealing with a certain volume of food. Habitual excess of food or too frequent meals will, no doubt, stimulate the glands to yield a proportionate increase of their secretion for the time being, but such an over-strain, if long continued, is apt to end in glandular inadequacy and consequent incomplete digestion. The incomplete digestive products may be absorbed or, in the absence of a sufficient amount of the digestive fluids, bacterial decomposition of the intestinal contents takes place and the products of the same are taken up by the blood-vessels and lacteals. Food unsuitable either to the age of the patient or to his individual digestive capacity is likewise often the cause of those gastro-intestinal conditions which are found associated with the neuroses. Reference is made to the fact, generally known and accepted, that an excess of meat—and probably the same would hold good of excess of any other proteid material—is apt to be associated with dreamings, enuresis nocturna, and epilepsy. The most common predisposing cause of all the neuroses above enumerated is, in Dr. KAUFFMANN'S opinion, constipation, arising from catarrh of the intestine or faulty diet, or proceeding from mere habit and encouraged by neglect. The resulting effect is produced partly by the delayed elimination of fæcal matter, which therefore has a chance of being re-absorbed by the intestine, and partly by the encouragement which it is known that bacterial growth within the intestine receives when the fæces are retained. In obtaining a history of habitual constipation the statements of the patient's friends cannot altogether be relied upon and the child should be placed under skilled observation. The detection of indican in the urine will be of great assistance to the physician. Indol and skatol are formed in the intestines by the action of bacteria on proteids; they are partly excreted by the bowels and partly by the kidneys. Before appearing in the urine they are oxidised into indoxyl and skatoxyl, and are then conjugated with sulphuric acid, indoxyl sulphuric acid being known as indican. A very little indican is commonly present even in the urines of healthy persons, but a considerable excess of the same is always accompanied by disturbed general health. Dr. KAUFFMANN maintains, therefore, that excess of indican in the urine is always associated with toxæmia and that this toxæmia arises (with rare exceptions, in which the source is decomposing pus) from the intestinal canal. He further suggests that indol itself may possibly be toxic, in view of its origin through bacterial action and of the fact that it is unlikely to be a nutrient substance, for all the familiar organic food-stuffs contain oxygen, and indol is deficient in this element. He further points out that excepting the sign of indicanuria we have no chemical test which proves that auto-intoxication from the alimentary canal is in progress.

Accepting the views just set forth, the principles affecting the treatment of the neuroses of childhood must be in a great measure dietetic. In the majority of cases in which the feeding is at fault it is advisable to reduce the amount of meat which the child consumes. Meat once a day is nearly always sufficient. In most cases the action of the bowels also requires attention, since the prevention of an auto-intoxication from the intestine depends chiefly on regular and sufficient defecation. The so-called "intestinal antiseptics" naturally suggest themselves as adjuvants in preventing bacterial action in the bowels. Dr. KAUFFMANN states that he has tried many of them, but he cannot say that any one of them can be relied upon to remove the trouble entirely and in all cases. He has found greatest success with carbolate of soda and charcoal. This experience will probably tally with that of most physicians. Salol, β naphthol, and creasote sometimes produce admirable results, but in some cases but little good effect is seen. In addition to the general treatment thus indicated special measures are required in the various forms of the neuroses. We especially notice the remarks on the treatment of chorea—seclusion, darkness, and quiet may have to be insisted on, but the principal drug that should be given is arsenic in doses of about 15 minims of Fowler's solution twice or three times daily, as advised by Dr. MURRAY. The success of this method contrasts most favourably with that attained by arsenic in small doses and is much more quickly obtained.

There are many matters discussed in Dr. KAUFFMANN'S lectures which are of the greatest importance in actual practice, and but few controversial points are touched

upon. This by no means detracts from the general value of the lectures. The experiences of physicians who have given special attention to certain forms of disease are always valuable, and we may conclude by quoting the words used by Dr. PYE-SMITH in his address on Medicine recently delivered at Ipswich: "We must never allow theories, or even what appear to be logical deductions, or explanations however ingenious, or statistics however apparently conclusive, or authority however venerable, to take the place of the one touchstone of practical medicine—experience."

WE publish on page 551 a full report of the extraordinary meeting of the governors and subscribers of the National Hospital for the Paralysed and Epileptic, held on Saturday last. This meeting was convened for the following two purposes:—(1) to decide as to the advisability of admitting members of the medical staff of the hospital to the board of management of the hospital; and (2) to decide as to the necessity for holding an investigation into the domestic management of the institution, which has been recently impeached by the medical staff. Only 16 persons were present at the meeting, a fact which in itself prevents the one conclusion that was come to by the meeting—i.e., that no further investigation was necessary—being considered final. The meeting, however, was of considerable importance to the institution, to the medical profession, and to the public at large, and we publish the proceedings in full because it is certain that the words of some of the speakers will be made the subject of much comment when all the matters at issue between the board of management and the medical staff are fully gone into—as it appears inevitable, as well as most advisable, that they should be.

Mr. GEORGE W. E. RUSSELL, who took the chair, opened a long and neatly-worded address by dealing with the question of the advisability of holding an inquiry into the domestic side of the management of the hospital. He gave as his reason for thinking this to be quite unnecessary that a special sub-committee of the board of management had already conducted such an investigation, adding that he himself was active in visiting the wards and solicitous about the welfare of the patients within and without the hospital. Not one word that Mr. GEORGE RUSSELL said in this connexion had the slightest practical value. We are not belittling his enthusiasm or his philanthropy and we are not suggesting that he and his colleagues on the special sub-committee, Sir GERALD FITZGERALD, K.C.M.G., and Mr. JOHN PEARMAN, are not perfectly capable of conducting an investigation into the domestic management of a hospital from a lay point of view; but (and it is a large but) a special sub-committee appointed by the board of management is not the proper body to test and report on the matter, for the board is itself the accused party and cannot seriously constitute itself its own judge. Possibly this point presented itself to the minds of Mr. GEORGE RUSSELL and of his colleagues on the board, because it would seem that the board does not absolutely refuse to consider a further investigation into the domestic affairs of the hospital. It holds such investigation to be unnecessary, yet it will not oppose it if the governors think it advisable. But on the question of admitting medical men to the board of management it is solid in an uncompromising refusal. The wherefore of this attitude can be read in Mr. GEORGE RUSSELL'S speech at some length, the most important reason to his mind seeming to be that it might be the duty of the board to sit in judgment upon certain members of the staff. This is a most unfortunate argument for a board to use which has just concluded that it is itself competent to decide on its own alleged shortcomings, and surely Mr. GEORGE RUSSELL must have forgotten that the medical staff do not ask to swamp the board of management but only to be represented upon it. The board would thus be a mixed tribunal, as it should be, for the work of a hospital has its medical side and its lay side, and whereas it is equally human for the medical man and the layman to err, any tribunal made up exclusively of one party or the other might find itself in the position of its own judge. The patients, who by Mr. GEORGE RUSSELL are imagined as complaining of the medical staff, might with equal possibility complain of the secretary, of the food, of the nurses, of the bed-linen, or even (with an ingratitude which we hesitate to suggest) of the irksome nature of Mr. GEORGE RUSSELL'S visits. Mr. GEORGE RUSSELL cannot be blind to the fact that there are two sides to the work of a hospital, but he holds that all the authority should be vested in laymen, for medical men, especially those who have studied in special directions, are, in his opinion, unable to appreciate the details of the domestic management of the sick, and equally unable to master the meanings concealed under the phraseology of the Lunacy Acts and of the rules of the constitution of the charity to which they give their best work. Such limited persons as Mr. GEORGE RUSSELL'S imaginary medical staff should obviously have no authority or discretion vested in them, hence if they have anything to say to the board of management they will find in the secretary-director the most obvious channel for such communications. Mr. GEORGE RUSSELL must be contradicted flatly. The physician or surgeon who cannot understand English and who knows nothing of the nursing or feeding of his patients is a figment of Mr. GEORGE RUSSELL'S brain. The medical staff of the National Hospital for the Paralysed and Epileptic are capable citizens as well as distinguished neurologists. The secretary-director is the salaried servant of the hospital, and it is not right that he should be the only, or even the principal, medium between them and the board of management. The medical staff have the right to know that what they say and what they wish, exactly as they say it and wish it, reaches the ears of the board of management. There must be no suspicion that only such matters as are deemed by a salaried official to be worth the attention of the board are laid before the board. Everything that the medical staff have to say must be heard, and they must be the judges of whether it is worth hearing. The obviously easy way in which this can be managed is for the board to include representatives of the medical staff. A board that fears the presence at its counsels of representatives of the medical staff, lest they should become the predominating partners, must be conscious of weakness, and therefore peculiarly open to the influence of a strong secretary-director. This excellent point was made at the meeting by

Mr. MELVILLE GREEN, the only governor present who dissented in words from the board's decision to exclude absolutely the medical staff from seats at the board.

There is one other subject upon which we wish to touch. Mr. GEORGE RUSSELL, who made an excellent and impartial chairman, is an anti-vivisectionist and hinted discreetly at views which may make it impossible for him to regard with equanimity the presence upon the board of management of the National Hospital for the Paralysed and Epileptic of persons who are directly antagonistic to these views. He believes that his views are far commoner than they are, and he attributes to the working men of this country a horror of hospitals which clearly does not exist. As Sir HENRY BURDETT pointed out at this meeting, there are at the present time many thousand more hospital beds than there were before the question of vivisection was dealt with in its present ignorant and sensational manner, and for these thousands of beds there are tens of thousands of claimants. In every large town in the kingdom the question of hospital abuse is an acute one and the need for hospital accommodation is equally acute. What sort of widespread horror of hospital accommodation is it that drives these myriads of persons to consult hospitals when in many instances —too many it is to be feared—they possess the means of consulting private practitioners?

# Annotations.

"Ne quid nimis."

## THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

BY the time that the Paris International Exhibition of 1900 closes no less than 127 International Congresses will have been held in connexion with it. Of these the most important from our point of view is, of course, the International Congress of Medicine. But in some ways the Congress of Hygiene and Demography is of equal importance; nay, possibly, it looks upon disease from an even higher plane, for its ultimate aim may be summed up in the aphorism, "Prevention is better than cure." It is utopian to expect that disease will ever be finally done away with in this life. Accidents, the stress of modern conditions of life, the artificial circumstances due to the "*fumum et opes strepitumque Romæ*" amid which so many of us live and work, and, not least, over-indulgence in eating and drinking, will all continue to produce their bounden effects, and to offer a wide field for the skill of the physician and surgeon. But when we consider what and how much hygiene and sanitation have already achieved we may well take heart and hope that at no very distant time diphtheria and scarlet fever may become as rare as typhus fever is at the present day. That is why we hope that the labours of the Congress of Hygiene just concluded may in the future meet with the success which they deserve. The subjects with which the Congress dealt were divided into eight sections. First on the list stood bacteriology, a science which has of late years made enormous advances and a thorough understanding of which is a necessary part of the foundations of preventive medicine. We need only refer to the three diseases diphtheria, typhoid fever, and tuberculosis as illustrations of this fact. Following upon—and we may say interdependent with—the first section came those of food-supply and sanitary engineering. The next section, that devoted to childhood, dealt with a matter that affects not only ourselves but generations yet to come. The children of the present will be the fathers and mothers of the future, and if that future is to produce a healthy race the children of the present must not only be reared under healthy conditions so as to become sound parents, but must also be instructed and trained in those principles of wholesome living which they will in after years have to apply to their own children. The section allotted to consider the questions of industrial hygiene and of unwholesome dwellings had no less important matters to discuss, for in great cities the problem of housing the workers is one of vast moment from every point of view. In our own country, the prosperity of which depends so much upon commerce and manufactures, the health of the workers is of vital importance not only on account of considerations of justice and humanity but also as perhaps the most valuable national asset. Other sections dealt with naval, military, and colonial hygiene, international sanitary measures, and the hygiene of means of intercommunication such as ships, railways, and tramcars. Thus it will be seen that the Tenth International Congress of Hygiene and Demography provided a programme involving momentous issues. Intercommunication among the nations is now so easy and so complicated that the effects of disease or gross disregard of the laws of hygiene occurring in one country are felt in some way or other almost throughout the civilised globe. For this reason it is fitting that experts in hygiene from all countries should meet and discuss such questions as are set out above, and we bid the just concluded Congress a very hearty farewell.

## A CONTINENTAL SYSTEM OF BATHS AT SHANKLIN.

WITHIN an easy stone's throw of the sea there has recently been constructed at Shanklin, Isle of Wight, a series of baths identical in principle with those employed at the large spas on the Continent, such as at Schwalbach (Nassau) and elsewhere. Shanklin has long been known to possess a spring containing as its chief constituent iron in the unoxidised form of protocarbonate. The water flows from an aperture at the foot of the cliff into tanks which are the property of the Royal Spa Hotel Company, who have recently completed all the necessary arrangements for the supply of the water both for drinking and bathing purposes. The baths themselves were made in Homburg and the heating is conducted by a system of approved steam coils identical with the continental fashion. This heating is so arranged that during the process the water undergoes no change in regard to its saline constituents and especially in regard to its chalybeate properties. During this process, however, there is a considerable evolution of gas. This interesting installation provides also dee baths lined with marble adapted for special purposes of immersion into which salt water or fresh water, heated or unheated, may be discharged. The deep baths are modelled on the lines of those used at our leading bath resorts such as Bath and Harrogate. In short, the equipment, though it is at present not on a very large scale, leaves little to be desired so well has it been designed and constructed, and due regard further has been paid to sanitary requirements and to the comfort and convenience of patients. The installation includes also Russian baths, vapour baths, needle, and local spray baths. The enterprise is certainly worthy of all encouragement and it is the first example of its kind in this country in which the continental system of applying an unstable ferruginous water for treatment in baths has been adopted. On account of this originality of enterprise we intend shortly to give a further description of this interesting installation of ferruginous baths at Shanklin and at the same

time we propose to publish the results of a series of complete analyses of this true chalybeate water made in THE LANCET Laboratory as well as the results of analyses obtained on the spot. Since the iron is readily oxidised on exposure of the water to air the analysis of the water in regard to iron was made on the spot, with samples taken directly from the outlet. On August 14th an inaugural gathering was held at which the baths were declared open to the general public as well as to the guests of the hotel. There were a good many visitors present amongst whom were several well-known medical men and representatives of the press.

## PLAGUE IN HAMBURG.

THE discovery of a case of plague on board a vessel in the port of Hamburg, as briefly mentioned by our Berlin correspondent on page 550 of our present issue, serves to show the great responsibility connected with the duties of medical officers who have to inspect shipping. Only meagre details of the case have been published, but the significance of such an event in Hamburg, a city of some 600,000 inhabitants and the most frequented seaport of continental Europe, is no doubt very great. The patient was a steward on board the ss. *Rosario* which arrived at Hamburg on July 30th. He was at first supposed to be suffering from typhus fever, but on August 4th plague was suspected and this diagnosis was confirmed by the usual tests. Death occurred on August 10th. Every precaution has, of course, been taken to prevent any extension of the disease, and the possibility of localising an outbreak was fully shown in Vienna in 1898, as described in THE LANCET[1] in that year. Our Berlin correspondent, telegraphing on August 16th, stated that no other case of plague had up to that time occurred in Hamburg.

## "WHERE WE GET OUR BEST MEN."

THE author of a pamphlet bearing the above title has recently compiled from materials to be found in obituary notices, in "Men of the Reign," "Men of the Time," and "Who's Who," a list of 3068 "eminent" men belonging to the United Kingdom and to the present reign, 100 of whom he further selects as "pre-eminent," and upon these two lists he has based tables and statistics of some interest with regard to the sources, national, local, parental, and educational, from which our eminent and pre-eminent men are drawn. With possibly wise discretion he omits to print the roll of those whom he has chosen and he admits that in the works of authority that we have mentioned many names are to be found that can hardly be said to belong to eminent persons. That he has probably not been hard-hearted enough in his work of elimination is suggested by the inclusion of no less than 450 names representing literature, but on the whole, from what he tells us of his methods, we may assume, without seeing it, that his list is a fairly complete one if eminence be taken to imply a public rather than a professional reputation for excellence. On a further study of the author's tables and deductions we find that as against the 450 eminent persons with whom literature heads the list, art claims 273, the army 262, the law 244, and medicine 157, while the author gives it as his conclusion that, on the whole, of all the professions the bar and the army offer the greatest, and the medical profession the smallest, chance of success. Success is a term of not very certain meaning, and with regard to the army and the law there are well-marked stages in the military and legal careers at which admission to the pages of "Who's Who" is almost inevitable, while no such stages punctuate the life of the man of science. It might be added that the author tells us that he has placed all judges of the higher tribunals in his list and that if this definition includes all the puisné judges of the High Court of Justice several gentlemen who have neither been eminent in their profession nor even in politics are to be found in it. Of the countries that make up the United Kingdom England has produced the greatest number of eminent men with a total of 1754, as against 445 from Scotland, 254 from Ireland, and 45 from Wales; but when the contributions of the several nationalities are compared with their respective populations it is found that Scotland takes the lead, while Ireland is ousted from the third position by Wales. With regard to parentage the author has traced the fathers of about one-half of his eminent and two-thirds of his pre-eminent men, and excluding the somewhat vaguely defined class which he places under the heading "Aristocrats, Officials, &c.," we find the clergy well at the head of the breeders of eminent and pre-eminent sons, while the medical profession is sixth in each case, begetting 5 per cent. of the eminent and 7 per cent. of the pre-eminent. In another table we find that "professional men, principally medical," have been most often the parents of eminent medical men, a result which is only natural, although in the case of the army "officers" rank second to "aristocrats, officials, &c.," as fathers of eminent soldiers—a conclusion which may possibly point to the influence of interest in high places on the military career. It is a little startling to find that the public schools, of which the nation is justly proud and in which are included large day schools and grammar schools, only turn out 30 per cent. of our eminent men, the author drawing the conclusion that such schools tend to turn out a class of useful men rather than brilliant individuals, while the opinion assigned to the Iron Duke is not borne out when we find that only 8 per cent. of our eminent soldiers have been nurtured in the playing-fields of Eton. Eton, however, has been markedly successful on the whole, particularly in its contributions to "Government," while Oxford has decidedly beaten its larger rival Cambridge. Among isolated statements some will note with a smile that "insanity and poetry (at any rate, 'minor' poetry,) appear to be not unconnected with each other," and that "the few eminent men who developed alcoholic habits were Scotch and were engaged in sedentary pursuits." We were not aware that intoxication had been returned as a favourite "recreation" by any of the eminent gentlemen who have recorded their biographies in "Who's Who." We may add that while the general list of names is omitted a table of the principal contributions by separate families to the general list serves to whet our appetites to know more. That the pamphlet leads us to any definite conclusion can hardly be said, and could hardly have been expected, save, perhaps, what many realised before, that the clergy have often large families and on the whole bring them up well while with a celibate priesthood Great Britain would have lost the services of many of her most useful and brilliant sons.

## THE HYGIENE OF HIGH ALTITUDES.

IT is well known that the chemical composition of the atmosphere differs but little, if at all, wherever the sample be taken, whether it be on the high Alps or at the surface of the sea, the relation of oxygen to nitrogen and other constituents is the same. The favourable effects, therefore, of a change of air are not to be explained by any difference in the proportion of its gaseous constituents. One important difference, however, is the bacteriological one. The air of high altitudes contains no microbes and is, in fact, sterile, whilst near the ground and some 100 feet above it microbes are abundant. In the air of towns and crowded places not only does the microbic impurity

[1] THE LANCET, Oct. 29th, pp. 1143, 1149, 1165, and Nov. 5th, 1898, pp. 1225, 1233.

increase, but other impurities, such as the products of combustion of coal, accrue also. Several investigators have found traces of hydrogen and certain hydrocarbons in the air, and especially in the air of pine, oak, and birch forests. It is to these bodies, doubtless consisting of traces of essential oils, to which the curative effects of certain health resorts are ascribed. Thus the locality of a fir forest is said to give relief in diseases of the respiratory tract. But all the same these traces of essential oils and aromatic products must be counted strictly speaking as impurities since they are not apparently necessary constituents of the air. As recent analyses have shown, these bodies tend to disappear in the air as a higher altitude is reached until they disappear altogether. It would seem, therefore, that microbes, hydrocarbons, and entities other than oxygen and nitrogen, and perhaps we should add argon, are only incidental to the neighbourhood of human industry, animal life, damp, and vegetation.

## THE PUBLIC AND THE PROTECTION OF CHILDREN.

THE work of the National Society for the Prevention of Cruelty to Children is an increasing one. This is not to be taken as a proof that cruelty is itself increasing among our population. It is an evidence and a result of the society's growth and thus it is a proof of its vital energy. By a process resembling the reclamation of land, but far more rapid in its operation, new centres of activity are steadily being opened up and each of these represents a basis for further extension. Moreover, the work is necessitous because it is necessary. That prudent reserve which is the safeguard of ordinary business has only a strictly limited exercise in undertakings like this where the claim of charity is that of duty and is urgent. The society is still young and its maintenance must therefore for some time to come partake largely of a hand-to-mouth character. It has and deserves to have many helpers and among these we are pleased to note recorded in this month's list the names of several donors of legacies. Nevertheless the fact has also been recorded that the present year began with an overdraft of £8000, and it is feared that the burdens imposed on the public purse by the war in South Africa and the Indian famine have caused a serious reduction in the ordinary income of the society. The holiday season, usually barren for purposes not concerned with recreation, has now begun. The financial year, however, is by no means over and we trust that it will not close without some signs of reviving liberality on the part of that great majority of persons who wish well to suffering children. This society does not require our commendation. The respect in which it is held, not only by the public generally but by such competent judges as the magistrates and the police, is sufficient proof that its work is carried on with discretion and efficiency.

THE members of the expedition of the Liverpool School of Tropical Medicine now at Bonny have, it is stated, telegraphed home that they have discovered the filaria in the proboscis of the mosquito. It is some years since Dr. Manson propounded a theory as to the part played by the mosquito in the life cycle of filaria nocturna, the nematode which is the cause of elephantiasis. The mosquito did not, however, in this theory directly convey the worm to the tissues, but the discovery of the Liverpool expedition has now apparently established the fact of direct communication.

A TELEGRAM from the officer administering the Government of Mauritius to Mr. Chamberlain, received at the Colonial Office on August 10th, states that for the week ending August 9th there were six fresh cases of bubonic plague, with three deaths.

THE Colonial Office has also received a telegram from Sir H. A. Blake, Governor of Hong-Kong, dated Monday, August 13th, stating that 29 cases of bubonic plague had occurred during the previous week, with 28 deaths.

AT the last monthly meeting of the Council of Charing-cross Hospital a resolution was unanimously passed recording their unfeigned sorrow at the death of the Duke of Saxe-Coburg and Gotha, who for 21 years was President of the hospital.

DR. ROBERT JOHN COLLIE has been promoted from Honorary Associate to Knight of Grace of the Order of the Hospital of St. John of Jerusalem in England.

VACCINATION AND RELIEF.—At a meeting of the Cardiff Board of Guardians held last week one of the members stated that he considered it an anomaly that parents in good positions should have their children vaccinated at the expense of the parish. The clerk, in reply, said that anyone had a right to have his children vaccinated at the public expense and added that vaccination was not relief.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.—Francis Howard Humphris, M.D. Brux., M.R.C.P. Edin., M.R.C.S. Eng., of Honolulu, was admitted by ballot to the Fellowship of the College.—The following candidates were admitted to the Membership of the College after examination: George Robert Wilson, M.D. Edin., Mavisbank, Midlothian; Wilfrid Glegg, M.D. Edin., Edinburgh; Edwin Bramwell, M.B., C.M. Edin., Edinburgh; Thomas Arthur Ross, M.B., C.M. Edin., Ventnor; William Maule Alexander Smith, M.B., Ch.B. Edin., Mavisbank, Midlothian; and George Crewdson Thomas, M.B., C.M. Edin., London.—The Registrar reported that since last quarterly meeting 70 persons had obtained the licence of the College by examination.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Dr. A. Lazarus has been recognised as *privat-docent* of Internal Medicine, Dr. L. Jacobson as *privat-docent* of Neurology and Psychiatry, and Dr. Pels-Leusden as *privat-docent* of Surgery.—*Chicago (Rush Medical College):* Dr. J. Dodson has been appointed Professor of Pædiatry.—*Genoa:* Dr. F. Badano and Dr. Gerolamo Cuneo have been recognised as *privat-docenten* of Internal Medicine.—*Halle:* Dr. Nebelthau of Marburg has been appointed Extraordinary Professor of Internal Medicine; Dr Schick has been recognised as *privat-docent* of Ophthalmology.—*Heidelberg:* Dr. Biedermann of Jena, who had been invited to fill Professor Kuhne's chair, has declined to migrate; Dr. Andolf Magnus has been recognised as *privat-docent* of Pharmacology.—*Kiel:* Dr. Paul Sick has been recognised as *privat-docent* of Surgery.—*Königsberg:* Dr. Oskar Samter, *privat-docent* of Surgery, has been granted the title of Professor.—*Innsbruck:* Dr. Stefan Bernheimer of Vienna has been appointed Professor of Ophthalmology.—*Lausanne:* Dr. Treyer has been recognised as *privat-docent* of Internal Pathology.—*Leipsic:* Dr. Otto von Strassen, *privat-docent* of Zoology and Comparative Anatomy, has been promoted to an Extraordinary Professorship.—*Marburg:* Dr. Ludwig Bach of Würzburg has been offered the chair of Ophthalmology; Dr. Wendel has been recognised as *privat-docent* of Surgery.—*Naples:* Dr. Arborio Marracino and Dr. Nicola Badaloni have been recognised as *privat-docenten* of Medical Pathology, Dr. Eugenio Curcio as *privat-docent* of Neuro-pathology, and Dr. Guglielmo Cantarano as *privat-docent* of Clinical Medicine.—*Paris:* Dr. Debove, Professor of Medical Pathology, has been permitted to exchange his chair for that of Clinical Medicine.—*Philadelphia (Policlinic):* Dr. J. Thorington has been appointed Professor of Ophthalmology.—*Rostock:* Dr. Ehrich has been recognised as *privat-docent* of Surgery, and Dr. U. Scheven as *privat-docent* of Psychiatry.—*Vienna:* Dr. Al. Kreidl has been promoted to an Extraordinary Professorship of Physiology.

# THE BRITISH MEDICAL ASSOCIATION.

## MEETING AT IPSWICH.

THE members of the Association would fail in their duty if they did not discountenance the habit of self-drugging by the public and we are sure that they will agree with us on this point. Yet this reprehensible practice is to some extent encouraged by the fact that the public are admitted to the exhibition of drugs at the annual meeting. At the meeting held at Ipswich we found that some of the exhibitors were giving away specimens of all kinds of drugs to lay men and women who were assured of such-and-such a powder being a sovereign remedy for sleeplessness, headache, sea-sickness, and so on; and these persons went away with an expression upon their faces implying that they had picked up a good thing, and the number of remedies, usually synthetics, which they carried away was enough to form a druggist's shop in miniature. Emphatically this should be stopped and the Organising Committee might bear these facts in mind on a future occasion.

An excellent demonstration illustrating the recent advances made in the application of the x-ray methods in surgery was given by Mr. Mackenzie Davidson in the lantern room of the Masonic Hall, Soane-street, on Friday, August 3rd. Difficult as it is to demonstrate x-ray phenomena to an audience, Mr. Davidson succeeded in convincing those present of the value of bringing the shadows into relief or of gaining stereoscopic effect for the purpose not only of localising foreign bodies but of making also a diagnosis of any abnormality. The simplest method, perhaps, is to view two photographs in the mirror stereoscope. The results are most instructive. But Mr. Davidson has also devised an apparatus by means of which it is possible to get directly a stereoscopic view of the interior of the human subject or other objects. For this purpose two tubes are used, and by an exceedingly ingenious mechanical arrangement an excellent stereoscopic effect is obtained which enables the operator to place the point of a probe exactly on the foreign body. This was proved by trying a probe upon a bullet hidden in a mass of soft material. It could be distinctly seen whether the needle was in front of or behind the bullet, and thus the exact locality and position of the missile could be found. Needless to say the demonstration was watched with considerable interest.

The museum of pathological exhibits was located in the chemical laboratory of the Ipswich Higher Grade School. It was a large, well-lighted room and was very suitable for the purpose. There was a fairly large number of specimens on view and nearly half of them came from the museum of the Norfolk and Norwich Hospital. They were exhibited by Dr. Sydney H. Long, physician to the hospital. Among the many interesting cases we were naturally (in view of the locality) chiefly attracted by the calculi. There was a good collection of these, and especially worthy of notice was an exceedingly large renal calculus *in situ;* this is unsurpassed by any specimen in any museum with which we are acquainted. The collection of old lithotomy instruments at one time used at the Norfolk and Norwich Hospital was also of great interest. Space does not allow a description of all the specimens from this hospital, but we may mention an excellent specimen of varix of the stomach. Dr. H. H. Brown showed some specimens from the East Suffolk and Ipswich Hospital, amongst which was a good example of a carcinoma of the cæcum. Mr. Strangeways Pigg (London) exhibited a number of specimens from the Pathological Laboratory, Cambridge, and amongst them one showing glanders of the human lung. Miss E. M. Vaughan, M.D. Lond., showed a good series of specimens from the museum of the Royal Free Hospital, London, and of these we may refer specially to a number of preparations showing morbid conditions of the vermiform appendix. Mr. Joseph Griffiths exhibited four specimens from Addenbrooke's Hospital, Cambridge, one of these being an example of an aneurysm in a child aged 10 months, and another of a ruptured aorta in a boy 17 years of age. Dr. Patrick Manson (London) exhibited an excellent series of slides showing the malaria parasite, and another series showing the filaria sanguinis hominis. Mr. T. H. Morse (Norwich) submitted six examples of tubal pregnancy. Altogether the exhibition was fully up to the average, but we are inclined to suggest that it would be a good method to choose for each exhibition one pathological condition, or at the most two, which should be illustrated by the specimens exhibited. If this were done, the annual pathological museum would probably excite even more interest than it does at present. For instance, urinary calculi would have formed a most suitable subject for the Ipswich meeting.

## THE SECTIONS.

### MEDICINE.

FRIDAY, AUGUST 3RD.

*Headaches and other Nervous Symptoms in Relation to Nasal Adenoids.*

Dr. DAVID MCKEOWN (Manchester) read a paper on this subject. The usual explanation of the headaches, he said, and of other nervous symptoms due to this cause was that they were caused by imperfect aeration of the blood which in its turn was caused by the narrowing of the nasal respiratory channel by the encroachment of the post-nasal and pharyngeal growths. Combined buccal and nasal respiration gave plenty of oxygen during the waking hours, but it had been found that during sleep nasal respiration only was employed and even if the mouth were open no buccal respiration took place. To this Dr. McKeown objected, first that the same symptoms often occurred when the growths were clearly too small and few to cause any obstruction to respiration, and submitted these further considerations: that adenoids were only an accentuation of the normal condition of the naso-pharynx; that the symptoms were the same in many cases though the extent of the growths varied greatly; that the capacity of dilatation of the naso-pharynx determined the amount of obstruction and that this varied greatly; and that in any case the amount of adenoid growth rarely if ever prevented an amount of air reaching the lungs physiologically sufficient for the perfect aeration of the blood. He thus concluded that imperfect aeration was not the cause of the symptoms. He further stated that the headache and other symptoms were cured by operation. Immediately patients came round from the anæsthetic they said that the headache had gone. In cases where adenoids were present and no unpleasant symptoms were complained of patients still expressed themselves as feeling better after an operation for the removal of the growths. In both these instances it was hardly possible that if the symptoms were due to imperfect aeration they should have been relieved so rapidly. Again, headaches were often cured by epistaxis. The pathological connexion between the nasal fossæ and the cranial contents was an intimate one. Hyperæmia was often intense in these complaints and the nasal fossæ were very near the brain. There was headache in nasal catarrh similar to that above mentioned. Symptoms in the same case varied in degree from day to day, perhaps according to the condition of vascular engorgement of the mucous membrane. He thought the true explanation to be either reflex action or some blood change they did not understand, but not mal-oxygenation.

*The Diastolic Expansion of the Ventricles as a Factor in Compensation for Disease of the Mitral Valve.*

Dr. STACEY WILSON (Birmingham) read the following paper. There was evidence, he said, that the heart had power to enlarge its chambers and fill itself (aspiration). Cohnheim

had shown that the lengthening of the striated muscle after contraction was not wholly a passive or elastic action. As direct evidence it was found that when the vagus was divided diastole was incomplete. Thus dilatation of the heart was partly a muscular movement under nervous control. Dr. Wilson had investigated this action by means of the cardiograph and he showed many cardiograms in support of his views. He allowed that these were difficult of interpretation. In those for the normal heart there was little evidence of expansion movement, but in those taken from hearts the subject of valvular disease more was to be learnt. He showed tracings taken from patients during life in whom after death the exact condition of the valves and cavities had been ascertained. He quoted one case of compensated mitral regurgitation in which, though the cavity of the ventricle was double the usual size, the cavity of the auricle was less than normal, showing that the latter was not overworked. Now, in such a heart as this if a cardiographic tracing were taken over the apex, not much deviation from the normal was seen, but if more over the auricle the down-stroke indicating that the auricle had been drawn away from the surface by the final portions of the act of contraction of the ventricle, was suddenly interrupted by an up-stroke which Dr. Wilson maintained could only be explained by an active ventricular dilatation forcing the auricle back against the chest-wall, and he was strengthened in this view by the fact that his cardiograph had a pressure of a quarter of a pound, which he considered was far too great to be overcome by a merely passive or elastic dilatation. In some cases he had found that this wave, which he called the diastolic expansion wave, was even greater than that of systolic contraction. The diastolic expansion wave immediately followed the second sound of the heart. He considered that such a view of the ventricular diastole explained the so-called third sound sometimes heard and the mid-diastolic murmur, the latter being the flapping back of the wings of the mitral valve. In aortic regurgitation there was no wave of aspiration.

*A Toxin Theory of the Causation of Gout.*

Dr. W. R. GORE (Whitchurch, Salop) read a paper on this subject. If gout were solely due to the uric acid present in the blood they ought to have an attack of gout whenever the percentage of uric acid reached a certain stage. There was no positive evidence that uric acid in the blood could even produce headache, and Dr. Gore could not see that any satisfactory reasons could be adduced to prove that uric acid was capable of producing the symptoms often ascribed to it. At the same time he agreed that the true cause must be a constituent of the blood and that that constituent must be formed in the digestive tract. In savage races no diet would produce gout; in civilised races any diet might produce it. The constitutional disturbance in gout was out of all proportion to the extent of the region injured. He thought the only class of substances which was likely to be able to produce not only acute articular but also irregular gout was a toxin, and thought it probable that that toxin was the product of bacilli in the intestinal canal. In favour of this they knew that long-continued digestive troubles were often the precursors of gout, that the treatment most efficacious in gout was also that which would have the effect of cleansing and clearing the intestines, while conversely such a poison as lead, which led to the retention of the intestinal contents and anæmia of the intestinal walls, favoured the production of gout.

The PRESIDENT thought the hypothesis a likely one.

Dr. S. J. BARTON (Norwich) did not consider uric acid to be the most important factor in gout. In Norfolk the excretion of uric acid in renal calculi and the like was very common, while acute arthritic gout was very rare. Fifty years ago, however, it had been very common. He attributed the change to greater common-sense and care in diet and the management of health.

Dr. W. GORDON (Exeter) said that in Devonshire they had little uric acid excretory troubles, almost no acute articular gout, but much irregular gout. He thought the results of treatment by salicylic acid were favourable to the toxin theory as he considered its action to be that of an intestinal antiseptic, an opinion strengthened by his experience that it did more good when given in the comparatively insoluble form of salol than in more soluble ones.

Mrs. GARRETT ANDERSON, M.D. (London), could not accept the theory of the toxin origin of gout, mainly because of the persistent recurrence of gouty manifestations in patients suffering from that disease. If the toxin theory were true and they cured a patient why should the disease recur? She regarded gout as a failure of eliminatory processes, a disease of dust and ashes, and treatment directed to the improvement of elimination was in her belief that which did most good, and *vice-versâ* any factors which hindered elimination favoured gout.

Dr. W. EWART (London) then read a short paper on

*Subcutaneous Saline Injections in Pneumonia*

by himself and Dr. PERCIVAL BEAUMONT (London). The present treatment of pneumonia was in many respects unsatisfactory. They could hardly be said to *treat* pneumonia in the real sense of the word at all. All they did in most cases was to ensure that the patient had good hygienic surroundings and good nursing. Under these circumstances he considered that any treatment which seemed likely to give the physician any decided assistance deserved a fair trial. Dr. Clement A. Penrose of Baltimore had published statistics which seemed to prove that the subcutaneous injection of normal saline solution might be such a means. This treatment had sometimes proved useful in the later stages of severe fevers and so it seemed possible that if used early it might be more useful still. Dr. Ewart would divide cases of pneumonia into three classes: first, those obviously likely to recover; second, those tolerably certain to prove fatal, such as old alcoholic cases, cases of double pneumonia, and the like; and between these two was a third class of severe cases in unhealthy and debilitated persons, especially in those over 30. It was in this latter class of cases that a measure like this seemed desirable. Fatal symptoms came on in these very suddenly and it was useless to delay treatment till a late stage. Dr. Ewart had treated six such cases. The first case was of a severe type in a debilitated female, aged 37 years. One pint of normal saline solution was injected into the subcutaneous tissue of the right subclavian region of the chest. Next day the same amount was injected in a similar situation on the left side at 11 A.M. and again at 6 P.M. Altogether there were four such injections alternately on the left and the right sides. The patient recovered. The other five cases, one of which was ordinary pneumonia, two double, one complicated with empyema, and one a case of pneumo-typhoid fever, all died. Grey hepatisation had appeared in some. The results were disappointing. All but Case 1 were fatal, but it might be said that the proceeding caused no unfavourable symptoms and in one or two appeared to have delayed the fatal issue but did no further good. It was not resented by the patients. It did not promote death. He thought it might be given a further trial.

*Progress of Sanatorium Treatment in England and Wales.*

Dr. JANE WALKER (London) then gave an account of Sanatorium Treatment and quoted early advocates of the principles on which such treatment was based, such as Dr. Mc Cormack and Dr. Waddington. After their for the most part unsuccessful attempts to promote a rational treatment of phthisis treatment by high altitudes was employed. Now the factor of climate was not so much insisted on. They might range climates in an ascending degree of excellency, as damp and hot, damp and cold, dry and hot, and dry and cold. Overcrowding would neutralise the effect of the best climate. After all, treatment was more important than climate. This was not sufficiently understood. Air was not enough, feeding was not enough. Careful regulation of exercise, rest, and particularly medical care, must be added. Early improvement should lead to greater care, and patients should not be allowed to leave off treatment or go to their homes for some time after apparent recovery. As to the determination of the duration of the necessary stay in a sanatorium the standard of a patient's health was as important as the state of his respiratory organs. Routine examination of chests was too much neglected. In prognosis the rate of improvement was the most valuable factor. The public had been led to expect too much from the open-air treatment of phthisis from articles in the public reviews. She hoped in time to see maternity sanatoria for consumptive pregnant women, school sanatoria, and sanatoria as preventative institutions for the children of consumptive parents.

Dr. CHOWRY-MÜTHÙ (London) having said a few words,

Dr. BURTON-FANNING (Norwich) deplored the idea which had been given to the public that about three months' stay in a sanatorium was all that was necessary to effect a complete recovery. He pleaded for an early diagnosis and said

that when the disease had got so far as to be discoverable by the stethoscope it had reached comparatively an advanced stage. It ought to have been sent to a sanatorium earlier than that.

Dr. STCLAIR THOMSON (London) emphasised the necessity for proper medical supervision. There were some signs that the keeping of sanatoria might fall into the hands of ignorant persons. Some hopeless cases were kept too long in sanatoria. The essentials of success were not to take a patient at the wrong time and put him in the wrong place until he died, but to take him at the right time and put him in the right place till he recovered.

*Consanguineous Marriages as a Factor in the Etiology of Tuberculosis.*

Dr. C. A. DAVIES (Ramsey, Isle of Man) read a paper on this subject. Consanguinity in marriage, he said, had led to much illness in the offspring. The Manx people had had little crossing of races since the twelfth century. The north was separated from the south of the island by the mountains. Further, a custom existed which discouraged marriage with a person living even in another parish. Hence they had consanguinity to an extensive degree. As a result Dr. Davies found that the general death-rate from phthisis was 25·70 per 10,000—double that of England and Wales—and his contention was further strengthened by the fact that in the most isolated part, Lonan, where all the inhabitants of the parish had only three or four surnames, the rate was 41·77 per 10,000, while in Peel, where many more strangers came, it was only 15·19. He showed very carefully prepared maps and diagrams to illustrate the paper.

Dr. W. EWART then described

*A Case of Fatal Malignant Endocarditis and Right Embolic Hemiplegia apparently due to Dental Caries and Stomatitis, treated by Anti-streptococcic Serum and by Saline Infusions.*

The case was of the usual type. Hemiplegia was present on admission and a rough murmur, increasing in intensity from day to day, was heard over the aortic area. The mouth was foul, with many decayed stumps and a fœtor like that of dead bone. No other departures from health and no history of any wound were discoverable. Injections of anti-streptococcic serum and larger ones of saline solution were employed. The latter in one or two cases had the addition of three-quarters of a grain of cacodylate of sodium to the pint. The patient died and no other source of infection except the mouth could be discovered. Dental hæmorrhage had been noted by several writers on this disease and Dreschfeld had quoted from Brissot and Guilbert cases where stomatitis was present. This case must either be termed idiopathic or the mouth must be considered the point of entrance for the microbes. He preferred the latter view and urged that such an easily examined cavity as the mouth should not escape examination in future cases.

## SURGERY.

THURSDAY, AUGUST 2ND.

*The Methods at Present Available for the Treatment of Simple (Subcutaneous) Fractures.*

Mr. WILLIAM H. BENNETT (London) introduced a discussion on this subject. He said that when he consented to open the discussion he was under the impression that the subject was of limited scope, but he soon found when he considered the matter that it was very wide. He had felt that what was needed was more than the experience of an individual and he had therefore sent a letter with inquiries to a large number of surgeons attached to hospitals in London and the provinces and to others who were in a position to see many fractures and he had received more than 300 replies. The questions had intentionally been rather vague, as he felt that he could not ask these surgeons to take the trouble to make elaborate statistics. At present it might be said that the treatment of fractures was in a state of transition. For many years fractures had been treated on a stereotyped plan, each institution having its own routine method. It appeared that a more rational treatment was becoming general.

The first inquiry related to the method usually adopted in the treatment of fractures of the bones of the extremities. A very few surgeons expressed the opinion that all these cases should be operated upon immediately; a few others said that under no circumstances should an operation be performed. The large majority considered that no operation should be done except under special circumstances. Up to very recent times passive movement was never used until a very late stage; now there was a distinct tendency to discard splints which do not allow of passive movements. When passive movements were used within the first two days they might be spoken of as "immediate"; when they were not commenced until from two to 14 days had elapsed they might be called "intermediate"; and when they were not employed until more than 14 days had elapsed since the fracture the use of them might be called "remote." There seemed to be little doubt that those surgeons who used movements early got the quickest recoveries. There was a general tendency to the disuse of plaster-of-Paris splints, as these tended to cause slow union and to give rise to prolonged disability. A few surgeons preferred active to passive movements, but they used movements only at a very late stage. Nearly half of all those who replied to Mr. Bennett's circular had had no experience of operative treatment for simple fractures, and generally it might be said that the opinions were adverse to operation except in special forms of fracture, as where the fracture was very oblique and difficult to retain in position or when it was spiral. The general opinion was that wire was the best uniting medium. Screws often seemed to give rise to irritation and had to be removed, and occasionally it happened that even wire appeared to act as a foreign body. In two special cases—viz., fracture of the patella and of the olecranon—inquiries were specially made as to the method employed. The answers indicated that wiring the patella was by no means so routine a method of treatment as might be thought, and also that it was by no means free from danger to life and limb. 75 per cent. of those who answered wired all their cases of fractured patella. Three surgeons who formerly employed wiring had given it up. As to when the wiring was done, it was elicited that some operated at once and some after an interval, usually about seven days. The time of recovery varied greatly; one patient played football six weeks after wiring, and one "danced on the stage" only one month after the operation. It seemed also certain that the sooner passive movement was employed after wiring the sooner was the patient able to walk. The risks of the operation were by no means small, and did not seem to depend on the method employed. Three surgeons out of 111 who gave information on this point had had fatal cases; eight had had to amputate; 16 had had suppuration in the joints with ankylosis; five had had re-fracture occur or cutting through the bone by the wire during attempts at restoring movements, necessitating a second operation; and 10 had recurrent arthritis, necessitating removal of the wire. Mr. Bennett considered that operation could not be looked upon as an ideal method of treatment, and in the future probably a rational method would be adopted with early splinting and early movement for all cases in which there was an interval between the fragments of half or perhaps three-quarters of an inch, while an operation would be performed only in special cases with wide separation. With regard to the olecranon, operation appeared from the replies to be employed only exceptionally, and though opinions seemed to vary as to the details of treatment adopted, yet in most cases bony union was complete.

One question related to the immediate use of massage. It appeared that those who had tried it were much in favour of it, and that most of the opposition was theoretical rather than practical. Some surgeons feared embolism, and one had met with it in one case, but embolism had occurred in cases of fracture where no massage had been employed. It appeared to be likely that early passive movement and massage would become more common in the future.

The next question related to the disabilities in wage-earning power resulting from fractures. Of late years much had been heard of the permanent disability resulting from fractures of the extremities among the wage-earning class. Inquiries had been made with regard to this point of colliery surgeons who were in a peculiarly favourable position to express an opinion on this subject as they had the men under observation for years. These surgeons were quite certain that the real disability was not so great as might have been expected; a fracture did not seem to have any permanent effect on the wage-earning capacity, except sometimes in old men and in compoumd comminuted fractures. When disability occurred it was due, not to any displacement of the bones, but to a matting together of the soft parts

about the fracture and the want of free mobility. Rotational displacement was the only form which was likely to give rise to real disability. A recent attempt had been made to introduce an "ambulatory" treatment; in some cases it gave very good results, but it was not a treatment to be adopted generally.

Mr. HOWARD MARSH (London) expressed his high opinion of the value of Mr. Bennett's paper, and considered that the Roentgen rays gave us information as to the true time of union of fractures which differed greatly from that contained in the text-books. For instance, he had seen the humerus fully united at the end of three weeks. With regard to fractures of the patella he adopted wiring as a routine practice, and though he had performed this operation between 60 and 70 times he had never seen any harm occur. Inutility after a fracture was much more frequently due to the soft parts than to the bones.

Mr. C. B. KEETLEY (London) thought that there was a tendency in Mr. Bennett's paper to underestimate the prime importance of putting the bones at once into a good position. The value of the returns obtained by Mr. Bennett was much diminished by the difficulty of answering the questions. The fact that it might be necessary to remove a piece of wire was no argument against its use, as removing a wire was a very little matter. One method of operating on fractures had not been mentioned and that was "pinning." He had some years ago devised a method which was of great value in fractures of the shafts of long bones. It consisted in using L-shaped pins driven into the fragments some little distance above and below the fracture, and then the free limbs of the pins were lashed together and a pad of wood wool was placed round the whole. Mr. Keetley mentioned that he had seen fractures unite in 14 days. While the pins were most useful in fractures of the shaft, wiring was specially adapted to fractures in and near joints. With regard to the value of massage, he considered that they ought to distinguish between massage and early exercise. He was inclined to doubt the utility of massage, but thought that they should allow the patients to move the limb at an early period.

Mr. ROBERT JONES (Liverpool) was not in favour of very early movements in fractures of long bones. He was inclined to think that fractures took longer to unite than was usually imagined. He had seen Colles's fracture easily broken down eight weeks after, and he had carefully measured the limbs of patients leaving the hospital after fractures, and he had measured them again after an interval, and often there was distinct shortening, showing that the bone had not really united. With regard to fractures in the neighbourhood of the elbow no operation was required. All that was necessary was to supinate and then flex the elbow and fix the limb against the chest. If this method were adopted, though there might be marked deformity, yet movement would be free, especially in the direction of flexion. For Colles's fracture he allowed no movement except of the fingers for four weeks. He had operated 12 times for fracture of the patella, with one death.

Mr. FREDERIC EVE (London) thought that in fracture of the patella the treatment to be adopted rested with the conscience of the surgeon. If he felt that he could guarantee asepsis, then the open method was ideal, except for cases with very slight separation of the fragments. He always advised male patients to have the operation performed, as a strong limb was thereby gained. He always began passive movements early. He had found screws much more difficult to use than wires, for the screw often pushed away the fragments, and under strain the screw might break the bone. Wires were much more satisfactory. He could see no object in commencing massage very early, for organisation of effused material did not begin before the eighth or tenth day. He was inclined to think that in some cases displacement of the fragment was a real cause of disability. Especially was this the case in separation of an epiphysis, where there was often some fracture of the shaft.

Mr. J. HUTCHINSON, jun. (London), considered that wiring would continue to be the regular method of treating fractures of the patella. He thought it much the best method if the separation were at all wide. By no other plan of treatment could the ragged edges of the torn aponeurosis be removed, or the effused blood be evacuated, or absolutely perfect apposition of the fragments be obtained. Of all the cases he had done only one was unsuccessful. In that case the man died two weeks after the operation, but the wound and the knee were perfectly healthy and the cause of death was valvular disease of the heart. He was inclined to think that massage would not entirely prevent atrophy of the quadriceps. Early massage and early passive movement were of doubtful value in fractures of the long bones. In fractures near the joints in children there was generally much effusion, but it all thoroughly disappeared in time and free movement was obtained. Even in adults much moulding of the fragments occurred in faulty union. In some fractures, such as fracture of the surgical neck of the humerus, early massage was very likely to lead to non-union.

Mr. F. F. BURGHARD (London) was in favour of immediate operation in every case of fractured patella. The case should be treated without a splint from the first, the joint merely being surrounded by a large mass of cotton-wool. In Pott's fracture and in Colles's fracture early massage was extremely useful. Disability after a fracture was chiefly due to the matting of muscles. Wire was decidedly the best medium for bone suturing.

Mr. BENNETT, in reply, denied that he opposed wiring the patella, unless the separation was less than half an inch or at the most three-quarters. He agreed that massage was not applicable to most fractures in children.

*The Removal of Large Stones from the Bladder, with Notes of a Case.*

Mr. S. H. BURTON (Norwich) read the notes of a case. A man, aged 33 years, had suffered for 13 years from pain on micturition, with occasional hæmaturia. He was admitted to hospital on Feb. 10th, 1900. The urine was alkaline and a large stone was felt. On Feb. 15th suprapubic lithotomy was performed, about five ounces of lotion having first been introduced and an incision three inches long having been made into the bladder. The stone was removed with some little difficulty and the wound was closed except at the lower part, where a drainage tube was left. The stone weighed over 10 ounces. A small fistula was left and in June a pyelitis of the right kidney was found and was incised, but on June 15th the patient died from the renal disease. At the present time for large stones the choice had to be made between suprapubic cystotomy and perineal lithotrity. Suprapubic cystotomy was reintroduced by Petersen of Kiel, and then Sir Henry Thompson recommended it. Mr. Burton looked upon the operation as being very simple, and by it very large stones could be removed; for instance, Sir Thomas Smith removed successfully one 24½ ounces in weight. The issue of this operation, as of most other methods of removing stones, depended chiefly on the condition of the kidneys. Perineal lithotrity might be performed in one of three ways. 1. The Forbes-Keith method. In this an incision was made in the membranous urethra, then a lithotrite was introduced, the stone was crushed, and the fragments were removed by an evacuator. 2. Delbeau's method as modified by Mr. Reginald Harrison. In this a median perineal cystotomy was made, a crushing forceps was introduced, and the fragments were removed. In the third method introduced by Milton (of Cairo) a lateral perineal incision was made, a lithoclast was introduced and the stone was crushed, and then a lithotomy forceps was used to remove the fragments. Mr. Burton thought that a stone of any size could be removed by the suprapubic operation.

*53 Operations for Stone in the Bladder of Two Ounces and Upwards.*

Mr. P. J. FREYER (London), who read a paper under the above title, started by assuming it as generally acknowledged that for a moderately sized stone Bigelow's operation was the only justifiable method, and in his last 400 cases there had been only 13 cutting operations. What was meant by a "large" stone depended partly on the age of the patient and partly on the experience of the operator. Of the 53 cases there were only two in boys and one in a woman. Four were treated by suprapubic cystotomy, 14 by the perineal operation, one by vaginal lithotomy, and the remainder by litholapaxy. It was necessary for large stones to have powerful lithotrites, and the aspirator must be light, free from valves, short, and with strong rubber. Stricture of the urethra was no bar to operation for a small stone, for which a single introduction of the lithotrite would be sufficient. Enlarged prostate was rarely an obstacle to the operation, but a tortuous urethra might be. Of the last 400 cases there was only one stone which the lithotrite could not crush.

Mr. W. CADGE (Norwich) thought that the very excellence of Mr. Freyer's results made it undesirable for the general

surgeon to follow his practice. For the general surgeon the suprapubic method was certainly easier; and if the stone were in the end of the ureter or if it were encysted no other method would do. He thought that the mortality of the suprapubic method would in time be very much reduced. The results of lithotrity obtained in India were not comparable with those acquired in England because the Indian stones were not so hard as the pure uric acid stones of East Anglia.

Professor NICOLAYSEN (Christiania) mentioned that urinary calculi were very rare in Norway, but he had found the suprapubic operation very easy in the case of a very hard uric acid stone.

Mr. REGINALD HARRISON (London) spoke in favour of his form of perineal lithotomy. He pointed out that the results were very good. His cases with those of Milton, whose method was nearly the same as his own, amounted to nearly 50 and out of these only one patient had died, a very good result considering that the operation was only used for large stones.

Brigade-Surgeon-Lieutenant-Colonel D. F. KEEGAN (London) said that the mortality of the suprapubic method was 50 per cent. in India, while in 1895 20 perineal lithotrities were performed in the North-West Provinces with no death. He did not think that any stone could be too hard to be broken by a suitable lithotrite.

Mr. R. C. CHICKEN (Nottingham) spoke of the facility of removing large stones from the female bladder by dilatation of the urethra, and he showed a large calculus which he had removed in this manner without any subsequent incontinence of urine.

Mr. CHESTER NANCE (Norwich) doubted the correctness of the heavy mortality of the suprapubic operation. He described a case in which he had recently removed a large calculus by that method. In the six years during which he had been house surgeon there had been eight cases in which this operation was performed and none of the patients had died.

Mr. BURTON, in reply, said that he could not understand the very great mortality from the suprapubic operation in India.

Mr. FREYER, in reply, claimed that the results of the suprapubic method in this country were equally bad.

## OBSTETRICS AND GYNÆCOLOGY.

### THURSDAY, AUGUST 2ND.

Mr. ALBAN DORAN (London) introduced a discussion upon

*The Natural History of Fibroids and Recent Improvements in their Treatment.*

He divided his subject into two divisions:—1. The natural history of fibroids. He pointed out that much was known about uterine fibroids, the disease being so common; but more knowledge was desirable. Their pathology as tumours had been worked out fairly well, but so far very little had been accurately determined as to the physiological and pathological relation of the ovaries to fibroids. These tumours were sometimes associated with menorrhagia or metrorrhagia and sometimes with normal menstruation. The precise significance of menorrhagia was not always certain in individual cases. The rate of growth varied considerably; moreover, a slow-growing fibroid might take on sudden growth, and a rapidly-growing fibroid might as suddenly cease to grow altogether; but prognosis as to growth was very uncertain in any given case. On this point more knowledge was urgently needed, for treatment depended on the question of future growth or quiescence of the tumour. It was known that fibroids tended to grow smaller about the menopause; but this rule must be accepted with certain qualifications and had many exceptions. 2. Improvements in the treatment of fibroids. The speaker eliminated from the question under discussion the subject of fibroids of the broad ligament. These tumours always demanded removal and the operation for that purpose differed surgically from hysterectomy for fibroids in several important respects. Hence statistics of hysterectomy for fibroid, which included cases of fibroid of the broad ligament, were unreliable. He held that most uterine fibroids did not require removal; discussion as to improvement in their therapeutical treatment was therefore desirable. In respect to any alleged "improvement" based on statistics with low mortality it must not be forgotten that many small fibroids that did not require removal might be taken away with relative impunity. In that case, whatever the operation might be, it was not surgery. Granting that many fibroids, under well-known conditions, undoubtedly required removal, he proceeded to discuss the methods for removing them. (*a*) The serre-nœud or elastic ligature was rejected by most authorities; some still advocated it in cases of hysterectomy for fibroid obstructing labour, as its application saved much time. (*b*) Enucleation of the fibroid and sparing of the uterus were advocated in America. (*c*) Panhysterectomy and vaginal extirpation were favoured in continental Europe. (*d*) Retro-peritoneal hysterectomy was the most popular method in the United Kingdom at present. (*e*) Removal of the ovaries for fibroids had been found to be of very doubtful value, as the hæmorrhage continued in many cases and the reduction in size of the myoma was not constant. Improvements in technical details and the question of leaving the ovaries were subjects for discussion.

Dr. BERRY HART (Edinburgh) commended the spirit of healthy scepticism which prevailed in the paper. With regard to the clamp operation he considered it as a serious and raw procedure which had played a great part in biasing surgeons and patients against the operation. The good results to be expected from the onset of the menopause had been greatly exaggerated; he had seen many bad consequences of leaving fibroids alone, such as hæmorrhage, jamming down of the tumour into the pelvis, pressure on the ureters, &c. He regarded the two chief improvements in operation as being: (1) better hæmostasis, especially by the American method; and (2) the Trendelenburg position. He believed that any ligature applied to the stump of the cervix was bad, as tending to produce sloughing. The attitude towards the subject of fibroids adopted in this country was, he thought, too conservative.

Dr. W. J. SMYLY (Dublin) said that there was no question before practitioners more difficult to answer than whether fibroids should be operated on or not. In the Address on Medicine on the previous day they had been told that the physician could tell what was going to happen and it came about; but the matter was quite otherwise with the gynæcologist. There were patients whom he advised in former years to have no operation, and in many of these cases he had since regretted his advice; in a few cases he had not regretted it. In the majority of cases his view was that myomata required operation. Many patients, if left alone, died directly from the results of fibroid tumours, others from the indirect results. The latter cases were often not recognised. With regard to method, he thought he might claim Mr. Doran as a convert to pan-hysterectomy, for he had said in his paper that the more of the cervix that was removed the better; and the most of the cervix that could be removed was the whole cervix. He did not think that any of Mr. Doran's objections to pan-hysterectomy were valid. He had lately adopted M. Doyen's methods, both vaginal and abdominal, in the treatment of fibroids, with very good results. He had done 25 cases of the vaginal operation, with one death; and six cases of Doyen's abdominal operation, also with one death. For rapidity and safety and for the avoidance of many ligatures he thought that Doyen's methods were the best.

Mr. HARRISON CRIPPS (London) had little doubt that if a woman could be told that the risk of operation was less than the risk of leaving a fibroid alone she would in most cases choose operation. But when a tumour was small and perhaps accidentally found they should not, of course, advise operation. The difficulty of decision lay in cases of an intermediate class, where a fibroid did not threaten life but caused much inconvenience; if the results of operation were only good enough, operation would no doubt be more often practised in this class of case. To guide them in their decision they required to know (1) the risk to life of fibroids if left alone; and (2) the risk of operation. It was very difficult to answer the first question. Dr. Champneys had given some statistics on this point in which he made the statement that the mortality apart from operation was three in over 2,000,000. An error must have crept in somewhere in these statistics, and as these statistics were likely to be quoted hereafter he thought that the discrepancy required explanation. All of them who had seen anything of fibroid disease of course knew that the fatality from fibroids was vastly greater than three in 2,000,000. His experience of fibroids was that the fatality was even much greater than the 2 per cent. shown by the St. Bartholomew's post-mortem cases. The chief causes of death were cystic degeneration, sloughing, pregnancy, and intestinal obstruction; out of

80 cases of fibroid he had met with 10 cases of one or other of these complications. He believed that the most important recent improvements in methods were: (1) a better knowledge of antiseptics; (2) intra-peritoneal treatment of the stump; and (3) the Trendelenburg position.

Dr. A. V. MACAN (Dublin) pointed out that statistics took no account of the thousands of women with one or more fibroids who lived and died without anyone knowing anything about them. The exact method of operation seemed to him of less importance than the maintenance of perfect asepsis.

Mr. J. H. CAMERON (Toronto) said that however frequent uterine myomata might be, and however few the women who would die from them, regarded in the aggregate, the important point for the clinician was what was going to happen in the individual patient who was consulting him. He agreed with Dr. Smyly as to the difficulty of forecasting the course of these cases. The method of operation did not seem to him at all a matter of indifference; the simplest plan was the best, and he thought that no method was better than Kelly's. The danger of many ligatures could be obviated by the plan in vogue in some places in Canada of employing powerful clamps applied for three or four minutes. The hæmostasis by this means was perfect.

Mr. ROGER WILLIAMS (Bristol) believed that surgeons had been led into a false position by comparing myomatous with ovarian tumours. There was no analogy between them, but rather a complete antithesis. With myomata not more than 1 in 2000 unoperated cases ended fatally and not more than 1 in 500 suffered serious indisposition. He calculated that there would be found to be about 1,000,000 myomatous women in their present population; about 500 women died annually from myomata which would place the mortality of myoma as 1 in 2000. Now if all the million women were operated on, the mortality of operation being 10 per cent., about 100,000 cases would be sacrificed annually.

Dr. JOHN CAMPBELL (Belfast) said that the proportion of women with harmless fibroids was of no interest to him; he had to deal with patients who consulted him because the tumours were troubling them. He emphasised the fact that the tumour should not be allowed to remain until dangerous changes had taken place in it or until the woman's state of health was such as to make the operation a matter of life and death. Good surgery consisted in the removal of tumours at a favourable time. But however often they might have to operate there were many cases in which medical treatment was for some reason essential, especially for hæmorrhage, and he strongly advocated the administration of chloride of calcium and hydrastis in combination. The former drug acted not by depositing calcium salts in the tumour or elsewhere but by favouring coagulation and checking hæmorrhage.

After some remarks by Dr. MACNAUGHTON-JONES (London) and Mr. STANMORE BISHOP (Manchester) Mrs. STANLEY BOYD, M.D. (London), referred to the presence of a concomitant salpingitis as a cause of hæmorrhage and suggested that valuable data might be obtained if statistical evidence were collected of cases operated on showing the symptoms, and especially hæmorrhage, for which the operation was undertaken and the exact pathological conditions found at operation, the position of the tumour in relation to the uterine cavity, and the state of the uterine mucosa, tubes, and ovaries. Operations were too often exploratory; the exact condition of the parts should be ascertained beforehand. With regard to the removal of one or both appendages Mrs. Stanley Boyd recommended that one ovary at least should always be left if possible, for even an atrophied ovary was probably better than none at all.

Mrs. M. A. D. SCHARLIEB, M.D. (London), classed the indications for operating as follows:—present conditions: hæmorrhage, pain, pressure symptoms, invalidism; future conditions: degenerations, especially malignant and gangrenous. Pan-hysterectomy should, she thought, be used where fibroids involved the whole uterus including the cervix; but myomectomy should always be done when it was possible to save the uterus.

Dr. ARTHUR GILES (London), referring to the mortality of fibroids when left to themselves, said that astonishing fallacies were met with in statements on this subject. Mr. Cripps had shown the errors into which so careful an observer as Dr. Champneys had been led. The mortality of unoperated fibroids at the present time could not be ascertained, because nearly all the gravest cases came under the care of the surgeon, and a large number of what would otherwise have been fatal cases were consequently removed from that category. Mr. Roger Williams stated that the mortality of unoperated fibroids was 1 in 2000 (a mortality which Dr. Giles contended was entirely below the mark), and he went on to say that if all cases of fibroids were operated upon the mortality, reckoned at 10 per cent., would amount to 100,000. This was absurd, because, as all authorities agreed, the mortality of operations undertaken for small fibroids was practically *nil*; as Mr. Doran had said, small fibroids might be taken away with relative impunity. Broadly, the question of the indications for operation could be expressed fairly simply. If a fibroid caused no symptoms no operation was needed. If symptoms occurred they must be treated, and whereas in cases where life was threatened all would agree to operation, in cases where life was not threatened the matter should be fairly placed before the patient and the choice left to her.

Dr. HENRY BRIGGS (Liverpool) laid stress on the importance, in suturing the cervix after hysterectomy, of avoiding passing sutures through the substance of the stump and the peritoneum. The latter should be sutured separately.

After some observations by Mr. SKENE KEITH (London) the PRESIDENT said that they were all agreed that in cases with grave symptoms operation must be done, and that not only when life but also when health, which was often as precious as life, was threatened. The difficulty was with borderland cases. He thought that the death-rate of unoperated fibroids should not be very difficult to obtain because it was only within recent years that these cases were operated upon, but he did not think that the mortality was as low as Dr. Champneys had stated. It seemed to him that a wise and moderate conservatism had been shown by the various speakers on the subject.

Mr. ALBAN DORAN then briefly replied.

Mrs. SCHARLIEB read a paper on Vaginal Hysterectomy, its Immediate and Remote Results, and Dr. HENRY BRIGGS read a paper, illustrated by numerous drawings, on Vaginal Enucleation *versus* Vaginal Hysterectomy in the Treatment of some Fibroids of the Uterus, with notes of cases.

## STATE MEDICINE.

### THURSDAY, AUGUST 2ND.

*The Action which can be Taken by Local Authorities for the Prevention of Tuberculous Disease, apart from the Control of Milk- and Meat-supplies.*

The discussion on this subject was opened by Dr. HENRY KENWOOD, assistant professor of public health, University College, London. In opening the discussion he proposed first to review briefly the various general measures and then to pass to a consideration of the notification of phthisis.

*Improved sanitation.*—In the first place they all recognised that none of their efforts must be relaxed in the direction of removing those conditions of site, dwelling, occupation, and of food which promoted the prevalence of the disease, seeing that the work of sanitary authorities in that direction had reduced such prevalence some 40 per cent. among males and some 54 per cent. among females, from 1861-70 to 1891-98; and in dealing with the phthisis still in their midst they must more especially direct their energies towards enforcing the provisions of sanitary law (1) for the prevention of overcrowding; (2) for securing healthy homes for the lower classes; and (3) for an improved general scavenging. Mr. Shirley Murphy had taken the death-rate from phthisis in each of the five groups of London sanitary areas at several age-periods and he found that, speaking generally, the more over-crowded groups had higher death-rates at *each age-period* than the less over-crowded, and this was especially marked at those age-periods which were most susceptible to phthisis. It was seen, then, what a close relationship existed between the prevalence of phthisis and the housing of the poorer classes.

*Educational measures.*—So far as this essential matter of the education of the public was concerned, happily the public press in this country might be counted upon to coöperate in any public-spirited action. It had already afforded material and invaluable help and by reporting the transactions of the National Association for the Prevention of Consumption it had done much more to educate the general public on the communicability of phthisis. The annual meetings of the British Medical Association, the Sanitary Institute, the Royal Institute of Public Health, and the National Health Society directly (and indirectly through the press) did so much to educate the public on

matters of public health that it was a lost opportunity if the subject of tuberculosis in some one or other of its relations did not come up for treatment. But there was another most powerful educational factor on which they ought to be able to count. The Church, as she existed in England, with her parochial system extending to the remotest parts, was the most powerful organisation for doing good which the nation possessed. A great means of educating *the future generation* was provided through the schools. Instruction in the elements of hygiene, of healthy infant-rearing, and of infection and its prevention, should be made compulsory. In every standard it could be taught, either under composition, reading, writing (copybook headings), or as a special subject; and the education should be made to appeal directly to the scholars by means of object lessons of defective hygiene, &c. Judiciously worded handbills might be placed in the hands of nurses, district visitors, the clergy, and the heads of schools for distribution; and they might be distributed by the local authority to all parts of the district where the information was more particularly required. On these handbills of general information an offer should always be made to disinfect, free of charge, infected premises. In Manchester such handbills had been left three times at every house in the city since the year 1894. Permission might be sought for placards (brief and practical) to be hung up in workrooms, public-houses, railway-carriages and other public conveyances, theatres, and music-halls, in which the dangerous and disgusting habit of spitting everywhere and anywhere was condemned, and in which the precautions were indicated which should be taken with the expectoration coughed up by those who had coughs of long standing.

*Other measures.*—Arrangements might be made with the registrar of deaths to advise the medical officer of health of all deaths from phthisis as soon as possible after registration, when the house should be visited, an offer made to disinfect, and a handbill of advice left. In Stoke Newington and Finchley they had during the past two years secured satisfactory disinfection in slightly over 70 per cent. of the applications made after learning of a death from phthisis. Circular letters should always be sent asking the coöperation of medical men and nurses in advising and directing the necessary preventive measures in infected households. It was generally recognised that a great duty devolved upon the medical attendant who advised a phthisical patient, and his educational power was enormous. The employment of consumptives in the cooking or selling of food should be prohibited as far as possible, and in any case where consumptives *must* work along with healthy people the superintendent of the works should make the observance of the rules with reference to expectoration an absolute condition on all workers. In this connexion the importance of a careful selection of occupation for those who inherited a predisposition to phthisis could not be exaggerated, and since otherwise work had often to be persisted in by a phthisical patient to the detriment of his own recovery and the safety of his fellow-workers, the German measure of compulsory insurance had much to recommend it. In Germany at present all persons, male and female, engaged for wages or salary in trade or business (about 8,000,000) were compulsorily insured against sickness and death, the employer paying one-third and the employé the remaining two-thirds of the premium. This law did not include domestic servants or agricultural labours. Finally, many sanitary authorities were providing, free of charge, the means of a bacteriological examination of sputum on the condition that certain particulars of the disease, when diagnosed as phthisis, should be communicated confidentially to the medical officer of health, who did not arrange for a visit to the house if the medical attendant objected.

*Isolation hospitals and sanatoria.*—The provision of some measure of hospital isolation was an essential part of an effective scheme. Whatever the extent of the provision made the great majority of the sufferers from phthisis would remain outside with their families and at their work, and Dr. Kenwood agreed that it would be impossible and unnecessarily cruel to take them from their homes for purposes of compulsory isolation, save in exceptional cases; but the fact must be recognised that if a phthisical individual, by reason of his surroundings or mental habit, was, despite all their efforts in other directions, a continuous source of danger to others, he should be compelled to submit to isolation, and without this provision all their efforts to reduce the prevalence of the disease must be seriously handicapped. What, then, was more particularly wanted was an isolation home or hospital for each district, or combination of districts, where the medical officer of health and medical attendant were both able to certify that the isolation of the patient was the only measure by which others could be protected, power should be given and the means provided to secure such isolation. So far as sanatoria or curative hospitals were concerned almost without exception those located in England were designed for the benefit of the well-to-do classes and no sanatorium was yet available for poor patients. It was impossible to believe that this state of things could be allowed to continue. By making such hospital provision the authority presented a most valuable object lesson to the whole community and the more of the poorer classes who could be induced to pass through the doors of a sanatorium either for a short residence or for gratuitous advice and treatment as out-patients the more completely would the poorer section of the community be educated to the routine observance of the necessary precautions.

*The notification of phthisis.*—It was necessary to know where the infected homes were, and this information could be obtained by notification and by notification alone. Handbills and lectures, &c., had little educational effect compared with that which brought about the visit of the medical officer of health or his assistant who would direct and impress upon the household the necessary precautions which must be observed. This was effective education, and without notification it was impossible thus to educate and protect a large number of persons who must otherwise inevitably fall victims to the disease; that was the price which the community was paying for the failure to adopt notification. It was in the interest of the individual, the community, and the State that all communicable disease should be reduced to the lowest attainable limit, and this was impossible, so far as phthisis was concerned, without the preliminary information obtained by notification alone, and that conviction was generally shared by those who had honestly tried and experienced the limitations of all other measures. It was suggested, therefore, that a system of voluntary notification should be everywhere instituted without further delay; but not before notification was made compulsory would they obtain a sufficiently complete knowledge of cases to enable them to cope with the disease with the greatest effect. There could be no two opinions that the action which would follow upon the compulsory notification could not involve all the obligations and penalties enacted by public health legislation against the spread of the infection of those diseases already scheduled in the Infectious Diseases (Notification) Act, for (1) the average duration of infection that ultimately proved fatal was about three years; and (2) the illness fell mainly on the working periods of life (25 to 55 years of age); sufferers were, moreover, generally capable of continuing their work for many months and often for years. In fact, the action taken under compulsory notification need be little if any more than that embraced in the voluntary notification as practised at Manchester.

*The Manchester scheme.*—Handbills of information and advice were freely distributed as opportunity presented itself; and, as already pointed out, a handbill had been left at every house in the city on three different occasions since 1894. Placards dealing with expectoration were affixed as generally as possible in workrooms, public-houses, public conveyances, &c. All premises in which a death from phthisis had occurred as reported by the registrar were visited; advice was tendered and an offer was made to disinfect. Pending the approval of the Local Government Board to phthisis being included among the diseases compulsorily notifiable under the local Act, a voluntary system of notification was in force, medical practitioners receiving the following fees: For each report of a case not previously reported, when reported by a private medical attendant, 2*s.* 6*d.*; for each report of a case previously reported from another source, 1*s.*; for each report of a change of address of a phthisical patient, the new address being reported, 1*s.*; for each fresh case reported from a public institution, 1*s.*; and for each change of address reported from a public institution, the new address being reported, 1*s.* On receipt of the notification a visit was paid to the premises by a medical officer specially appointed and exclusively engaged in this work. In all cases reported by a private practitioner he called at the house and made a record of the circumstances requiring to be noted on the very complete inquiry form of the medical officer of health, and gave

general instructions as to the sanitation of the house, but no directions as regards the personal habits of the patient unless authorised to do so by the medical attendant. He left, however, in every case, a general paper of instructions as regards preventive measures. No visit was paid to the house in those cases in which the medical attendant expressed a decided objection, provided he was willing himself to fill in the office form, to give all necessary instructions, and to take charge of disinfection, to be carried out in the manner usually employed by the health department. The offer to disinfect and cleanse dirty premises was found to be invariably accepted. A lady health visitor or a sanitary inspector paid a fortnightly visit to each infected house with the object of seeing that the necessary measures of precaution were being carried out, and then the circumstances were reported to the medical officer of health.

*The cost of notification.*—The cost of the measure in the large majority of the sanitary areas of Great Britain would not exceed a few pounds; the expenditure of about £300 per annum would suffice for the needs of a community of some 100,000. Now let them follow the economist, and disregarding the mere sacredness of human life, regard it from the standpoint of its value to the State, and they would find that the above expenditure of £300, on Farr's calculation of the economical value of a human life, would be justified if it led to the saving of two lives (at £150 each) per annum.

Dr. A. HILL (Birmingham) cordially approved of the Manchester method. In Birmingham women inspectors were sent out to inquire as to the existence of cases of phthisis, handbills were distributed, and after removal or death disinfection was practised. Beyond that no powers existed. Dr. Kenwood had traversed the subject very completely.

Dr. T. F. S. CAVERHILL (Edinburgh) said that in Edinburgh they proposed to set aside 100 beds from the old Fever Hospital. As to education of the public, it was absurd to talk of such a proceeding while in all their hospitals advanced cases of phthisis were placed alongside other complaints. Under such circumstances it was useless their telling the public that phthisis was a communicable disease. There were in Scotland two sanatoria for the treatment of the poor. In one of them, at the Bridge of Weir, there were 70 beds for women, and more were to follow for men. He thought it a drawback that notification handed over the case to the sanitary inspector, which opened up an undesirable situation. He advocated the exclusion of workmen affected with phthisis from workshops: such workmen should insure their lives.

Mr. E. B. FULLER (Cape Town) said that every week in Cape Town fresh supplies of tubercle were poured in on them in the shape of advanced cases seeking health. There was no registration. In his opinion a period of voluntary notification should always precede a compulsory system. Formerly a large number of cases were taken into the wards of the Somerset Hospital. A bungalow for phthisical patients was now erected in the hospital grounds for the reception of such cases. It was the poor who spread the disease in South Africa, especially among the coloured classes; and they were infected by Europeans coming out to the Cape.

Dr. H. JONES (Rhondda) urged the desirability of early intimation of deaths from phthisis. They, as medical officers, were entitled to such information at a small cost. They were also entitled to receive from Poor-law officers a list of all persons suffering from the disease. When a medical officer of health he supplemented that information by lists obtained from the secretaries of the friendly societies. In that way he had information of about 80 per cent. of all sickness in his district. Disinfection was still very imperfect in many districts and, without that, notification was useless.

Mr. J. OLDFIELD (London) objected to any attempt to make phthisis compulsorily notifiable as regards private patients residing in their own private houses, but there were two classes where notification should be made. In the first place boarding- and lodging-houses in favourite districts like Bournemouth were often serious foci of disease. The bedding, curtains, carpets, &c., were changed but seldom and were not disinfected, and these rooms became hotbeds of infection for other invalid boarders who went there. Steps should be taken by which all such public houses should be required to notify the presence of a phthisical visitor there. In the second place all out-patients who presented themselves at a public institution for medical treatment should be subject to notification by the medical officer who diagnosed the case.

Dr. F. J. ALLAN (London) said that in his own district there existed the largest metropolitan death-rate from phthisis. He considered notification of phthisis comparatively useless when a patient was allowed to go about anywhere and everywhere distributing the seeds of infection. He found a large number of instances of personal infection. In a series of 24 families numerous members were infected from pre-existing cases. He was not a little surprised to hear from the last speaker the antiquated theory that a man's private house should shield him from sanitary control.

Sir HUGH BEEVOR (London) then read a paper on Rural Phthisis and the Insignificance of Case-to-Case Infection.

Dr. H. PECK (Chesterfield) cordially agreed with the suggestion as to the compulsory notification of phthisis, but feared that there was little prospect of getting it. As far back as 1895 the West Lancashire Rural District Council desired to add this disease to the compulsorily notifiable list but failed to obtain the sanction of the Local Government Board. Good might be done in other ways than those indicated by Dr. Kenwood; thus the Chesterfield Infants Life Society had a lady inspector who visited all houses at which a birth had taken place and gave instructions as to nursing, sterilisation of milk, and so forth, and also as to sanitary matters including that under discussion. The corporation contributed £40 a year to the funds of the society. A large reduction of the infant mortality rate had already taken place in the two years that had elapsed since the adoption of that practice, but it was too early to speak with certainty as to the effect it had on the infantile tuberculous death-rate.

Dr. J. W. COOK (Colchester) considered that the present mode of scavenging was a source of danger in the spread of phthisis. The disinfection of houses he would press to the utmost.

Dr. KENWOOD, in reply, said that with regard to the rôle of the sanitary inspector in the notification of phthisis he had simply to fill in an official report for his medical officer and to give general directions to the persons whom he visited. As to the cost of notification, his estimate was drawn up from information of many who had actual experience of the subject. Mr. Oldfield's attitude seemed to be founded on a fallacy. He wished to protect the individual against interference which the latter did not resent. The Local Government Board would act only under great pressure, but he had no doubt they would live to see a modified notification adopted in the case of phthisis.

A vote of thanks to Dr. Kenwood and Sir Hugh Beevor was proposed by Dr. THRESH and carried unanimously.

*Diet in Relation to Cancer.*

Mr. J. OLDFIELD read a paper on this subject. He discussed various theories of origin and the unequal incidence of the disease. While he admitted that flesh-eating was not a cause of cancer in savage tribes he thought it was otherwise among modern civilised communities. He advocated treatment by a kind of modified starvation.

Dr. G. M. SCOTT (Witham) then read a paper on Cancer Mortality in East Anglia.

## PSYCHOLOGY.

THURSDAY, AUGUST 2ND.

*Insanity in Lead Workers.*

Dr. ROBERT JONES (Claybury Asylum) read a paper on this subject. He pointed out that among the 1050 male patients in residence at the London County Asylum at Claybury, Essex, no less than 35 owed their mental illness to lead poisoning. The occupations most prone to suffer from lead poisoning were those of painters and house decorators, glaziers, plumbers, gilders, and workers in electro-plating, smelters of lead ores, and workers in the manufacture and glazing of pottery and china. The greatest dangers of lead poisoning, however, prevailed among those engaged in white and orange lead factories. Fine particles of "dust" passed from the furnaces into the atmosphere, the "dust" containing the carbonates and oxides of lead. The inhalation of this speedily led to acute symptoms of lead poisoning and the furnaces had to be "hooded" to prevent as far as possible this metallic contamination of the atmosphere. The fumes or vapours from the furnaces where lead ores were smelted were similarly highly poisonous, foreign ores rich in carbonates being more deadly than British ores. Lead encephalopathy had since the classical work of Tanquerel

(1840) been generally recognised. In spite of many legislative enactments in Factory Acts of recent years a considerable number of cases of lead poisoning occurred yearly and many of them were attributable to the carelessness of lead workers in the factories who did not strictly conform to the rules regarding the wearing of overalls during work, the washing of hands after work, the wearing of respirators while in the factory, &c. The symptoms of lead encephalopathy in 19 patients at Claybury Asylum were varied, and amongst them were the following: partial or total blindness often of sudden or rapid onset, attacks of partial paralysis, convulsions and fits of an epileptic or hysterical nature, maniacal excitement, melancholic depression, attacks of delirium and mental confusion, and apathy and dementia. Some of the cases exhibited symptoms very like those of general paralysis of the insane. Headache and loss of memory were also not uncommon symptoms, as well as hallucinations of sight and hearing and delusions of persecution. Epileptic fits were found to occur in seven out of 19 cases and were toxic in origin like those of uræmia and eclampsia. The treatment was expectant, dietetic, and aperient. Diet should be generous and should contain abundance of proteids—milk, eggs, tropon, or other albuminous preparations, while massage, open-air exercise in suitable cases, electric baths and galvanism, and the administration of aperients (haustus sennae compositus) were also necessary. The majority of the cases benefited under the above treatment.

Dr. LLOYD ANDRIEZEN (London) referred to the selective action of lead on the spinal cord of rabbits in producing paraplegia. In the human subject there was in some cases of lead poisoning a predisposition to encephalopathy and in others to peripheral neuritis. He did not believe that lead in the former case acted on the brain indirectly by bringing about uricacidæmia and referred to several cases where lead poisoning had been followed by acute cerebral symptoms of rapid development—e.g., delirium, mental confusion, sudden focal paralysis, and even hysteriform and hallucinatory disturbances. He also referred to some unusual cases of lead paralysis, an account of which had recently appeared in THE LANCET.[1]

Dr. E. S. PASMORE (Banstead Asylum) questioned whether in cases of lead encephalopathy simulating general paralysis the action of pre-existent syphilis could be excluded. He thought that melancholia and mania following lead poisoning were but clinical stages in one and the same condition.

Dr. HARRY CORNER (London) stated that many patients suffering from acute lead encephalopathy got well under treatment in hospital after a week or ten days and did not require to be sent to an asylum. Such cases occurring in young males might simulate delirium tremens or mania transitoria, or among young females they might be mistaken for hysteria and treated accordingly with fatal results. Many of the patients had a few epileptiform fits, such cases ending fatally.

Dr. PERCY SMITH (London) referred to the toxic action of lead as compared with syphilis and alcohol. He thought it very important that in attributing some cases of general paralysis to lead encephalopathy any history of previous syphilitic infection should be first excluded.

*The Pathological Histology of Acute Delirious Mania.*

Dr. JOHN TURNER (Essex County Asylum) read a paper, with lantern demonstration, on Acute Delirious Mania. The bodily symptoms were those of the typhoid state. The symptoms were extreme restlessness and weakness, feeble circulation, a dry brown tongue, sordes on the lips and teeth, a slight rise of temperature (two or three degrees Fahrenheit), and occasionally a subnormal temperature. There were three divisions of cases of the disease—viz., those of alcoholic, septic, or unknown origin, the last class being probably autotoxic. Hence this last class had been included along with general paralysis and confusional insanity in a toxic group (MacPherson). The pathological changes in the brain were shown strikingly in the giant pyramidal cells of the ascending frontal convolution when stained by Nissl's method. Nissl gave seven forms of alteration of human nerve-cells of which one was acute cell disease (acute Veränderung). The changes were said by Nissl to be characteristic and diagnostic and to affect all the cortical nerve-cells. The achromatic substance became stainable. August Hoch[2] described a similar affection of the nerve-cells and from the description given it appeared to be similar to, if not identical with, the changes found in the anterior cornual cells of animals after artificial pyrexia. In Dr. Turner's own cases the changes were localised to certain cortical cells and had not the universality of distribution throughout all layers that Nissl described. In patients dying from typhoid fever examined by him similar cortical changes were found. In all 11 cases of acute delirium were studied post mortem with the Nissl method. Every one of the cases showed in greater or less degree the following cellular changes—viz., enormous accumulation of yellow pigment in the great pyramidal nerve-cell body, a large number of free nuclei from five to six micro-millimetres in diameter within the pericellular and perivascular spaces in all the depths of the cortex, dense staining of the cell bodies of the giant pyramidal cells, and a frequent shrinkage of the nucleus. As a rule, the more profoundly the cell was altered the larger was the deposit of pigment. The dendrites as a rule retained their chromatic spindles or threads. A common visceral condition in these cases was a fatty degeneration of the liver-cells at the margin of the hepatic lobules. In one case the spinal cord was examined, but no evidence was present of degeneration of nerve-fibres in the white matter. It was concluded that all forms of acute delirious mania were of toxic origin—i.e., exotoxic (e.g., alcoholic), septic, or autotoxic. The fatty degeneration of the liver was found in the last class of cases. In those cases of acute delirious mania with high delirium and a rapidly fatal termination all the cortical giant cells were profoundly affected and it was claimed that from an inspection of a properly prepared section of the cortex a tolerably accurate diagnosis could be formed of the mental condition preceding death.

Dr. C. C. EASTERBROOK (Edinburgh) thought it probable from Dr. Turner's specimens that the pigmentary masses shown in the nerve-cells were derived from the chromophilic elements of the nerve-cell body.

Dr. LLOYD ANDRIEZEN described two cases of acute delirium in which he had studied the brain post mortem with various stains (toluidine blue, aniline, and others). He found in both an excessive reddish-brown pigmentary degeneration in nearly all the cortical pyramidal and polymorphic cells and most marked in the great pyramidal cells. Pericellular hyperplasia of connective tissue cells (plasma cells) was a common feature in both cases, and in many small arterioles there were evidences of thrombosis, apparently of several hours' duration ante mortem. There were indications of an intense and persistent toxæmia; the capillaries in both instances showed a hyaloid degeneration with excessive blue staining of the endothelium. Diffuse and universal muscular twitchings (of the arms, the legs, and the face) were present for two or three days before death in one case (that of a female), and in this the cortical changes were more marked than in the other case and could be correlated to the physical symptoms. Treatment by venesection and saline injection should be considered necessary as a last resource in acute toxic cases threatening to end fatally.

Dr. PERCY SMITH was glad to corroborate the statement that cases could be clinically distinguished according to their etiology. In one case examined post mortem there was a marked dryness of the whole organs of the body and a very small quantity of blood was present in the vessels.

*The Colony Treatment of Epileptics.*

Dr. W. ALDREN TURNER (London) read a paper on this subject and referred to the colony at Chalfont St. Peter as an example. Open-air treatment and occupation and manual and industrial training were necessary and possible in most instances. Only sane epileptics were admitted and the institution was in a measure self-supporting. In the treatment of fits bromides were used in combination with other known and approved drugs. Moral treatment was of great importance and classes for the education of epileptic children were held with good results.

A general discussion on the classification and treatment (dietetic and medicinal) of epileptics in farm colonies followed, in which remarks were made by Dr. ROBERT JONES, Dr. HARRY CORNER, Dr. PASMORE, Dr. LLOYD ANDRIEZEN, and Mr. ANDERSON.

*The Relation of the Lunacy Laws to Neuro-Psychological Diseases.*

Dr. JOHN MACCORMACK (Belfast) in a paper on this subject pointed out the risk and inconvenience to which a medical man signing a lunacy certificate might be subjected by a recovered patient bringing an action at law, though he (the practitioner) had acted in all good faith and with reasonable

[1] THE LANCET, Feb. 24th, 1900, p. 554.
[2] American Journal of Insanity, April, 1898.

care. A modification of the existing law would be desirable and even necessary. It was also urged that in all their great cities there should be established special hospitals for the treatment of mental diseases in their earliest stages and to facilitate such treatment suitable legislation should be brought about.

Brief remarks were then made by Dr. LLOYD ANDRIEZEN, Dr. DOUGLAS, Dr. SEYMOUR TUKE, and Dr. PERCY SMITH with regard to the shortcomings in the provisions of the Lunacy Act of 1890 which were certainly open to improvement.

## PHYSIOLOGY.

THURSDAY, AUGUST 2ND.

### *Muscular Tonus in Relation to Diseases of the Nervous System.*

Dr. F. W. MOTT (London) opened a discussion on this subject. He particularly regretted the absence of Professor C. S. Sherrington and Professor Victor Horsley who were announced to take part in the debate. He spoke of muscle tone as being in part muscular, in part nervous in origin, and had found, partly in conjunction with Professor Sherrington, that afferent as well as efferent nerve impulses were involved in its maintenance. He pointed out the difference between the described effects of experimental transverse division of the cord, and those due to pathological transverse lesions, and dilated on the several clinical conditions which appeared to influence muscle tone. He alluded to the work of Dr. L. J. J. Maskens, whom he was glad to see present and whose views he hoped to hear.

The President of the section, Professor W. D. HALLIBURTON (London), commented on the discordance between physiological and clinical accounts of the effect of total transverse lesions of the cord in animals and men. Perhaps this discordance was due to the effect of crushes being greater than that of clean cuts, perhaps also to the fact that man was more susceptible to shock than were the lower mammals.

Dr. L. J. J. MASKENS (Utrecht) referred to those parts of Dr. Mott's speech which bore more particularly on his own work. He instanced so-called tendon phenomena as being largely conditioned by muscular tonus. Muscular tonus, however, was not the only factor concerned, since variations in the nutrition, irritability, passive tension, and nervous relationships of the muscles produced marked alterations in their response. Muscular tonus was essentially reflex in its origin, whilst the tendon phenomenon was rather due to mechanical excitation of the muscles concerned in its production. He agreed with Westphal, Gowers, and Waller on this point and quoted an analysis of 200 cases as bearing out his view. In 66·3 per cent. of these either tendon phenomena or true reflexes were affected. In only 13·6 per cent. were both phenomena affected in the same direction, whilst in the large balance (52·7 per cent. of the total) one phenomenon was affected without any, if not with converse, variation of the other. He quoted Horsley's statement that nitrous oxide abolished the true reflexes but not the tendon phenomena. Dr. Maskens demonstrated an instrument (tonometer) designed by himself for measuring muscle tone. He had made many observations with it on the same individual under varying conditions of health and surroundings, and on different individuals under constant conditions, and regarded its indications as of value in the study of nervous disease.

Dr. W. B. WARRINGTON (Liverpool) alluded to the fact that the masticatory muscles became atonic when the sensory division of the fifth cranial nerve was cut. He suggested that the paralysis of the eye sometimes found in tabes dorsalis might be of afferent origin.

Dr. WILFRED HARRIS (London) alluded to the "tendon-reflex" in hysterical hemiplegia and paraplegia and in neurasthenia. In the former, which appeared to be due to auto-inhibition of the higher centres, the reflexes were not increased, in contra-distinction to their condition in the latter. He likened the condition of the higher centres in the former, to that of the spinal centres after a total transverse lesion.

Dr. MOTT, in reply, expressed his appreciation of Dr. Maskens's tonometer. He regarded the anterior horn-cells of the spinal cord as being in part "auto-tonic" and as in part owing their "tone" to impulses from the brain and periphery respectively. He made a few remarks on decerebrate rigidity.

Dr. W. B. WARRINGTON then read a paper on

### *The Condition of Nerve Cells in the Spinal Cord after Various Nervous Lesions.*

It had already been shown by the speaker, in cats and in monkeys, that removal of the afferent impulses which normally reached the cells of the anterior cornua *viâ* the posterior roots caused chromatolysis in those cells. The body of a neuron was thus nutritionally dependent, not merely on its own integrity, but also on that of other neurons physiologically correlated therewith. Further experiments had been performed on puppies with the following results: (1) that extra-dural division of the posterior roots caused, in cells of the postero-lateral group in the lumbar enlargement and in the cells of Clarke's column, the same characteristic change; (2) that total trans-section of the cord was accompanied by chromatolysis followed by atrophy of the cells of Clarke's column, without change in those of the anterior horn; and (3) that division of an anterior root caused chromatolysis in most of the cells at the outer part of the anterior horn, but not in those more internally situated. The pictures of cells shown by the method of Nissl were constant under uniform circumstances, but varied with the species of the animal, its age, and the nature of the lesion. It was doubtful whether the method could be relied on to delineate nerve nuclei.

Professor E. W. CARLIER (Birmingham) asked the origin of Nissl's granula and inquired whether interruption of afferent impulses produced the same chromatolysis in a cell as did division of its own axon.

Dr. L. J. J. MASKENS asked whether regeneration followed division of the posterior roots on the central side of the ganglion. He had himself failed to find regeneration under such circumstances.

Remarks were also made by the PRESIDENT, Dr. D. F. HARRIS (St. Andrews) and Dr. F. W. MOTT.

Dr. WARRINGTON replied that he had not studied the origin and nature of the granula. He confirmed Dr. Mott's experience that cutting a posterior root did not produce chromatolysis in the cells of the posterior ganglion.

Dr. T. H. MILROY (Edinburgh) read a paper on

### *The Metabolism of Nucleins in Birds.*

The chief end products of the disintegration of nucleins in mammals were the alloxuric bodies. In mammals assimilation of nuclein increased the amount of alloxuric bodies and phosphates both in the body and in the excreta, and disintegration of nuclein was quoted as the main source of uric acid in these animals. In birds, on the other hand, this source of uric acid had by many writers been given a secondary place, chiefly through Minkowski's experiments on the removal of the liver in geese. The birds survived the operation for so short a time only that the results of the experiments were ambiguous, and Minkowski's supposition as to the synthesis performed by the liver, although plausible, was not demonstrably complete. Dr. Milroy had introduced nucleins, nucleic acid, and alloxuric bases, both in food and subcutaneously, into sundry birds, and had found that there followed an even more pronounced increase in output of uric acid and phosphates than he had observed in mammals. He concluded from this that disintegration of nuclein was not a less important factor in uric acid production in aves than in mammalia.

The PRESIDENT commented on the result of Eck's fistula in mammals, urging that the rôle of the liver in the final stages of nitrogenous metabolism was possibly over-rated.

Dr. W. H. THOMPSON (Belfast) inquired whether Dr. Milroy had examined the output of phosphorus by the bowel.

Dr. W. E. DIXON (Cambridge) commented on the occurrence of Charcot-Leyden crystals in some cases of leucocythæmia and suggested that the said crystals might represent some of the excreted phosphate.

Dr. MILROY replied that he had invariably determined the amount of phosphate excreted by the bowel.

Dr. R. J. ANDERSON, Professor of Natural History in Queen's College, Galway, read some notes on

### *Respiration.*

The interchange of gases between the alveolar air and the atmosphere was effected in part by bellows movements of the lungs and in part by diffusion. The former factor, since the infundibular opening was small, must produce alternate rarefaction and condensation of the alveolar air. Under ordinary circumstances these variations in intra-alveolar pressure did no harm, but when the outlet was obstructed they produced permanent change in the structure of the lung. Professor Anderson had studied the passage of gases

under varying pressures through small apertures and believed that such experiments helped one to realise what occurred in the lung. He explained the factors which governed the rate of passage under such circumstances, and thought that the passage of air into and out of the infundibula was probably slower than was generally believed.

The PRESIDENT, on behalf of Dr. M. S. PEMBREY (London), Dr. W. H. PASSMORE, and Dr. E. T. CLAYTON, read a paper on

*Observations on the Temperature of Man after so-called "Heat-stroke."*

Many observations had been made on the temperature of men suffering from "heat-stroke," but all had hitherto been restricted to the mouth, the rectum, and the closed axilla. The writers had supplemented these by study of the temperature of the skin, (*a*) in the normal subject, and (*b*) in cases of heat-stroke. They found in the former that the deep temperature might be experimentally raised (in some instances as much as 2° F.) by exercise without there being any corresponding increase in the temperature of the skin. In the latter, on the other hand, a rise of from 3·5° to 5·5° F. in the surface temperature had been observed. The writers hesitated to generalise until further observations were made but pointed out the frequent association of heart trouble with cases of "heat-stroke." The expenses of the observations were defrayed out of a grant from the Science Grants Committee of the British Medical Association.

## PATHOLOGY.

### THURSDAY, AUGUST 2ND.

*Discussion on the Pathology of Cirrhosis of the Liver in Adults and Young Children.*

Dr. ARTHUR VOELCKER (London), in his introduction, said that the subject chosen for discussion in that section of the British Medical Association was by no means a new one. It would be remembered that in 1895 a similar subject occupied the attention of the Medical Section of their Association meeting in London, and in 1890 Dr. Saundby read a paper before their Association on the Varieties of Hepatic Cirrhosis. At the Royal College of Physicians of London this year Dr. Cheadle took "Some Cirrhoses of the Liver" as the subject of his Lumleian Lectures. These facts showed that the subject was one of widespread interest and that it was one on which there still existed a diversity of opinion. In the short time at his disposal he should endeavour to bring before them some of the more important points concerned in the pathology of this condition and to invite their contributions to the study of this still obscure process. The term "cirrhosis" as applied to the liver was first employed by Laennec, although the condition had been described by Morgagni and was figured in Mathew Baillie's "Morbid Anatomy." The term originally had reference to the colour of the organ but it had now come to be applied to an increase in the amount of connective tissue in the organ. An increase in the amount of connective tissue in the liver was met with as the result of chronic venous hyperæmia of the organ, but this form of cirrhosis he excluded from the present discussion as it differed in no way from the fibrosis met with in other organs from the same cause. The term "cirrhotic liver" was originally applied by Laennec to the small liver having a granular surface and presenting a yellow colour. This liver, he pointed out, was associated with the presence of ascites and the condition was known as atrophic cirrhosis. Todd pointed out that there was a form of chronic inflammation of the liver which gave rise to a permanent increase in size and consistence of that organ and which was called "hypertrophic cirrhosis." These observations of Todd were confirmed by Cornil, Charcot, Hanot, and others. In 1876 Charcot and Gombault showed that by ligature of the bile-ducts in animals it was possible to produce a hypertrophic cirrhosis which they ascribed to the retention of bile, and spoke of as a biliary cirrhosis. In 1892 Hanot described a particular form of hypertrophic cirrhosis as "hypertrophic cirrhosis with jaundice," a form for which the name of "Hanot's disease" had unfortunately been suggested. Charcot and Gombault showed that in the atrophic form of cirrhosis the newly formed connective tissue was multilobular and annular in distribution, while in the hypertrophic form it was insular and monolobular in distribution. In 1874 Cornil had called attention to the presence of newly formed bile-ducts in cirrhotic livers and had pointed out that these were especially abundant in the hypertrophic form, and Charcot had considered this new formation of bile-ducts in the interlobar tissue as one of the most important features in this form of cirrhosis. Previously to Cornil's observations on the presence of these newly-formed ducts Waldeyer, Liebermeister, Klebs, and others had noted their presence in cases of acute yellow atrophy of the liver, and Wegner had observed them in the atrophic cirrhosis which he produced in animals by the administration of arsenic and phosphorus. In 1880 Ackermann advanced the view that the difference between atrophic and hypertrophic cirrhosis was not a question of a multilobular or of an insular sclerosis, but rather one of the origin of the newly-formed connective tissue. He urged that in the atrophic form the atrophy of the liver cells was the primary condition and that subsequently there was a proliferation of connective tissue starting in newly-formed blood-vessels in connexion with the hepatic artery, while in the hypertrophic form the connective tissue originated from the pre-existing connective tissue around the central and portal veins. As a consequence of this different origin of the connective tissue he explained the tendency of the former variety of connective tissue to retract and so give rise to the atrophic cirrhosis, while the latter gave rise to the hypertrophic form, having no such tendency to retract. In both varieties newly-formed bile-ducts were present. It would be noted that Ackermann's attention was directed not only to the connective tissue but also to the liver cells. He and Kundrat and others had already shown that in the cirrhotic liver the areas inclosed by connective tissue did not correspond to the lobules of the liver. They showed that in cirrhosis the lobules of the liver must be partly destroyed, because in a section there were seen fewer central veins than in a normal liver, and that if the lobules were merely compressed they should find more instead of fewer acini in a given area. Kretz, examining serial sections of cirrhotic livers, had noted that in some cases there was only one liver granule possessing a central vein where normally there should have been eight or nine. Besides this alteration in size it was to be noted that the sub-lobular vein was no longer central in position and that the hepatic cells had lost their radial arrangement. These appearances of the liver cells bearing a very close resemblance to those observed by Ponfic in his experiments on the regeneration of liver tissue after the removal of portions of the organ gave rise to the view that in cirrhosis they had to do with a destruction and regeneration of liver tissue going on side by side. With this destruction of liver tissue they found alterations in the hepatic capillaries, and according to Kretz it was these changes in the hepatic capillaries that gave rise to the portal congestion and ascites. The classification of cases of cirrhosis into multilobular, monolobular, and pericellular had been shown to be hardly exact, and Ackermann, Stadelmann, and Orth were of the opinion that there was no essential distinction between the atrophic and hypertrophic forms, or between the perilobular, pericellular, and multilobular varieties of hepatic cirrhosis. From this view, however, Rosenstein dissented. Most observers agreed that the pericellular distribution of the connective tissue led to the hypertrophic form of cirrhosis, yet Ackermann and Stadelmann denied that this distribution was peculiar to hypertrophic cirrhosis. An examination of a number of sections of cirrhotic livers left Dr. Voelcker with the impression that there was a very distinct difference between the peripheral and the intercellular forms of cirrhosis, and while it was true that in the peripheral forms of sclerosis (the multilobular and monolobular forms) there was met with a slight degree of intercellular sclerosis, and in the intercellular form a slight degree of peripheral sclerosis, yet there was never any difficulty in determining to which category to refer the chief change, though he did not think that a microscopical section would enable one to form an accurate idea of the naked-eye appearances of the organ. In this respect the liver closely resembled the kidney. An attempt to classify the various forms of cirrhosis of the liver presented as many difficulties as in the case of the kidney, but he thought that they would do best if they adopted a classification which related to the physical condition of the organ rather than to any etiological consideration or to any symptomatology; thus a classification into alcoholic and non-alcoholic cirrhoses must be unsatisfactory when they did not know what particular change alcohol would produce in a given liver. Again, a classification based on the presence or absence of jaundice

was no more rational than would be a classification of interstitial nephritis based on the presence or absence of uræmia. To the morbid anatomist the chief considerations were—what was the size, what was the character of the surface of the organ, and what were the changes in the interstitial tissue and the parenchyma of the organ? Cirrhotic livers might be large, normal, or small in size and weight; they might be smooth or granular on the surface; the fibrous tissue might be mainly in the periphery of the granules or might be chiefly intercellular, and lastly, the liver cells might be atrophied, fattily degenerated, or show regenerative processes. The processes might be acute or chronic. An example of acute cirrhosis was seen in the condition known as acute yellow atrophy in which Dr. Findlay of Glasgow had shown that in addition to a proliferation of the liver cells at the margin of the hepatic lobule there was also a condition of acute cirrhosis. This had been described by Obrzut in 1886 and claimed by him to be similar to the atrophic cirrhosis of Laennec and the hypertrophic cirrhosis of Hanot, Sabourin, and Charcot. The chronic forms they could divide into those in which the chief change occurred in the parenchyma, the fibro-fatty form, and those in which the interstitial connective tissue was more particularly affected. Of these cases there were those in which the distribution of the connective tissue and its tendency to retract gave the organ an irregular surface tending to produce the hobnailed liver, and those in which the intercellular distribution of the connective tissue caused a more uniform enlargement of the organ. Microscopical examination of a number of specimens of cirrhotic livers inclined him to the belief that the hobnailed livers, both large and small, were those in which the newly-formed connective tissue would be found to have chiefly a portal distribution, while the extremely hard, enlarged, smooth livers were those in which they found a pericellular sclerosis. The nature of the granules seen on the surface of the hobnailed liver had given rise to some discussion. At first it was thought that they were lobules of the liver which had undergone fatty change and had been compressed by the retraction of the connective tissue, but it was now recognised that the liver cells were often quite free from any fatty change and frequently showed signs of active cell division; the yellow colour was mostly the result of bile staining. It was interesting in this connexion to note that the granules seen on the surface of some cirrhotic kidneys showed similar regenerative processes. With regard to the origin of the connective tissue they had seen that Ackermann held that in the atrophic form of cirrhosis the connective tissue was derived from the newly-formed branches of the hepatic artery while in the hypertrophic form they had to deal with a hyperplasia of the normal connective tissue existing in the interlobular and intralobular hepatic areas. According to Hanot in the atrophic form the connective tissue originated from a portal cirrhosis, while in the hypertrophic form it arose around the biliary canaliculi—that was to say, that they had evidence of an angiocholitis and peri-angiocholitis. Hamilton described the formation of connective tissue from the liver cells themselves. According to de Jong the newly-formed intralobular connective tissue had its origin from the endothelium of the intralobular capillaries, while the increased perilobular connective tissue chiefly arose from the pre-existing perilobular connective tissue and the changes were perivascular. In a very able article in the *Recueil de Travaux du Laboratoire* Boerhaave de Jong figured the development of the new connective tissue from the endothelial cells of the intralobular capillaries. Liebermeister distinguished three different forms of cirrhosis: (1) a portal form in which the connective tissue originated from the portal vein; (2) a biliary cirrhosis in which it originated from the connective tissue around the bile-ducts; and (3) a mixed form in which it was derived from both sources. There was another point on which there was still a difference of opinion and that was, Was the primary change in the liver cell and was the cirrhosis secondary to this, or was the fibrosis primary and were the changes in the liver cells secondary? Ackermann held that in atrophic cirrhosis the primary change was in the liver cell and that the cirrhosis was secondary to this, but they must remember that they frequently found degenerative changes in the liver cells without any cirrhosis. Kretz pointed out that in hepatic cirrhosis after the degeneration of liver cells the residual tissue of the recognisable acini presented all stages from the framework of the vessels of the lobule up to a poorly vascularised sclerosed connective tissue containing bile-ducts. He regarded cirrhosis as a local, widespread, recurrent, chronic degenerative process, associated with regeneration of the parenchyma. Opposed to this view they had the one that the changes in the liver cells were secondary to the pressure of the connective tissue. Although it was true that they did find degeneration of the liver cells with cirrhosis, yet there was no relation between the amount of cirrhosis and the degree of degeneration. Sieveking had shown that the presence of connective tissue around liver cells was not necessarily associated with any degeneration of the cells. It seemed to Dr. Voelcker to be most reasonable to see in cirrhosis of the liver the effects of one or more poisons on the liver cells and also on the connective tissue, and the occurrence of degenerative or regenerative processes would depend on the nature of poison and on the power possessed by the liver cell to resist it. Another element present in the cirrhotic liver which might occupy their attention was the formation of new bile-ducts, the pseudo-biliary canaliculi. Charcot and Gombault considered that these newly-formed ducts were the essential change in the hypertropic form of cirrhosis, but they knew now that not only were they present in other forms of cirrhosis but that they were seen in aseptic inflammatory foci in the liver, in acute yellow atrophy, and in poisoning by phosphorus. They were met with in cases in which there was jaundice as well as in those in which jaundice was absent. It was at first thought that they were not new bile-ducts, but merely the pre-existing ones rendered visible by the atrophy of the surrounding liver cells, but this view was now abandoned. The origin of these ducts had been ascribed by some to a transformation of the intralobular bile canaliculi and by others to a direct retrogressive metamorphosis of the columns of liver cells. Ackermann thought that the epithelium of the interlobular bile-ducts proliferated and spread down into the interior of the dilated bile capillaries, thus giving rise to new canaliculi while the liver cells disappeared. De Jong, on the other hand, had traced the actual continuity of columns of liver cells and the new bile-ducts and he figured sections of imperfectly formed tubules partly lined with liver cells and partly with bile-duct epithelium. It was certainly interesting in this relation to reflect on the high degree of metaplasia with which pathologists had endowed the liver cell, for they had already been asked to accept the fibrous tissue in cirrhosis as derived from the liver cell. Dr. Voelcker confessed to a certain amount of scepticism as to the nature of these so-called ducts. They always suggested to him lymphatics or blood-vessels. He could not find any record of their having been injected from the bile-ducts. It certainly was true that in many cirrhotic livers one could see columns of liver cells especially at the margins of a granule becoming elongated and thinned out and flattened, but it was very difficult to understand how such damaged cells should give rise to bile-ducts lined with cells the staining powers of which certainly suggested very great vital activity. The etiology of hepatic cirrhosis still remained obscure although their views had considerably enlarged since the days when alcohol was regarded as the cause of cirrhosis. In the *Quarterly Medical Journal* for July, 1899, Rolleston gave an admirable summary of the origin of, and ways in which, various poisons reached the liver and set up cirrhosis. With the object of seeing if alcohol would account for the cases of hobnailed liver Dr. Voelcker had examined the notes of all the cases of hobnailed livers which he had met with in the post-mortem room at the Middlesex Hospital during the time he was pathologist and found in the 36 cases referred to below 15 in which an abuse of alcohol was acknowledged, nine in which an abuse of alcohol was denied, and 12 in which the history was not mentioned. He found that out of 2020 necropsies of which he had records there were 149 cases of cirrhosis of the liver (that was excluding those cases where the condition was evidently due to chronic venous hyperæmia). This showed a percentage of 7·3 cirrhotic livers in cases of all ages. Of these the liver was hobnailed in 36 cases—that was to say, that nearly 25 per cent. of the cirrhotic livers were hobnailed. The percentage of hobnailed livers to all the cases was 1·8 per cent. In 10 cases the liver was enlarged and smooth and in only one of these cases was there any jaundice present and it was only slight. Of these 10 enlarged livers only nine were weighed and the average weight of the nine was 104 ounces. Of the hobnailed livers he had records of the weights of only 22 The average weight was 64·4 ounces, the lightest being 44 ounces, and in only eight was the weight below 60 ounces. Jaundice was present in only 11·4 per cent. of all cases of cirrhosis, but was present in over 30 per cent. of the

hobnailed cases. The average weight of the livers in the cases in which jaundice was present was 60·2 ounces. In the hobnailed livers no relation could be traced between the size of the organ and the occurrence of jaundice. Among the 149 cases of cirrhosis there were only five occurring in children, and of these three were undoubtedly the subjects of congenital syphilis. With the object of comparing the incidence of cirrhosis of the liver in children Dr. Voelcker had examined the records of the Hospital for Sick Children and found details of 4278 necropsies on children under 12 years of age. Amongst these he could only find 23 cases of cirrhosis—that was only in 0·54 per cent. Jaundice was present in eight cases out of the 23. Hobnailing was present in 13 cases—a much larger proportion than in the adult cases. It was commonly asserted that the hobnailed liver was the result of spirit-drinking and that malt liquors caused fatty degeneration of the liver cells. He had tried from the clinical notes of the cases of hobnailed livers to see if he could confirm this and he found that he could not. It was very difficult to obtain reliable statements as to the amounts and form in which alcohol was taken and specialism in alcohol-drinking was not usually a characteristic of hospital patients. In a few cases in which beer was exclusively taken the average weight of the liver was 63·8 ounces, while when spirits alone were owned to the average weight was 66·3 ounces. These observations were made on far too few cases, but they confirmed the view expressed by Foxwell that the large livers were rather more common in spirit-drinkers than in beer-drinkers. They also showed that the "gin-drinker's liver" could be produced by beer. Alcohol undoubtedly played an important part in the production of cirrhosis of the liver, but the way in which it acted was as yet uncertain. Alcohol administered experimentally to animals produced fatty degeneration of the liver cells, and though some observers had produced cirrhosis he could find no record of the production of a hobnailed liver. Apart from alcohol they now knew of a number of substances which were credited with the production of cirrhosis and it was to be hoped that further research in this field might enable them to prevent the formation of those poisons which they must assume gave rise to the liver changes. Professor Flexner had already shown that cirrhosis could be produced by chronic poisoning with certain vegetable alkaloids. The action of these poisons had led them to look outside the liver and the intestinal canal for the source of the substances causing cirrhosis and particular attention had been drawn to the spleen. Enlargement of the spleen was very common in hepatic cirrhosis but did not bear any direct relation to the size of the liver or to the degree of ascites. Chauffard suggested that some forms of hepatic cirrhosis were splenic in origin and due to poisons formed in the spleen and in the rare disease known as the *maladie de Banti* it was stated that removal of the spleen caused an arrest of the disease. The enlargement of the spleen in hepatic cirrhosis was explained by Charrin as being due to the spleen taking on some of the antitoxic functions of the liver which were interfered with by the destruction of the liver cells. Changes had also been observed in the pancreas bearing a close resemblance to those found in the liver. In the kidneys chronic interstitial nephritis was not uncommon and Dr. Voelcker found that in nearly 10 per cent. of his cases of cirrhosis of the liver the cause of death was due to the renal and not to the hepatic condition. Of course, it must be remembered that here age played an important part, but he found that in exactly one-third of the cases of cirrhosis of the liver death took place at or before 40 years of age. This hurried review of some of the debateable points concerning the pathology of cirrhosis would, Dr. Voelcker hoped, serve as an indication of the lines along which discussion might advance their knowledge. The points which seemed to him to call more especially for discussion were:—1. Could they distinguish between the various forms of cirrhosis microscopically and macroscopically? 2. What was the source of the newly-formed connective tissue? 3. What was the nature of the so-called newly-formed bile-ducts? 4. Under what conditions could cirrhosis of the liver be experimentally produced? 5. Did cirrhosis in children differ essentially from cirrhosis in adults?

Professor SIMON FLEXNER (Philadelphia) said that Dr. Voelcker had so ably summed up their present knowledge of cirrhosis and so definitely emphasised the problems which most pressed for solution that in speaking on any topic of the discussion one could hardly avoid repetition. He himself proposed to consider three points: first, the experimental evidence that lesions of the liver cells preceded changes in the connective tissue; secondly, the nature of the new tissue formed in cirrhosis and its distribution; and thirdly, the common cause of death in the disease. Professor Flexner's experiments included the inoculation of guinea-pigs and rabbits with bacterial poisons, with poisons from higher plants, and with certain animal substances. The chief results had been obtained with ricin and abrin, and with blood-serum from the dog injected into rabbits. In these experiments the primary effects of the poison were exerted on the liver cells. Necroses, involving few or many cells and hyaline in appearance, were common. In animals which died from acute poisoning these necroses were the principal and, excepting a moderate leucocytic infiltration, the only important lesions. When the animals survived for some weeks proliferative changes in the connective tissue with the production of so-called newly-formed bile-ducts were produced. When the new growth of tissue came from the surface capsule indentation of the organ was produced, suggesting the surface granulation in atrophic hepatic cirrhosis. Whilst these results were suggestive of the part played by a primary degeneration and necrosis of the parenchyma they failed to clear up entirely the question, in that they did not exactly reproduce the morbid appearances seen in hepatic cirrhosis in man. They had been in the habit of looking upon the new connective tissue found in cirrhosis of the liver as being of the nature of white fibrous tissue. But as a matter of fact it was more complex in structure. The liver contained, normally at least, three kinds of connective tissue: (1) white fibrous tissue, in the interlobular spaces and on the surface capsule chiefly; (2) reticulated connective tissue within the hepatic lobules; and (3) elastic tissue, chiefly about the blood-vessels, and to a less extent on the walls of the bile-ducts, in Glisson's capsule, and on the surface capsule. Very rarely a trace of elastic tissue might be seen in the walls of the central veins. A study of tissues from cirrhosis after ordinary staining, then after digestion with pancreatin, and finally after staining by Weigert's method, showed that not one only but all the connective tissues enumerated were increased or altered. The most surprising result was the great amount of elastic tissue found in the perilobular new growth of connective tissue, which elastic tissue was now found also within the lobules. There were differences in the amount and method of distribution of this tissue, as well as in the alteration on the intralobular reticulum, in the "atrophic" and "hypertrophic" forms of cirrhosis which time would not allow to be discussed now. The specimens shown would enable some of the differences to be appreciated. Finally, Professor Flexner referred to the statement made by Professor Osler to the effect that "it is paradoxical but true that few of our patients die of the diseases from which they suffer." Professor Osler was more especially speaking of the causes of death in chronic diseases, recognising that in the last event it was not the sudden failure of hepatic, or renal, or of cardiac capacity that ushered in the end. In most cases, so far as they could now understand, the end was actually due to a bacterial infection. Professor Flexner's own study of several hundred cases of chronic disease which had been investigated bacteriologically had convinced him of the importance of such terminal infections. The chief micro-organisms concerned were the pyogenic cocci. They might, moreover, occur as causes of local infections—especially in inflammations of serous membranes—or they might exist in the form of a general invasion—a bacteræmia. The portal of entry might, or might not, be discoverable clinically or at the necropsy. It might be through an angina, an old ulcer (as on the leg), or as the result of a trifling surgical operation, as in paracentesis. Or it might baffle every attempt at its discovery, and then they spoke of the infection as having been cryptogenic. And it was in this way that the end often came in cases of cirrhosis.

Mr. A. G. R. FOULERTON (London) presented a contribution to the discussion from Professor LUDVIG HEKTOEN (Chicago) on Experimental Bacillary Cirrhosis. Without entering into the broad questions of the etiology and genesis of cirrhosis of the human liver Professor Hektoen wished to refer briefly to some recent demonstrations made in his laboratory of cirrhotic processes in the liver of lower animals directly induced by two different bacilli. The observations had seemed to him to be of some interest in their suggestiveness of a somewhat similar course of events in some instances of human cirrhosis.

Similar more or less acute infections in man might produce a diffuse growth of new connective tissue in the liver. Then whilst the bacteria might be destroyed and the immediate effects of their presence pass away the newly-formed tissue would remain, and as it contracted a vicious cycle would be established—the pressure of the resultant fibrous tissue causing necrobiosis of the hepatic cells and this in its turn leading to renewed, more or less slow, but progressive, connective tissue proliferation. With time, aided perchance by other superinduced factors, extensive contraction of the liver would result. One of the series of observations now referred to was conducted by Dr. G. H. Weaver, and the main results had already been published under the title of "Cirrhosis of the Liver in the Guinea-pig Produced by a Bacillus and its Products."[1] The bacillus belonged to the colon group and was isolated from a guinea-pig which had died a natural death. The bacillus lost its virulence rapidly and before sufficient experiments had been made to establish clearly the relation between the necrotic and proliferative changes on the liver. With early death only necrotic and degenerative changes were found in the liver; in animals which lived longer proliferation of connective tissue was associated with necrosis; and in others again a cirrhosis had entirely replaced the degenerative changes. These interesting changes were found only in guinea-pigs, showing well the influence of species; they were caused by the inoculation of devitalised as well as of living cultures. The second series of experiments concerned a bacillus which might be placed in the pseudo-diphtheria group. It was isolated from the lesions of a case of blastomycetic dermatitis of the hand. Inoculations in various ways with this bacillus had been found to induce with a fair degree of consistency more or less necrosis and diffuse cirrhosis of the liver in guinea-pigs. Unfortunately, this bacillus also lost its virulence before many of the experiments planned could be completed. It would have been of the greatest interest to follow up the subsequent course of the cirrhosis set up in some of the animals. After a full description of the cultural characteristics of the bacillus Professor Hektoen mentioned his experiments on animals. In guinea-pigs the subcutaneous injection of about one cubic centimetre of a bouillon culture produced in from two to four days a marked hard infiltration beneath the skin, followed by the development of more or less extensive punched-out ulcers, which usually healed up after a time. The animals became thin and died in from three to five weeks. The essential change found post mortem was necrosis with cirrhosis of the liver. The bacillus could usually be recovered from the internal organs and from the cutaneous ulceration. Occasionally the local reaction failed to take place and the animals at times recovered. In a few instances local infiltration and ulceration took place, but no other changes were found. The general results with intraperitoneal injection were similar but not so constant. Intravenous or subcutaneous injection of one cubic centimetre of bouillon culture into rabbits did not make the animals sick or produce any change in the liver. Inoculation into the anterior chamber of the eye of a full-grown, medium sized rabbit resulted in great emaciation and death after 24 days with cirrhotic and other changes in the liver. The subcutaneous injection of two cubic centimetres of bouillon culture in a dog gave rise to a huge swelling which gradually subsided. The animal was killed with chloroform six weeks after the injection. The liver was of about normal size, finely uneven, with occasional single greyish dots or groups of dots. There was a slight sensation of grating on cutting the organ. Microscopical sections showed numerous small intralobular islands of recently developed connective tissue cells as well as of small cells with deeply stained irregular nuclei. There were also branching bands of recent connective tissue along the vessels. Inoculation of a grey mouse with 0·3 cubic centimetre and of a white mouse with two cubic centimetres of a bouillon culture made the animals sick for a time. But both recovered, and when killed on the twenty-first day their livers were found to be normal. Photographs of microscopical sections were shown which demonstrated the cirrhotic change produced in the liver of the guinea-pig by both the bacilli to which Professor Hektoen had referred.

*Dr.* LAZARUS-BARLOW (London) said that the two chief points upon which he would like to lay stress referred to the pathology of atrophic cirrhosis in adults and in children. In the case of the atrophic cirrhosis of adult life he thought that the old idea that the condition depended chiefly upon an undue indulgence in alcohol and especially on the abuse of ardent spirits was correct, and he did not propose to enter into the question of etiology at all. But when they came to the question whether the condition was "inflammatory," as was at one time the universal idea and as was still held by some noteworthy authorities, he thought that they were on very doubtful ground. It was certainly curious that they should never have been able, supposing that the change were inflammatory, to point out a specimen as showing an early stage of the fibrosis comparable with the early stages of true inflammatory fibrosis which was so common a condition, and one which carried such a definite microscopical picture with it. That they under certain conditions met with an atrophic fibrosis which was accompanied with the presence of a small cell infiltration amongst the adventitious fibrous tissue was indubitable. Such cases were, however, in his experience extremely rare; and even then the fibrous tissue that was present was of a well-formed type, and was totally unlike the material composing a young cicatrix, for example. In these rare cases his own opinion was that they had to do with the superposition of a genuine attack of inflammation on a tissue which was already the seat of a chronic fibrosis, but he did not think that they aided them in any other than a negative manner to arrive at a conclusion upon the pathology of the underlying fibrosis itself. If they considered the fibroses as a distinct class of pathological change in which extreme chronicity was one of the predominating features they could include under one heading (*a*) senile fibroses of all kinds, (*b*) cirrhosis of the liver, (*c*) chronic granular kidney, and (*d*) the scleroses of the nervous system. Now in the case of the scleroses of the nervous system there had never been any tendency to consider the fibrotic change as inflammatory, but, on the contrary, it had always been recognised that the adventitious fibrous tissue replaced nervous tissue which had degenerated—that was to say, the essential elements of the part degenerated first and the overgrowth of neuroglia took place subsequently to fill up what they might speak of as a potential lacuna caused by the death and degeneration of the nervous elements. It was unnecessary for him to pursue this matter further; he merely wished to draw the inference that in the case of hepatic cirrhosis they had first a destruction of the hepatic cells themselves, be it as the result of the action on them of alcohol or of some of the bacterial poisons, and that subsequently there occurred an overgrowth of the normal fibrous tissue of the liver to fill up a potential lacuna. Naturally in any microscopical picture they would find these features side by side, but since the destruction of hepatic cells must be a more or less gradual process, otherwise the onset of the disease could not be so insidious as it undoubtedly was, there was every reason to expect that signs of a rapidly forming and young fibrous tissue would be wanting, and this was just what they found to be actually the case. It might of course be urged against this view that the dead and degenerating hepatic cells, being foreign bodies, acted as irritants, and that in consequence the fibrous tissue was of the same nature as the fibrous tissue of a cicatrix. To these objections he would suggest that upon this view their conception of inflammation would have to be widened until it embraced the whole of pathology with the exception of the new growths. While he would express his belief that the pathology of the fibroses was as he had indicated, he thought that this was especially likely to be the case with the atrophic fibroses of the liver. With reference to the so-called unilobular or biliary cirrhosis the matter was very difficult. He had never been able to satisfy himself of the separate existence of this variety as a distinct histological type. That large and fairly smooth livers of considerable weight in which there was a widespread and small-meshed fibrosis were met with, was true, though they were by no means common. But he had never been able to convince himself in the few cases that he had examined either that the condition was unilobular or that it had any special relationship with the bile-passages. Intercellular or pericellular cirrhosis was in a special class by itself, and that variety, too, he would leave on one side. But there was a variety of hepatic fibrosis which was usually very intense and which led to a more marked lobulation of the surface of the liver than any but the most extreme cases of adult atrophic fibrosis exhibited, and to these he would like to refer. These

[1] *Transactions of the Chicago Pathological Society*, 1900, iii., p. 228.

cases were not very common; they affected children at an older age than was the case with intercellular fibrosis (usually the patients were from 10 to 16 years of age), they were often associated with great ascites and with a well-marked jaundice of a greenish hue, and distension of the abdominal superficial veins was, as a rule, considerable. The cases were sometimes of long duration, at times extending into years, but they progressively became worse and ultimately the patient died in the same manner as the adult who was the subject of ordinary atrophic cirrhosis. That alcohol might play its share in the production of this variety of hepatic fibrosis was quite possible, but the view which he first heard put forward by Rolleston seemed to him to be more in accordance with the facts. Rolleston had suggested that this form of cirrhosis was really a late manifestation of congenital syphilis, not in the sense that it was a distinctly syphilitic lesion, but that the syphilitic poison when it acted upon the liver cells of the fœtus to a degree less than that which was necessary for the production of the typical syphilitic intercellular cirrhosis damaged them, and thus placed the liver in an exceptionally vulnerable position. When, then, some factor arose which would be without effect upon the healthy liver but which completed the injury commenced in intra-uterine life by the syphilitic poison, the way was laid open for the occurrence of that fibrous tissue hyperplasia which ultimately characterised the hepatic condition. The great difficulty in the way of the suggestion that had just been put forward was the fact that a syphilitic history was, in the cases which they were considering, often very poor, or, indeed, was quite wanting. Though they might say that this was just what they should expect it considerably reduced the possibility of proving the point. At times, however, as in a case which he had brought before the Pathological Society of London last year, collateral evidence was fairly strong. In any case an explanation of the pathology of this variety of hepatic fibrosis was difficult, but on the congenital syphilis hypothesis many of the difficulties vanished.

Dr. WAKELIN BARRATT (Wakefield) thought that considerable light was thrown upon the pathology of hepatic cirrhosis by the numerous attempts which had been made of late years to produce this condition experimentally in animals. Most of these experiments—such, for example, as the administration of drugs by the mouth or the alteration of an animal's usual diet—had afforded results which either were inconstant or were incapable of being carried to an extreme degree and were further open to the objection that the whole of the liver was affected and thus the general metabolism of the animal was disordered. The only means of producing hepatic cirrhosis strictly localised in extent and gradually becoming intense in degree was by ligature of one of the bile-ducts and this method alone possessed the character of being simple in so far that a fraction only of the liver was involved and that no general effects were produced, the functions of the liver being carried out without any recognisable impairment by the remaining portion of this organ. Only this mode of production of hepatic cirrhosis would therefore be considered now, since it alone possessed the constancy and certainty of effect on the one hand and the definite limitation of area on the other hand which were necessary to scientific investigation. The earliest observer who ligatured a single bile-duct in the investigation of hepatic cirrhosis was Nasse[2] who in 1894 by this means succeeded in producing increase of interlobular connective tissue. About the same time Josselin de Jong[3] performed similar experiments. When strict antiseptic precautions were used he could find no change in the liver. In 1897 Professor Vaughan Harley and Dr. Barratt had commenced to investigate the effect of ligature of a single bile-duct.[4] They were not aware at this time that other observers had worked in the same direction. Their experiments, which were aseptic throughout, were made upon cats and dogs and showed that cirrhosis always resulted in the corresponding liver area when a single bile-duct was ligatured. The general health of the animals was not impaired, though the cirrhosis, which was always limited in distribution, was slowly progressive in the affected area. Microscopic examination showed that in the area of the liver corresponding to the ligatured duct there was a development of interlobular connective tissue, rich in elongated nuclei, together with marked hyperplasia of the biliary ducts, presenting in this respect an exaggerated picture of what was seen in human hepatic cirrhosis. The larger bile-ducts were dilated and tortuous and the affected hepatic lobules were much diminished in size. Sometimes multi-nucleated cells were seen in small collections in the interstitial tissue. There was no appearance of jaundice or ascites. Their observations, which were continued over lengthened periods of time, furnished a complete demonstration of the fact that simple ligature of a single bile-duct produced cirrhosis in the corresponding liver area. Owing to the simple nature of the operative interference and the good general health which the animals subsequently enjoyed many of the disturbing factors which were present in the human subject were here absent and the problem of the mode of production of the changes in the liver was reduced to its simplest form. It was clear, also, that the processes which were effective in experimental cirrhosis must also under analogous circumstances be in operation in the human subject. After ligature of a bile-duct the functions of the corresponding area of the liver were not abolished. Bile continued to be secreted and was found in the bile-ducts, just as in the human subject bile continued to be formed, giving rise to jaundice, after complete obstruction of the ductus communis choledochus. It would appear that this continued secretion of bile after ligature was a most important factor in the production of cirrhosis. It was well known that fluids injected under increased pressure into the biliary passages found their way into the circulation. This was generally regarded as wholly osmotic in its nature, though it did not appear certain that the absence of rupture of some of the finer biliary passages could be altogether excluded.[5] When bile thus escaped from the blocked biliary passages it entered in the first instance the lymph spaces.[6] It then of necessity acted as a slow irritant, and it would appear that the interlobular fibrosis which took place in the affected area must be attributed essentially to this factor. To the increased pressure of bile in the biliary passages must also be attributed the dilatation of the larger bile-ducts and the hyperplasia of the smaller ones which was so striking a feature in experimental cirrhosis. The atrophy of the liver lobules in the ligatured area appeared to be due to the irritation of escaped bile acting upon the cells at the periphery of the lobule; it was not readily explicable as a pressure effect. The above was a short outline of the leading characters of experimental hepatic cirrhosis, due to the blocking of the biliary channels coming from a limited area of the liver, a cirrhosis which might truly be termed "biliary." Further experimental work was still required to determine the extent to which hepatic cirrhosis in the human subject was to be regarded as of the same nature as the extremely simple experimental form which had here been described. The study of hepatic cirrhosis was in fact reduced to its simplest conditions when a purely localised cirrhosis was produced by a lesion which involved a fraction of the liver only, leaving the rest of the liver, as well as distant organs, unaffected, and producing no recognisable change in the general condition of the animal.

Dr. T. D. LISTER (London) referred to the case of a boy, aged five years, who died after an illness lasting for about 13 days. The main symptoms had been vomiting and straining at stool. The stools consisted mainly of mucus and blood, and were passed frequently. The vomited matters had contained blood during the last four days of the illness. At first an intussusception had been suspected and an exploratory laparotomy was performed a week before death. The post-mortem examination showed a diffuse ulcerative colitis, intense congestion of the gastro-intestinal tract, and blood everywhere on the mucous surface of the stomach and the small and large intestines. The liver was very pale, somewhat fatty, rather firm, but gave no lardaceous reaction; there was no irregularity or thickening of the capsule, and a normal resistance to laceration. There was nowhere any evidence of congenital syphilis and the family history was good in this respect. Microscopical sections of the liver were shown. Dr. Lister considered that the case was a suggestive instance of the association of an acute interstitial hepatitis with an acute diffuse hæmorrhagic ulcerative catarrhal colitis of uncertain origin, which had caused death by hæmorrhage and exhaustion.

[2] Semaine Médicale, 1894, p. 202.
[3] Cirrhosis Hepatis, Inaugural Dissertation, Leyden, 1894.
[4] For a preliminary account vide Brit. Med. Jour., Dec. 10th, 1898.
[5] Cp. Wakelin Barratt: On the Effect on Injecting Dilute Sulphuric Acid into the Common Bile-duct, Journal of Pathology and Bacteriology, 1898, pp. 340-347.
[6] Vaughan Harley: Leber und Galle während dauernden Verschlusses von Gallen und Brustgang, Archiv für Anatomie und Physiologie, 1893, p. 291.

Dr. THEODORE FISHER (Bristol) did not agree with the view which looked upon all examples of increase of fibroid tissue in the internal organs as the result of degenerative changes in the more important elements. In acute and subacute inflammations of the kidney the interstitial tissue was often extensively affected, and although no doubt most forms of fibroid disease of the heart might truthfully be described as the consequence of degeneration there could be no doubt that in acute myocarditis the interstitial tissue sometimes suffered as severely as the muscular fibres. Some of the acute and subacute inflammations of the kidney were due to septic micro-organisms or their products, and he believed that an interstitial hepatitis might arise in the same way. Dr. Fisher had seen cases which seemed to bear out the view suggested by the experiments of Professor Hektoen, that septic infections might set up cirrhosis of the liver. In a woman, aged 22 years, who died from septicæmia two months after an operation for suppurative appendicitis, extensive acute cirrhosis of the liver was present. Not only was there active proliferation of the connective tissue, but as in the cases of inflammation of the liver produced by Professor Hektoen, a guinea-pig's, multinuclear leucocytes were present in considerable numbers in the intralobular capillaries, while other leucocytes outside the capillaries ran up between the columns of liver cells. Another interesting case was that of a woman, aged 26 years, who died after three months' illness from chronic pyæmia. The naked-eye appearances of the liver were unlike those of any other liver which he had seen, and at first sight almost suggested pictures of acute yellow atrophy of the liver. The yellow, fattily-degenerated, liver substance was cut up into areas of all shapes and sizes by fibrous tissue of peculiar translucency and of bright reddish flesh-colour. Two other interesting cases of acute cirrhosis of the liver had been met with. One was in a boy, aged four years, who had died after three weeks' illness from broncho-pneumonia (which in most instances might be looked upon in children as an evidence of septicæmia), and the other in a case of suppurative peritonitis, pleurisy, and pericarditis occurring in a boy, aged 13 years. In these cases the naked-eye evidence of cirrhosis of the liver was much less marked. In one case thread-like lines surrounded the lobules, in the other microscopical sections alone revealed the morbid changes. A case of Banti's disease occurring in a man, aged 19 years, was also referred to. It was thought that if Banti's theory of the pathology of this disease be correct it must be similar in nature to the above cases. The history of the case, taken in connexion with the view that infection took place through the spleen, was interesting. On four occasions during the space of two years the patient had been admitted to the Bristol Royal Infirmary with a raised temperature, complaining of pain over an enlarged spleen. On the fourth occasion he died. At the necropsy, in addition to the enlarged spleen, which weighed 29½ ounces, multilobular cirrhosis of the liver was present.

Dr. JAMES L. MAXWELL, jun. (London), pointed out the close resemblance in the appearance of sections of cirrhosis of the liver after ligature of one of the bile-ducts and of the changes found in sections of the liver in congenital atresia of the hepatic duct. In two cases of the latter condition which he had examined the same position of the fibrous tissue was seen and the same freedom of the unaffected hepatic cells from any intercellular cirrhosis was noted. There was a further resemblance in the multiplication of bile-channels, many of which contained inspissated bile. Dr. Maxwell also questioned the value of Dr. Voelcker's statistics of cirrhosis of the liver in children, taken as they were from the post-mortem room. He urged that very frequently in pericellular cirrhosis there was no change in the naked-eye appearance or in the shape of the liver. He mentioned two cases of extreme cirrhosis of the liver in infants with congenital syphilis which he had examined in which there were no obvious macroscopical changes. Also in stillborn children it was comparatively common to find advanced forms of cirrhosis and again without any macroscopical evidence of the changes. In these cases there was not a fibrosis in the proper sense of the word but a large increase of the connective tissue element between the individual hepatic cells. He was inclined to think that this cellular element would have developed into the ordinary fibrous tissue in such a child had it survived birth.

Dr. STUART MCDONALD (Birmingham) referred to a case of cirrhosis of the liver in a girl, aged 15 years, which terminated fatally with hæmorrhage from a rupture in a clump of varicose veins situated in the wall of the stomach close to the cardiac end. There was found post mortem a typical atrophic cirrhosis of the liver. Microscopically the distribution of the fibrous tissue was mainly perilobular, but in places the new tissue was extremely cellular and could be seen definitely to be invading the periphery of the lobules. There was also clear evidence of increased bile-duct formation. The spleen was enlarged and showed an increase of its fibrous stroma. The other organs appeared to be healthy. There was no history of any previous illness of any kind except an attack of measles some years previously. There was no evidence of alcoholism or of syphilis, congenital or acquired.

Dr. VOELCKER in his reply stated that he had brought forward his statistics derived from the practice of a general hospital with the object of showing the relative occurrence of cirrhosis of the liver. He pointed out that the chief ages at which cirrhotic livers were found were either in the first two or three years of life or between the ages of eight and 10 years, and then not again until after 25 years. From this he concluded that severe and frequent intestinal catarrh, to which children were so prone, could have little, if any, effect on the production of the cirrhosis. It was known that in enteric fever areas of necrosis of liver tissue, followed by a localised fibrosis, occurred; but again he did not think that this could play any part in the production of a cirrhosis. In the case of children it was certainly true that the microscope revealed a degree of cirrhosis often quite unexpected from naked-eye examination. In his classification of cases increased consistence of the organ had been the requisite condition. He did not share Dr. Lazarus-Barlow's aversion to including cirrhosis as an inflammatory condition, but thought that the conditions in the liver were comparable to those in the kidney and that, in spite of Professor Flexner's observations on the increase of elastic tissue which certainly did not appear to be of inflammatory origin, the increase of connective tissue was more reasonably regarded as an inflammatory process than as a mere hyperplasia, the result of an attempt to fill up the space left by the atrophy of the liver cells. With regard to the form of cirrhosis in children, he had met with both pericellular and perilobular sclerosis, and whilst he considered that syphilis was a frequent cause he did not think that it was the only cause of cirrhosis in children. The new formation of bile-ducts was still, he ventured to think, open to some doubt, but he agreed with Dr. Maxwell that in some cases of congenital obliteration of the bile-ducts there was to be seen a new formation of tubes lined apparently with altered liver cells and containing bile in the lumen. In view of the often quite unexpected occurrence of cirrhosis of the liver in the post-mortem room he thought that it was very necessary to hesitate before ascribing a causal relationship to factors such as an appendicitis or a remote suppurating focus which happened to be present at the same time. It was clear, however, that the pathology of cirrhosis of the liver must still be the subject of investigation by experiment and by observation.

## OPHTHALMOLOGY.

### THURSDAY, AUGUST 2ND.

*Dacryo-cystitis.*

Mr. KENNETH SCOTT (London) described a case of Dacryocystitis Aggravans which occurred in a woman, a native of Upper Egypt, who came to him with double dacryo-cystitis which on the left side had attained an enormous size and resembled a malignant tumour of the face. He opened it and evacuated a large quantity of pus and mucus. The patient recovered and in five weeks she was quite well.

*Leuco-sarcoma of the Iris.*

Mr. W. WATSON GRIFFIN (Brighton) related a case of Leuco-sarcoma of the Iris which occurred in a young woman, aged 19 years. In the left eye there was a growth visible in part to the naked eye through the pupil which pushed forward the iris at the lower and outer side. The lens was displaced inwards and was partially opaque. Mr. Griffin diagnosed a malignant growth and excised the eye. On examination it proved to be a leuco-sarcoma with very marked hyaline changes. He thought that in a case treated so early as this the prognosis should be good. The points of chief interest were the age of the patient (most cases occurring in later life), the extensive hyaline changes, and the dense white appearance.

*Lacrymal Obstruction.*

A discussion on Lacrymal Obstruction was then opened by Mr. G. A. BERRY (Edinburgh) who referred to the great divergences of opinion held by surgeons as to the best method of treating this affection. He was inclined to think that there was a great tendency to over-treat these cases, and this was due to the common belief that the cause of nearly all cases was obstruction in the nasal duct, whereas in reality it was catarrh of the sac and duct. He condemned the use of large probes as these frequently caused a stricture at the opening into the sac, and this was especially likely to occur when the lower canaliculus had been slit. He preferred in nearly all cases to slit the upper one, as the direction of the channel thus made lay more in a line with the duct and there was consequently less stretching at the mouth of the sac and less laceration of the surrounding parts when a probe was passed. Owing to the fact that removal of the sac generally produced but little epiphora it was obvious that faulty excretion was not the chief cause of the trouble, which was probably due to hyper-secretion of tears caused by an irritation which originated in the sac and possibly in the duct also. In early cases Mr. Berry advocated slitting the upper canaliculus and then probing at intervals of a fortnight or longer, and usually three or four probings were sufficient if the case had come under treatment early. As a rule syringing was unnecessary except in those cases in which the sac was over-distended and then this, followed by pressure over the sac, was very useful. Should an abscess develop this was best treated by opening one or both canaliculi or if necessary opening it on the cheek. In conclusion, Mr. Berry advised early interference in catarrhal conditions—viz., by slitting the upper canaliculus into the sac and then probing at not too short intervals with one of a medium size. In dacryo-cystitis free incision with good drainage was usually indicated; this must be followed by opening of the canaliculi and in some cases by probing at fairly long intervals. In chronic cases, or those frequently recurring, complete removal of the sac was probably the best treatment. Large probes, frequent probings, and the use of styles were in his opinion to be avoided, while removal of the lacrymal gland or any portion of it was altogether uncalled for.

Dr. E. H CARTWRIGHT (Maidstone) said he avoided as far as possible slitting canaliculi, as it caused needless damage and impaired their function. In advanced cases some could be cured by small probes, while for others gold styles were necessary. He thought that syringing was useful, but he had never seen any advantage arise from the use of hollow styles nor had he ever seen a case in which it was necessary to remove the lacrymal gland.

Mr. KENNETH SCOTT in cases of chronic inflammatory thickening preferred to use rather large probes and the syringe. He thought that lead styles were the best and he had never seen harm arise from slitting the canaliculus.

Dr. STCLAIR THOMSON (London) approached the subject from the standpoint of a rhinologist and in the cases he had examined he had not found any disease of the nose to account for the trouble, though he thought that the primary infection of the duct and sac might come from it. He showed a drawing of a section of the nose to illustrate the large diameter of the nasal end of the duct and also the large space between the inferior turbinate bone and the outer wall of the nose.

Mr. E. D. BOWER (Gloucester) thought that over-treatment was responsible for much that was unsatisfactory. He never used styles and very seldom probes. In acute cases he considered the best treatment was to let the pus out and allow the case to quiet down, but if this failed he preferred to dissect out the sac.

Mr. ERNEST CLARKE (London) thought that simple cases were best treated by dilating the canaliculus and syringing. He strongly condemned the use of large probes, but in cases of stricture he recommended the slitting of the lower canaliculus and the removal of its ocular surface so as to accommodate a nail-headed gold style.

Mr. RICHARDSON CROSS (Clifton) saw no harm in slitting the canaliculus and in severe cases he opened both. If a stricture existed the probe must be used, but he thought that there was no advantage in using large ones.

Mr. SYDNEY STEPHENSON (London) was convinced that in difficult cases there was nothing so good as large probes, and he preferred to dilate rapidly with Theobald's probes, the largest being four millimetres in diameter. Mucoceles in new-born children usually yielded to pressure over the sac and evacuation of its contents.

Mr. E. E. MADDOX (Bournemouth) recommended the attachment of a simple nipple to the nozzle of a Weber's syringe for the injection of cocaine. When a style was indicated he advised the use of a soft one, such as the end of a fine silk catheter, which should be worn for a few days before placing a permanent metal one in the duct.

Mr. H. C. ENSOR (Cardiff) in severe cases dilated rapidly under an anæsthetic with Couper's probes and then placed in a lead style.

Mr. H. WORK DODD (London) drew attention to the importance of attending to the general health.

Remarks were also made by Mr. C. BLAIR (London) and the PRESIDENT (Dr. W. A. BRAILEY of London).

Mr. BERRY, in reply, stated that he had never seen anything but harm arise from the use of large probes.

*Cerebral Tumour with Optic Neuritis.*

Mr. ERNEST CLARKE read notes of a case of Cerebral Tumour with Optic Neuritis in a man, aged 36 years. The right disc showed post-neuritic atrophy while the left was a typical choked disc with 3 D. of swelling but no hæmorrhages. The existence of a tumour in the left frontal lobe was diagnosed. As the patient became rapidly worse the skull was trephined by Mr. Arbuthnot Lane. The brain bulged greatly when the tension was relieved but the patient died the next day. At the necropsy the tumour was found where it was expected and it proved to be a psammo-glioma.

*Some Forms of Optic Nerve Disease.*

Dr. A. FREELAND FERGUS (Glasgow) read a paper on Some Forms of Optic Nerve Disease, probably of sympathetic origin, and related five cases in which injury to one eye was followed after a few weeks by contraction of the field of vision in the other. This contraction was always accompanied by a diminution of the visual acuteness. In only one of the cases mentioned was there anything at all resembling an ordinary sympathetic ophthalmitis. Dr. Fergus urged that in all cases of injury to one eye a close watch should be kept on the condition of the optic nerve of the other. This was to be done, not merely with the ophthalmoscope, but also by the constant examination of the field of vision and of the minimum of light sense. These two functions depended in part on the healthy condition of the optic nerve, and defects in them often showed lesions of the optic nerve before they could be detected with the ophthalmoscope.

The PRESIDENT asked if tension as a possible cause of failure of vision had been excluded.

Remarks were also made by Mr. CROSS and Mr. BERRY.

Dr. FERGUS, in reply, said that he had carefully eliminated tension as a cause of failure. He thought that possibly the onset of sympathetic ophthalmia might be predicted by observations on the field of vision.

Mr. E. E. MADDOX demonstrated a Stereoscope for the exercise of eyes after operations on the muscles, in which each eye could be shut off from sight by small screens worked by electro-magnets inside the instrument by the surgeon. He also showed some new Needles with Round Holes which could be threaded more readily than those of the ordinary pattern. For advancements he had had made some silk sutures coloured green and black.

## DISEASES OF CHILDREN.

WEDNESDAY, AUGUST 1ST.

After the discussion on Pneumonia in Children which was introduced by Dr. NESTOR TIRARD, and reported in THE LANCET of August 11th, p. 449, Dr. JOHN THOMSON (Edinburgh) read a paper by himself and Dr. A. LOGAN TURNER (Edinburgh) on

*The Causation of Congenital Stridor.*

This paper was listened to by a considerable number of members from the Laryngological Section.

Dr. JOHN THOMSON said that he had hoped to illustrate the lecture by lantern slides. But as that was not possible, specimens of the larynges would be shown and stereoscopic slides handed round. He then described the onset soon after birth of the stridor and the character of the breathing and he discussed the various causes to which the symptoms had been attributed—adductor spasm, enlarged thymus, and the soft collapsable structure of the larynx in infants.

The site of the stridor was at the upper aperture of the larynx, in the larynx, or at the level of the thymus gland. The peculiarities of the larynx and of respiration in young infants were then noticed. As just now said the structure of the larynx in infants was softer and much more collapsable than it was in adults, so that with any sudden drawing in of air into the larynx the upper aperture changed to a slit, becoming much narrower from side to side. He then described the experiments on which the paper was founded, which showed very striking changes of the same character as just described, the sides of the upper aperture being sucked in together, the epiglottis drawn down, and the aryteno-epiglottidean folds met in the middle line. The respiration of infants was peculiar in rhythm and force. He gave an account of the conformation of the larynx in congenital stridor. The sounds were laryngeal, not in the pharynx, as the stridor persisted when the nostrils were closed and the tongue was depressed. In some cases of congenital stridor no enlarged thymus was found, and in cases where the gland did press on the larynx the stridor was expiratory. The sound was made in the larynx proper, and partly by the aryteno-epiglottidean folds. It was due to change of form (habitual) owing to the constant sucking in of the upper aperture of the larynx, a process strictly analogous to the formation of pigeon-breast. It was also a disturbance of respiratory coördination. It was not due to adenoid vegetations.

Dr. LOGAN TURNER showed an interesting set of specimens and a series of stereoscopic views of the experiments on the larynx, and comparative studies of infantile and adult larynges. One specimen showed persistence of the infantile type in an adult larynx.

The PRESIDENT (Dr. FREDERICK TAYLOR of London) briefly introduced the discussion on the paper, suggesting that years ago the cause of congenital stridor would have been paralysis.

Dr. P. MCBRIDE (Edinburgh) objected to the character of the experiments on a flaccid larynx. He thought that irritation of the adductor centre was the condition of congenital stridor, thus somewhat analogous to laryngismus stridulus.

Dr. J. DUNDAS GRANT (London) detailed a case where the stridor was incessant even under chloroform and the epiglottis was seen to be depressed. When this was lifted up the stridor disappeared. This at all events was one definite cause. In other cases possibly congenital malformations caused the stridor.

Dr. H. L. LACK (London) thought that it was impossible to have spasm so continuous as the stridor was. He considered that it was more due to stammering with the larynx, especially as it came on very soon after birth. He also did not place much confidence in the experiments related.

Dr. H. TILLEY (London) quoted three cases and agreed with the view of a congenital weakness of the upper aperture of the larynx. Adenoids or other sources of irritation had nothing to do with it.

The PRESIDENT, though he gave up belief in a paralytic origin of the stridor, was not inclined to adopt a spasmodic theory.

Dr. THOMSON, in reply, defended his and Dr. Turner's experiments. He considered that congenital stridor was an acquired functional defect.

Dr. TURNER also briefly replied.

### THURSDAY, AUGUST 2ND.

### *Lateral Curvature of the Spine.*

Mr. CHISHOLM WILLIAMS (London) read a communication based on the notes of nearly 500 consecutive cases of Lateral Curvature of the Spine. There was distinct lateral curvature in all and no cases of simple weak back were included. The chief period for the appearance of lateral curvature was from 16 to 20 years of age. From one to six years there were 35 cases; from six to 10 years there were 66 cases; from 10 to 16 years there were 121 cases; from 16 to 20 years there were 175 cases; and over 20 years of age there were 105 cases. He then briefly enumerated the various causes, such as heredity, rickets, and rheumatic arthritis. There were 131 cases of flat-foot among the lateral curvatures. One patient had had rickets and had three relatives (closest possible) with lateral curvature. The right dorsal convex was the most common curvature found. There were five triple convex cases. In 101 cases there was constant pain or backache. In 19 cases the Swedish movement cure had been practised with unfortunate results. In all cases under 25 years of age some improvement was manifested on treatment. The patients' general health was improved by hypophosphites and cod-liver oil. The spines were straightened by mechanical pressure. This pressure must be kept up. Mr. Williams then alluded to the apparatus or splint, as he preferred to call it, in use at the City Orthopædic Hospital. This had the special advantage of giving a certain amount of play to the muscles of the back while supporting the spine and not letting it go back into a worse position. It could also follow up any improvement by being braced up to it. Under five years of age a leather or gutta-percha splint was quite sufficiently strong. Special muscular exercises, massage, galvanism, &c., all came under review. To be successful in these cases required the combined willingness and coöperation of parent, friend, patient, and surgeon.

Mr. E. NOBLE SMITH (London) regarded the pathological conditions which lay at the back of these deformities as of great importance. In one class the deformities were purely mechanical, such as those due to trades and occupations and the other pathological conditions. Rickets was responsible for a considerable number of cases. There was also an undue softness of bone and tissues in many of these cases. This was an old opinion, but recently attention seemed to have been fixed almost entirely on the weakness of the muscles, and so muscular exercises were so largely prescribed to cure this muscular weakness. All adaptations of muscular exercises should be accurately carried out and the treatment should be directed in a perfectly scientific manner. Mr. Noble Smith emphasised the need there undoubtedly was for more systematic teaching on these subjects in the medical schools and dwelt on the great importance of prophylaxis, which would help to prevent the development of many of these cases.

Mr. CHISHOLM WILLIAMS gave an account of an interesting case of flat-foot suddenly commencing in a cyclist who had ridden for several years. He was racing to Brighton and back and when half-way home his feet gave way completely. There was a great deal of swelling underneath the feet and when this subsided they were typical cases of flat-feet. The feet were put up in plaster-of-Paris for five weeks and they recovered absolutely. He protested against the far too common practice of instrument-makers treating cases of spinal curvature. He gave details of a case which had been sent to him by a medical man who had had it under his observation for three years, during which time it steadily grew worse, and he said he had been fighting against the use of an instrument all that time.

Mr. W. GREEN (Portsmouth) asked about the causation of a projection often found at the junction of the two curves of lateral curvature.

Mr. E. MUIRHEAD LITTLE (London) discussed the causes of scoliosis; he was sceptical as to whether it was ever produced by shortness of one leg, &c. He had not noted any frequent association with flat-foot or knock-knee. It was so difficult to get details of results so as to investigate the best mode of treatment. He then dealt with the use of supports and proper exercises.

The PRESIDENT asked for information about fencing, whether it had a good or bad influence with regard to lateral curvature which it had been charged with producing. He also asked how heredity came in among the causes of lateral curvature.

Mr. JACKSON CLARKE, after thanking the meeting for his reception in the chair and congratulating it on the discussion, said that the prominence at the junction of the curves of lateral curvature sometimes appeared before the curves were much marked and caused some difficulty in diagnosis. There would be, however, no rigidity which would take it out of the tuberculous angular curvature, and no pain and rigidity, which would differentiate it from the swelling occasionally met with in rheumatic arthritis. The pathological condition generally of these cases of deformity was slight rickets. He quoted a case of typical flat-foot due to rickets which was cured by a judicious alteration in diet. He drew attention also to the type of instrument to be used in the treatment of lateral curvature; this helped the muscles and directed their action. Fencing, he considered, did no harm in strong healthy children. Scoliosis would not be inherited, but a tendency to it was frequent.

Mr. CHISHOLM WILLIAMS briefly and warmly again defended the use of the apparatus used at the City Orthopædic Hospital.

## PHARMACOLOGY AND THERAPEUTICS.

### WEDNESDAY, AUGUST 1ST.

*Treatment of Internal Hæmorrhage.*

Dr. WALTER G. SMITH (Dublin), having delivered his presidential address—an abstract of which was published in THE LANCET of August 4th, p. 369—proceeded to open a discussion on the above subject. He observed that few cases of hæmorrhage from the lungs, bowels, or kidneys were in themselves fatal or imminently dangerous. Patients died after hæmorrhage but not often from it (S. West). Many attacks of hæmorrhage ceased spontaneously if only let alone, hence drug-treatment of hæmorrhage was often superfluous and sometimes mischievous. The efficacy of local styptics was undoubted and their *rationale* was quite simple. Gallic acid, however, was devoid of local steptic power, and tannic acid was excreted partly as alkali-tannate and partly as gallic acid, neither of which coagulated albumin or constricted blood-vessels, hence tannic acid was useless as a remote hæmostatic. The most rational treatment of, say, a serious case of hæmoptysis consisted simply in mental and bodily rest, the administration of morphine, and free evacuation of the bowels.

Dr. WALTER E. DIXON (Cambridge) said that in consequence of the feeble constricting power of the pulmonary vaso-motor system, as compared with that of the body generally, all general vaso-constrictors tended to cause dilatation of the pulmonary vessels. As regarded suprarenal gland extract he had found the tablets to exhibit active properties, but not the solutions. He recommended the use of this drug in the arrest of hæmorrhage from gastric ulcer. Among other drugs employed sometimes in the arrest of bleeding the speaker referred to chloride of calcium, which, according to some authors, accelerated coagulation. This observation he had been unable to confirm. Citric acid, moreover, though in the same category, undoubtedly prolonged the period up to coagulation.

Dr. W. ESSEX WYNTER (London) referred to the employment of gelatin administered subcutaneously in sterilised normal saline solution up to a strength of 5 per cent. and a maximum quantity of 250 cubic centimetres in cases of continued hæmorrhage, and as a precautionary measure before undertaking operation on specially vascular organs or in "bleeders," as suggested by the efficacy of this method in favouring coagulation in sacculated aneurysms by Dr. Lancereaux and Dr. Paulesco.

Dr. ERNEST KINGSCOTE (London) spoke of calcium chloride rather as a vaso-motor dilator than as a constituent of the Nauheim salts, and mentioned the excitement of local and general peripheral dilatation as useful in checking internal hæmorrhage.

Dr. LIVEING FENN (Colchester) referred to the value of suprarenal extract in constricting the vessels and cited a case of exophthalmic goitre so cured. He considered that the drug steadied the heart by bracing the peripheral circulation.

Dr. R. MURRAY LESLIE (London), confining his remarks to the treatment of hæmoptysis, described the method adopted at the Brompton Hospital, the indications being to lower blood-pressure and heart-action by absolute rest, morphine, and by reassuring the patient. He also recommended that the patient should be turned on to the affected side during the attack so as to prevent, as much as possible, regurgitation of blood into the sounder lung.

Professor C. R. MARSHALL (Cambridge) referred to the action of tannic acid in hæmaturia and cited one instance in which clots succeeded liquid blood in a case of hæmoptysis treated by calcium chloride in 10-grain doses.

Dr. A. REEVE MANBY (East Rudham) referring to the practice of Mr. T. H. Morse of Norwich, said that when he was called upon to operate for the relief of severe internal hæmorrhage he administered 15 ounces of hot water by the mouth and by the rectum and injected 10 ounces of saline solution and subsequently operated under a local anæsthetic.

Three papers followed on the Chemistry of the Jaborandi Alkaloids (by ProfessorH. A. D. JOWETT, D.Sc.), the Action of Extractum Jaborandi Liquidum B.P. (by Professor JOWETT and Professor MARSHALL), and the Pharmacology of the Jaborandi Alkaloids (by Professor MARSHALL). These papers described most interesting investigations into the nature and action of the alkaloids of jaborandi, and displayed particularly the variability of the different preparations, both as to the quantity and nature of their active principles, the conclusion being that nitrate of pilocarpin was really the only efficient and suitable constituent and should be prescribed in preference to any preparation of the leaf.

Dr. ERNEST KINGSCOTE read a paper on the Treatment of Asthma and Hay Fever.

### THURSDAY, AUGUST 2ND.

*Serum-therapy.*

Mr. T. J. BOKENHAM (London) opened a discussion on this subject, touching on the various diseases which could be modified or prevented by the use of antitoxins, and specially dwelling upon some favourable results of the method in checking outbreaks of diphtheria. The remedy should be applied early and in large doses. He had used 280 cubic centimetres of anti-diphtheritic serum in four days in one case apparently moribund.

Dr. F. W. FORBES ROSS (London), on the other hand, quoted an outbreak among the Royal Fusiliers in the Tower which had been equally abruptly checked by isolation and ventilation without the aid of serum, the instances in which a pure cultivation of the Klebs-Löffler bacillus occurred being extremely mild, contrary to general experience. He had had a similar experience in an outbreak of measles and also in erysipelas with pneumonia. In the latter anti-streptococcic serum appeared to abort the pneumonia, but exerted no good influence on the erysipelas.

Dr. J. HADDON (Hawick) dwelt on the preventive power of anti-diphtheritic serum, arguing that what cured should also prevent the disease which developed from slight sore-throat to a virulent type under favouring conditions. Owing to only the severest cases being admitted hospital statistics were not a safe guide.

Dr. LORIMER HART (London) recorded the successful use of anti-streptococcic serum in three cases of erysipelas. He strongly advocated the use of appropriate sera in disease.

*Diet in the Treatment of Disease.*

Dr. HARRY CAMPBELL (London) then opened a discussion on Diet in the Treatment of Disease. In the course of his remarks he gave a sketch of the normal dietary and indicated where departures might be made according to the requirements of different morbid conditions without sacrificing the necessary proportions of the fundamental constituents. Commenting on the great divisions of carnal and vegetable foods the speaker suggested that it was the absence of the so-called extractives from vegetable food which accounted for its unstimulating character, and further attributed to these extractives, liberated from the muscles by action or nerve influence, the states of elation associated with muscular exertion, good tidings, or even the onset of migraine. These extractives, so abundant in most meat extracts, displacing actual proteid, were capable of unlocking energy but not of supplying it. He regarded the absence of fibrous and indigestible matter in over-civilised diet as being responsible for early caries of the teeth, adenoids, and constipation.

Dr. D. SOMMERVILLE (London) referred to the habitual overfeeding at Nordrach and other sanatoria, and gave instances of gain in weight even in progressive disease.

Dr. SARAT MULLICK (London) stated that fat prevented waste of tissue. In febrile cases he recommended the simplest food—milk, diluents, and carbohydrates, so as to build up the body at the smallest cost to the organism and at the same time to flush out toxins. He attached great value to a "dietetic ladder" by which gastric invalids could be raised by degrees to full diet, without undue strain on digestion.

Dr. HADDON likened the disorders of metabolism consequent upon a too rich and stimulating diet to the breakdown of a horse fed too freely upon oats and beans, the remedy being to turn him out to grass. He strongly insisted on the value of vegetarian diet in removing diverse and remote symptoms, especially recurring paroxysms, and instanced cases diagnosed as Ménière's disease and epilepsy as well as migraine so cured.

Dr. W. A. GORE (Whitchurch, Salop), Dr. LINDLEY M. SCOTT (London), and the PRESIDENT spoke strongly against the excess of proteid usually indulged in.

*The Treatment of Gouty Eczema.*

Dr. G. J. KING MARTYN (Bath) read a paper on this subject in which the following recommendations were made. The diet should be the typical gouty diet, a

minimum of meat, starch, sugar, and alcohol in their most irritating forms and total abstinence from certain articles, such as lemons, strawberries, and some other fruits. The least irritating and the warmest kinds of clothing which would also allow of ventilation were recommended. Wool for this season was bad; a thick cellular form of cotton was the best. He advocated medicinally the free use of saline aperients, such as Carlsbad water, bismuth, and alkalies. The usual gouty remedies and uric acid solvents were of little use. Arsenic should be administered in the dry chronic unirritating forms, antimony in the irritating forms, and morphia whenever acute severe eczema stopped sleep, induced scratching, and wore out the patient. For relief of the intense burning and itching a lotion or ointment containing carbolic acid should be used; for the dry forms an ointment containing liquor carbonis detergens in very small quantity; and for the acute weeping form a dusting powder of equal parts of carbonate of magnesia and Fuller's earth. The idea that all eczema must be religiously kept from water was a fallacy. Warm alkaline baths allayed the itching, loosened the scales and produced hyperæmia and turgescence of the vessels of the skin. The patient should not be hot-packed but carefully dried and powdered. In some cases Dr. Martyn added sulphur water to the natural bath water. All eczema was not so benefited by baths. Roughly speaking in the moist and inflammatory type of the condition baths should not be used. An equable warm climate was best, but never the sea coast.

Dr. J. C. M. GIVEN (Liverpool) objected to the word "gouty" in the title, saying that there was no sufficient ground for attributing this or any other skin disease to a diathesis. The attacks responded to ordinary rather than specific treatment, and were associated with neurotic types and overwork rather than with gout.

The PRESIDENT agreed with this, stating that in Dublin gout was almost unknown though eczema was as common as in this country and responded to the same treatment.

Dr. LIVEING FENN said that few people after the age of 60 years were quite free from metabolic residues due to imperfect oxidation and excretion or the absorption of imperfectly digested matters. A preliminary course of hot salines was essential to successful treatment by the ordinary methods in these cases.

Dr. F. W. TUNNICLIFFE (London) read a paper on the Nutritive Value of Casein (Plasmon) in which he described the method of preparation (a costly one) and the properties of this substance with an account of experiments *in vitro* and *in vivo*.

Dr. LINDLEY SCOTT (London) read a paper on the Preventive Treatment of Oxalate of Lime Gravel and Calculus in which he insisted on the value of magnesia in preventing deposit whether the excess was due to excessive ingestion or to faulty metabolism.—The PRESIDENT, commenting on the paper, said: "No one knows the origin of oxalic acid in the body."

*Medicinal and Dietetic Treatment of Heart Failure in the Aged.*

Dr. FORBES ROSS read a paper on this subject. He reviewed briefly the conditions met with in dealing with cases of heart failure in the aged, mention being made of the intrinsic cardiac degenerations, parenchymatous and valvular, and of exocardial conditions as met with in the arterial, portal, renal, and cerebro-spinal systems bearing on the therapeutical problems calling for elucidation by means of medicinal and dietary agencies. The result of strophanthus as illustrated and contrasted by cases: (1) failure, without suitable diet; (2) success in the same case, with suitable diet, after digitalis had failed to relieve; (3) the need for nervine stimulants along with the use of strophanthus, especially in cases of cerebral degeneration or in cases of epilepsy; (4) the value and successful results obtained by tonic dietary aiming at the regeneration of the nervous forces; (5) the prolonged tolerance for, and relatively harmless effect of, the lengthened administration of strophanthus on the cardiac, nervous, and digestive systems; (6) the adjuvant actions of other drugs used at the same time, as mercury, nitrates, alkalies, diffusible stimulants, nervine tonics, &c.; (7) success or failure in the use of strophanthus being governed by the absence or presence, untreated or unprovided for, of conditions outside the range of the therapeutic action of the drug, often wrongly blamed as ineffective or harmful; and (8) the peculiar actions and symptoms produced, mainly adverse, by strophanthus when administered in combination with a mineral acid, were severally considered.

## LARYNGOLOGY AND OTOLOGY.

WEDNESDAY, AUGUST 1ST.

*Intra-nasal Treatment in Ear Disease.*

A discussion on this subject was opened by Dr. P. MCBRIDE (Edinburgh), Dr. CRESSWELL BABER (Brighton), and Dr. DUNDAS GRANT (London).

Dr. MCBRIDE divided the subject into (1) the conditions of the ear liable to be affected by nasal changes, and (2) pathological conditions of the nose which might involve the ear. Under the term "nose" the naso-pharynx was also included. It was, he said, generally admitted that many forms of ear disease might be markedly improved by treatment directed to the naso-pharynx; acute otitis media might be arrested by the removal of adenoids; and in chronic non-suppurative middle-ear deafness of children, if there be no complication, such as hereditary syphilis, the effects of this operation were often little short of marvellous. In chronic non-suppurative inflammation of the middle-ear in adults the position was by no means so clear; two types were distinguishable—(1) those in which the anterior and posterior nares were either normal or were somewhat anæmic, with a very sharp differentiation of parts; and (2) those in which there was some congestion of the whole naso-pharyngeal tract including the Eustachian orifices, with perhaps some hypertrophy of the turbinals, deviation of the septum or spurs. The progressive deafness of one type was commonly due to changes in the region of the stapes often associated with a lesion of the osseous capsule of the labyrinth, while the other was ascribed to chronic middle-ear catarrh. In the former it was questionable whether operating on the nose would ever be of benefit; it might do harm. In the latter it was better to operate on a gross nasal lesion causing nasal symptoms and upon a naso-pharyngeal condition if present. Turning to the changes in the nose and naso-pharynx he said it must be a somewhat difficult matter for those who believed that nasal obstruction *per se* was capable of producing progressive deafness to account for its rare occurrence in case of nasal polypus; again, very marked hypertrophic nasal catarrh and stenosis of the nostrils due to changes in the septum frequently existed without marked impairment of hearing. With regard to gross lesions in the naso-pharynx sessile tumours were associated with deafness, but not of the same type as progressive chronic catarrh; with single pedunculated tumours deafness was rarely a pronounced symptom. Speaking of adenoid hypertrophy as a causative factor he said that when a relatively clear space remained between the margin of the adenoid tissue and the Eustachian orifices its removal did not so materially influence the ear, if it be affected, as the removal of a relatively smaller mass stretching right across from one Eustachian orifice to the other. It must be remembered that the veins of the middle-ear returned the blood to a considerable extent by way of the pharynx and that there was a similar connexion as to the lymphatics. It was therefore conceivable that interference with circulation might play an important part in certain cases of deafness from adenoids. In some instances the posterior extremities of the inferior turbinals became very much enlarged and might lead to deafness, but their removal had not in his experience given anything approaching results frequently obtained by operating on adenoids.

Dr. CRESSWELL BABER said that acute inflammation of the middle-ear, whether catarrhal or suppurative, required as a rule no intra-nasal treatment during the attack except careful cleansing of the nose with a saline solution—indeed, any other treatment would be harmful. Exceptions might, however, arise in which obstruction of the Eustachian tube might require immediate intra-nasal treatment. In the chronic cases it was important to inflate the tympanum before any nasal or naso-pharyngeal operations were undertaken to ascertain effects. When inflation improved the hearing the obstruction might be removed with benefit; when repeated inflation had no effect operative treatment was not to be recommended; it might, however, be wanted for other reasons.

Dr. DUNDAS GRANT said that from the frequency with which catarrhal affections of the ear were found in the subjects of nasal stenosis and inversely the frequency with which nasal stenosis was found in subjects of catarrhal

affections of the ears, there was no doubt that there was a great causal connexion between the two conditions. Improvement in the hearing power had been known to follow simply the removal of a nasal obstruction. This connexion did not hold good in the case of dry sclerotic catarrh of the middle-ear, but only in the moist and hypertrophic forms. In some cases of nerve deafness the removal of a nasal obstruction might bring about an improvement owing to the raising of the patient's nerve tone. In the carrying out of the nasal operations precautions must be taken to avoid inflammatory reaction with the risk of setting up suppurative inflammation in the middle-ear.

Dr. HERBERT TILLEY (London) said that intra-nasal operations for the removal of obstructions, slight or severe, in cases of chronic progressive deafness—so-called dry catarrh—were almost invariably failures. They must distinguish between the patient's expression of relief for the removal of nasal obstruction and the effect on the hearing itself. Where, however, the deafness was due to the moister forms of catarrh the removal of obvious intra-nasal lesions and obstructions might relieve the deafness.

Dr. W. JOBSON HORNE (London) said that in a routine examination of the nose and naso-pharynx in cases of deafness it was common to meet with some degree of nasal obstruction or insufficiency. The question to be decided was whether the obstruction was material and if so how it was to be dealt with. Whether the nasal obstruction was material depended in great measure, he thought, upon the width and depth of the naso-pharyngeal space; this, again, depended on the age of the patient. The inferior nasal meatus was on the same level as the orifice of the Eustachian tube. In early life, when the distance between the posterior nares and the posterior pharyngeal wall was still narrow, the inferior meatus was in direct line, and, in fact, almost continuous with the orifice of the Eustachian tube. It therefore followed that intra-nasal lesions were liable to be more important factors in ear disease in childhood than in adult life. After the removal of adenoids in children the intra-nasal obstruction, if previously present, frequently subsided; if not he was in favour of the removal of the child to a more suitable climate. The size of the naso-pharynx in adults he thought explained the absence of deafness in some cases of complete nasal obstruction occasioned by polypi, enlarged turbinals, and deviations of the septum.

Dr. WATSON WILLIAMS (Clifton) considered nasal obstruction as a causative factor in great measure hypothetical, and its treatment of little avail in improving the nasal condition.

Mr. R. LAKE (London) considered that the obstructions concerned the posterior half of the nares and the removal of enlarged posterior ends of the turbinals beneficial.

Dr. HOLBROOK CURTIS (New York) advocated intra-nasal operations in catarrhal and sclerotic cases. He objected to the term "negative pressure" that had been used by previous speakers—he preferred the term "rarefaction." He considered one might as well describe vomiting as negative swallowing.

Dr. HEMINGTON PEGLER (London) thought that it was difficult to draw a definite line between catarrhal and non-catarrhal cases. He had in cases operated upon for removal of nasal obstruction often unexpectedly obtained marked improvement in hearing.

The PRESIDENT (Dr. SCANES SPICER) in reviewing the discussion regretted that no definite conclusions had been arrived at. He admitted the difficulty in what might be regarded as mixed cases, but thought that many cases undoubtedly benefited by intra-nasal treatment and that the treatment could not be regarded as experimental.

Dr. MCBRIDE and Dr. CRESSWELL BABER replied.

### THURSDAY, AUGUST 2ND.

*The Pathology and Treatment of Toxic Paralyses of the Larynx.*

Dr. WATSON WILLIAMS and Dr. JOBSON HORNE opened a discussion on this subject.

Dr. WATSON WILLIAMS said that the term "paralysis" was assumed to imply organic paresis or paralysis of one or more laryngeal muscles, as distinguished from mere loss of voluntary movement, paralysis of cortical origin being excluded. The inquiry extended to laryngeal paralysis resulting from direct bio-chemical influence on the lower neurons and the muscles which they subserve of substances in the blood or tissues, whether due to auto-intoxication, to the toxins resulting from micro-organisms, or to the pathological action of various drugs or other poisonous substances introduced from without. Two distinct possible methods were mentioned by which the laryngeal paralysis might arise:—(1) from the direct application of the toxic substance to the larynx, and (2) from the selective affinity of various poisons in the blood for the laryngeal nerves or their bulbar nuclei. Dr. Williams went on to say that it was remarkable that in true toxic laryngeal paralysis the postici, with few exceptions, succumbed either earlier than, or concurrently with, the adductors of the cords. It seemed probable that the majority of cases of toxic laryngeal paralyses had their foundation in peripheral neuritis. This would afford an explanation of the varying localisation of the paralysis in different territories supplied by the recurring laryngeal nerve. Thus, excluding the purely myopathic paralyses, toxic paralyses were due to inflammatory degeneration of the neuron, that was in its wider sense neuritis, and might be divided into two distinct pathogenic groups. 1. Infective neuritis, commonly occurring in the course of diphtheria, and less frequently observed in typhoid fever, typhus fever, scarlet fever, morbilli, influenza, rheumatism, tuberculosis, syphilis, and pneumonia. 2. Toxic neuritis, most frequently due to lead-poisoning, but also said to have occurred in poisoning by arsenic, copper, antimony, phosphorus, alcohol, atropine, and morphine. The treatment consisted in: (1) general treatment of the infective disease and measures directed to the removal of organic or metallic poisons in the circulation and tissues; (2) intra-laryngeal application of the faradaic or galvanic current, combined with strychnine in large doses by the mouth or into the affected muscles when feasible; and (3) the relief of dyspnœa and threatened asphyxia by intubation or tracheotomy.

Dr. JOBSON HORNE in his opening remarks, confined himself to the myopathic aspect of the subject and detailed the microscopic changes he had met with in the intrinsic muscles of the larynx in persons who had died from diseases known to be at times complicated with paralyses of the vocal cords. Although the pathology of perhaps the majority of these cases of toxic paralysis of the vocal cords might ultimately be found to consist in a peripheral neuritis he considered the changes in the muscles themselves to be deserving of further investigation.

Dr. SAMUEL LODGE (Halifax) reported two cases of Laryngeal Paralysis following lead poisoning. The first case he was unable to follow up. In the second case the voice was recovered perfectly in two months under the faradaic current.

Dr. HERBERT TILLEY narrated a case of Abductor Palsy of one cord following in a few days a septic sore-throat without any clinical likeness to diphtheria.

## TROPICAL DISEASES.

### THURSDAY, AUGUST 2ND.

*Ankylostomiasis.*

The discussion on this subject was opened by a paper communicated by Major G. M. J. GILES, I.M.S., who after dealing with the history of the disease gave an account of his researches into the life-history of the free stage of ankylostoma. He believed that he had established the fact that these rhabdites could live and multiply freely in fæcal matter—that is to say, that it was a case of heterogenesis or dimorphism. Major Giles did not enter into the old controversy as to whether the disease in the Assam plantations known as kala-azar was ankylostomiasis plus malaria or malaria plus ankylostomiasis. He himself adhered to the former belief, but Captain Leonard Rogers and Major Ronald Ross were in favour of the latter hypothesis. Major Giles said that he had demonstrated the fact that the full life-history of ankylostoma duodenale was an example of dimorphism. He had succeeded in breeding a sexually mature form in the laboratory. He found the sexually mature nematodes, the females heavy with eggs, which were absolutely identical in form and dimensions with those of the parasitic form, in ordure contained in the small cesspits attached to Assamese houses. The embryos of the parasite slowly died from want of nourishment in clean water. In large fæcal masses at a temperature of from 80° to 90° F. the embryos might develop into free sexually mature worms in four days, but under less favourable circumstances they

took a few days longer. Major Giles had had no difficulty in refuting the criticisms of Dr. Sonsino, who had attempted to cast doubt upon his observations on the grounds "that the organism was rhabdites terricola or other free nematodes," and "that the appearances were really the free form of rhabdomena intestinale." The absence of the anguillula stercoralis (the embryo of rhabdonema intestinale) was carefully noted by Major Giles in each specimen of dejecta used for observation and experiment. He dissented from the view that ankylostomiasis was a harmless affection. He pointed out that a number of observers in Assam stated and believed that because the parasite of this disease was met with in the fæces of healthy persons therefore it was harmless, and that the reduced condition of natives afflicted with ankylostomiasis was to be ascribed to other causes. The power of the parasite to produce a toxin seemed to be most probable.

Captain C. F. FEARNSIDE, I.M.S., communicated a paper entitled "Ankylostoma Duodenale," which contained an account of a careful examination of stools for the ova of the parasite. The observations were made on convicts in the prison at Rajahmundry, of whom 68·1 per cent. were found to be infected by the parasite. Captain Fearnside was of opinion that the presence of ankylostoma was not a primary cause of illness usually, but supervening on malarial cachetic states it was a serious condition. In his experience thymol was not an efficient vermicide. He found that in many cases after dosing the patients with large doses of thymol, varying from periods of 10 to 60 days, as many ova of ankylostoma were met with in the stools as at the beginning of the treatment.

Captain LEONARD ROGERS, I.M.S., communicated a paper upon the Classification and Differential Diagnosis of Ankylostomiasis with Special Reference to the Type of the Anæmia. Kala-azar, according to Captain Rogers, was not ankylostomiasis but malarial fever. The dispute as regarded the nature of the term employed by the natives in Assam to denote a disease attended with a high mortality and styled "kala-azar" had been a long one, but the observations made by Major Ronald Ross went to favour the contention of Captain Rogers as to malarial infection being the genesis of the ailment. In 66 per cent. of healthy Assamese ankylostoma was found, but Captain Rogers thought that 500 worms must be present before they could cause a marked effect. He wished particularly to differentiate between true ankylostomiasis and the fact that a few ova of the parasite were present in the stool. It was possible that 80 per cent. of the inhabitants of large provinces of India were infected in that way, but that did not stamp them as suffering from ankylostomiasis. It was only when "constitutional" effects were apparent that the disease could be held to be present.

Surgeon-Lieutenant-Colonel O. BAKER, I.M.S., in a paper entitled "Ankylostomiasis," recorded his experiences of the disease in Burmah. He found that the Burmese harboured the parasite extensively. In the Maulmain jail he seldom failed to detect the ova of ankylostoma among the prisoners, in cases not only of simple anæmia but also of anæmia associated with specific diseases. In advanced cases of ankylostomiasis the patients appeared to be suffering from extreme loss of blood. That the Burmese should readily acquire parasitic infection of their intestine was little surprising, seeing that they squatted on the floor when eating, that their bowls were set on the floor, and that they ate with their fingers. The acquisition of the ova of ankylostoma by food was therefore very possible, and it was probably by way of food rather than by water that the Burmese acquired the infection.

A discussion of these papers followed.

Dr. PATRICK MANSON (London) related cases of ankylostomiasis which he had seen in Englishmen from the West Indies and from Singapore, and although one of these patients was very ill indeed thymol in adequate doses had an immediately beneficial effect. Dr. Manson considered that thymol should be given in doses of about 30 grains every hour for four hours. Betel nut, so largely chewed in Assam, Burmah, and Indo-China, might, according to Powell, be employed on account of a belief in its prophylactic action against infection by ankylostoma. The Chinese method of allowing nightsoil to accumulate and ferment was probably fatal to ova and the embryos of the intestinal entozoa generally, and in some such way the absence of ankylostoma amongst the Chinese might be accounted for.

Major RONALD ROSS, I.M.S. (Liverpool), stated that he considered Major Giles's observations concerning a rhabditiform stage of the parasite of ankylostomiasis to be sound, and condemned Dr. Sonsino's conclusions. Captain Rogers's estimate of 500 parasites as necessary to cause ankylostomiasis was probably much above the mark, and it was obvious that the number required to produce reaction must vary inversely with the strength of the host. Fifty ankylostomata might destroy a patient already debilitated by other diseases or by starvation.

Mr. JAMES CANTLIE (London) remarked that he had never found ankylostomata or their ova in the stools of coolies in Hong-Kong suffering from beri-beri, but that in Borneo, in 100 consecutive post-mortem examinations on cases of beri-beri, Dr. J. H. Walker had found the ankylostoma in every case.

*Liver Abscess.*

Colonel KENNETH MACLEOD, I.M.S. (Netley), read a paper entitled "The Management of the Lung Lesions consequent on Liver Abscess." He enforced the principle that in cases of liver abscess complicated or followed by lung lesions the lung required treatment and that the liver ought to be let alone. When once an abscess had burst upwards through the diaphragm and invaded the lung a reparative process was set up in the liver, but the destructive condition proceeded in the lung. Attempts to reach the seat of the primary abscess in the liver would only be attended by failure, and there was no justification for such procedure.

Mr. JAMES CANTLIE read a paper entitled "Sub-hepatic Abscess." According to Mr. Cantlie a sub-hepatic abscess was a collection of pus, due to a lymphangitis, between the peritoneal covering of the liver and the liver substance itself. Mr. Cantlie described the results of investigations which he had made as to the depth to which the needle of an aspirator or a trocar and cannula could be introduced without wounding the inferior vena cava. He stated that in a body with a circumference of 32 inches over the region of the liver the centre of the inferior vena cava was four and a half inches distant from the surface.

Mr. W. JOHNSON SMITH (Seamen's Hospital, Greenwich), in a paper entitled "The Diagnosis and Surgical Treatment of Tropical Liver Abscess," advocated surgical treatment in all cases of liver abscess that had not burst up through the diaphragm or into a neighbouring organ. He found the x-rays likely to be of benefit in estimating the position and action of the diaphragm in inflammatory conditions in the neighbourhood of the liver. He had operated upon eight cases of liver abscess during the last five years by the transpleural route and in a single case by laparotomy.

Staff-Surgeon P. W. BASSETT-SMITH, R.N. (Haslar) communicated a paper upon a case of Abscess of the Left Lobe of the Liver with remarks particularly referring to its amœbic causation. The case was interesting inasmuch as the patient had resided in England for two years. He then developed dysentery, and subsequently a liver abscess was opened in the epigastrium and proved to be connected with the left lobe of the liver. The amœba coli was met with in the pus of the abscess to the exclusion of other pyogenic bacteria. At the necropsy cœcal ulcerations of recent date were found, with pericarditis and an abscess in the base of the right lung, although no direct communication was traceable between the abscess in the left lobe of the liver and that in the lung.

## NAVY, ARMY, AND AMBULANCE.

### THURSDAY, AUGUST 2ND.

*On First Aid and Transport of Sick and Injured in Civil Life in Large Towns.*

Surgeon-Major G. A. HUTTON (Leamington) opened a discussion on this subject. Speaking as organising commissioner to the St. John Ambulance Association, he described the primitive methods in vogue previously to the inauguration of the St. John Ambulance Association in 1877. Sir John Furley was the improviser and designer of various stretchers, litters, and horse ambulances. The Marquis of Salisbury in 1890, by command of Her Majesty, laid before Parliament the report of a commission of inquiry as to ambulances in cities of Europe and America. Surgeon-Major Hutton outlined the system in New York, where ambulance work was under the care of the police, with telephone equipment, and the expenses of which were defrayed by the city. In Birkenhead this work was done by the fire brigade with telephone aid, and in Liverpool it was under the police, also with telephone communication, and the expenses were defrayed by the Police Committee of the city council. In Liverpool the conveyance of persons who could afford to pay was done

by private enterprise. The system had won the cordial approbation of Mr. Reginald Harrison who asserted that it had saved many limbs and lives. Surgeon-Major Hutton then outlined ambulance work in various towns in the United Kingdom and stated that the proper persons to undertake ambulance work were the police, as they were on duty by day and night. It was necessary that they should be properly trained and annually inspected. He desired to draw the attention of the British Medical Association to the practical uses of the St. John Ambulance Association as an aid to those coming in constant contact with the sick and injured.

Brigade-Surgeon-Lieutenant-Colonel G. S. ELLISTON, V.M.S.C., V.D., said that it was at the instance of his old friend Surgeon-Major Hutton that he had undertaken ambulance work years ago in civil life. He regretted that even now they were only just at the very beginning, so to speak, of ambulance work in civil life. The police attended classes in many towns but did not go far enough in obtaining higher certificates and too often allowed themselves to become rusty. Continuous study was absolutely necessary as well as frequent practice. The police ought to be paid and not left to do this work in their own time. At Wellingborough civil ambulance work had been put to the test in a terrible railway accident and had triumphantly vindicated its right to existence and encouragement.

The PRESIDENT (Inspector-General BELGRAVE NINNIS, M.D., R.N.) said that ambulance centres should be established in every town. The proper equipment, station, &c., required usually about £100. The inspecting officer in London where stations were fairly numerous on a bank holiday frequently travelled over 60 miles per diem.

Surgeon-Captain J. HARPER, V.M.S.C., also spoke.

*On First-Aid in Civil Life.*

Surgeon-Major DE ZOUCHE MARSHALL, A.M.R., sent a paper with this title which was read by one of the secretaries in his absence. He classed ambulance workers as "amateurs" and "professionals." The amateurs were usually ladies. The "professionals" were most important and should be carefully selected. Both instructors and pupils should be paid for time spent in learning and teaching. Not every medical fledgling was really able to teach ambulance work who thought that he could do so. Shepherd's "Handbook" should be re-edited by a committee of experts who would also form a school of ambulance instruction in first-aid for surgeons desirous of qualifying as instructors. No medical man should be appointed to instruct who had not a certificate of efficiency. The police should be paid and a third-class certificate ought to carry a grant of threepence per day, a second-class certificate sixpence per day, and a first-class certificate ninepence per day. Other public servants who qualified similarly should be paid at the same rate. In default of the police the St. John Ambulance Association should take the entire ambulance work under its control. All officers of merchant ships which did not carry a surgeon should be instructed in ambulance work. Lock-keepers on canals and boatmen should have courses of instruction on resuscitating the drowned.

Surgeon-Major J. INCE, I.M.S., said that the St. John Ambulance Association originally introduced the first ambulance into London.

Surgeon-Major HUTTON, in replying, said that an ambulance examination should be held with the accustomary inspection of police.

Surgeon-Major T. F. S. CAVERHILL next read a paper entitled:

*On Cavalry Ambulance Service.*

The salient points of the paper were the following. That the present bearer companies were on foot, therefore they could not keep up with the cavalry. This system had been condemned by experienced cavalry commanders. Major-General Sir Herbert Stewart in Egypt had described this arrangement as "absolutely unsuitable." He had, therefore, improvised a mounted bearer company which did excellent service. Surgeon-General Evatt, in 1881 in Egypt, stated that an infantry bearer company could not keep pace with the mounted men. Lord Morley's committee in 1883 recommended mounted bearer companies. The *British Medical Journal* had said, in noticing the existence of mounted bearer companies in New South Wales, that it was incredible that the same did not exist in the service of this country. Mr. Watson Cheyne had particularly complimented the New South Wales ambulance, without which the Army Medical Department would have been in difficulties. The objections to the present system were (1) tactical, (2) humanitarian, (3) surgical and medical, and (4) administrative. The wounded often hampered the movements of a cavalry general. The *matériel* should be divided into (1) indispensable and (2) reserve. He recommended the following: (1) the addition of a second surgeon to all cavalry regiments in the field; (2) that cavalry ambulances should be specially trained and equipped; (3) that *cacolets* and litters should be provided for the use of all cavalry; (4) a special pattern of light ambulance for cavalry; (5) that the inspector-general of cavalry should annually inspect the cavalry ambulance; (6) that mounted bearer companies should be formed from the Royal Army Medical Corps to act with cavalry and mounted men in the field; (7) that in certain contingencies the *cacolets* and litters of the mounted bearer companies should be made use of; and (8) that experienced surgeons and assistants should be always close in the rear of the fighting-line. The proposals should be considered under two heads: (1) regimental medical aid by trained ambulance men in each regiment, and (2) non-regimental medical aid given by a mounted bearer company of the Royal Army Medical Corps attached for duty to a cavalry regiment.

Surgeon-Major VALENTINE MATTHEWS, V.M.S.C., also contributed a paper entitled, On Cavalry Ambulance Service, based on somewhat similar lines.

The two papers were well received and were favourably discussed by the following gentlemen: Lieutenant-Colonel C. B. MAITLAND, I.M.S., Major E. M. WILSON, R.A.M.C., Surgeon-Major HUTTON, Surgeon-General T. F. O'DWYER, Principal Medical Officer of the Aldershot District, and Surgeon-Major INCE.

Surgeon-Captain F. L. STEPHENSON, V.M.S.C., contributed a paper on the Cycle in the Field for Medical Service. This paper, which was also well received and was favourably commented upon by Surgeon-General O'DWYER, brought the meeting to a termination.

## THE ANNUAL MUSEUM.

(*Continued from p. 454.*)

### III.—SANITARY APPLIANCES, DISINFECTANTS, &c.

THE decline in the number of exhibits this year was specially noticeable in this section. In particular there did not appear to be any sanitary appliances possessing special novelty, while even the number of disinfectant preparations most commonly presented to view have very sensibly diminished. We are inclined to regard this result as meaning that the choice of a disinfectant is narrowing down to a few well-known ones. The market has been simply deluged with all sorts of new chemical, antiseptic, and disinfectant compounds, each claiming to be more powerful than others hitherto offered. We are glad that this plethora of disinfecting compounds is subsiding, for their great number is perplexing and the medical man knows quite well which antiseptic suits his purpose best and his choice is bound to relate to a few well-known preparations the efficiency of which has been established by practice and bacteriological experiment.

Amongst the best-known appliances which may be correctly described under the category of this section are the many forms of Pasteur (Chamberland) filters exhibited by Messrs. J. Defries and Sons, Limited, of 147, Houndsditch, London, E.C. At their stall were shown an improved cistern filter working without pressure, a laboratory filter for the bacteriological examination of water, and an improved filter for railway-carriages, refreshment-rooms, &c. Photographs and plans were also shown illustrating the application of this method of filtration on a large scale. The exhibit included the Equifex disinfection appliances. A number of interesting hygienic products were shown by Messrs. Paté, Burke, and Co. of 6, Wool Exchange, Basinghall-street, London, E.C. Under the distinctive title of "Petanelle" a wool is obtained which is described as a fibrous derivative of peat possessing important absorbent and deodorant properties. Surgical dressings, aseptic pads, and other sanitary fabrics, and hygienic mattresses and bedding, are made by this firm. The exhibit included "Petanelle" disinfecting powder which is efficient in use and is an excellent deodorant. The "Ronuk" preparations are well worth mentioning in their relation to sanitary application. Ronuk, Limited, of 35, Providence-place, Brighton, prepare a special sanitary "polisher and cleanser" for the floors of hospital wards; it answers

admirably. The exhibit also included a special stain for preparing ordinary deal floors for polishing. Tidman's Sea Salt is well known and the exhibit of Messrs. Tidman and Son, Limited, of Bushell-street, London, E., included a sea soap for use with the salt. The Jeyes Sanitary Compound Co., Limited, of 64, Cannon-street, London, E.C., had an excellent assortment on their stall, chief amongst which were the creolin preparations which are now well established as effective and convenient antiseptics. The exhibit included creolin gauze, creolin plaster, and an interesting preparation known as "lano-creolin." Bandages, absorbent cotton wools, and protective lint were the chief subjects of exhibit by the Liverpool Lint Co. of Mark-street Mills, Leatherfield-road, Liverpool. The "transpirable" wool undervests, body-belts, and chest protectors should be mentioned also amongst the special hygienic preparations of this firm, since these articles of clothing are claimed to allow free evaporation and not to become cold and clammy even under profuse perspiration. The Sanitary Wood Wool Co., Limited, of 26, Thavies-inn, Holborn-circus, London, E.C., had a very interesting assortment of their well-known sanitary wood-wool preparations and appliances. These comprised wood-wool tissue, wadding, pads, sanitary outfits, &c. The exhibit included a very simple form of arm-sling which gives the patient ease, comfort, and convenience while causing a minimum of disturbance during adjustment which may be accurately and readily made.

## IV.—SURGICAL INSTRUMENTS AND APPLIANCES.

This section was perhaps better represented than any other department in the annual museum this year and attracted more interest in general. The room set apart for this class of exhibit was quite distinct from the main exhibition, the old museum rooms being found convenient for this purpose. There were, however, a few exhibits coming under this section in the Public Hall. Such, for example, were the surgical appliances of the O'Connor Extension Co. of 2, Bloomsbury-street, London, W.C. This exhibit included the O'Connor patent boot for cases of flat-foot, the O'Connor patent toe-raising boot, and the Clyde patent "Varus" and "Valgus" boots, which are invisible substitutes for ankle-irons. We understand that this company have supplied their patent appliances for use in South Africa. We have already remarked on the ingenuity and excellence of those appliances in particular of this firm which minister to the deformities of the leg and foot. In the exit corridor, which formed a lounge and smoking-room, a great variety of special beds for hospital use were displayed by Messrs. George Gale and Sons of Dominion Works, Birmingham, and Messrs. S. B. Whitfield and Co. of Watery-lane, Birmingham These consisted mainly of the spring bedsteads for use in fractures, &c., designed by the late Mr. Lawson Tait. Atomizers and insufflators were the feature of the stall of Mr. Frank A. Rogers of 327, Oxford-street, London, W. These appliances are excellent in design and produce a very fine spray or dust-cloud, as the case may be. The exhibit also included a number of syringes for hypodermic use and for the spraying of the oro-nasal passages. The Alione Co. of 17, The Broadway, West Norwood, London, S.E., exhibited their special clothing for infants and invalids. These clothes are so made as to be practically in one, so that the infant or the invalid may be laid flat and dressed in a few minutes. Any single part of the body can be uncovered without disturbance. The stall of Messrs. John Weiss and Son of 287, Oxford-street, London, W., was the centre of very general interest since it was simply replete with instruments and apparatus employed in modern surgery. The exhibit included an operation-table with important advantages. A special room was fitted up by Messrs. Weiss as an operating theatre. An exhibit by a local firm consisted of a complete domestic Turkish bath for use at home. The bath comprises really two baths, the one being a cabinet which folds up when not in use, and the other being a shower bath which may be made to give a supply of water at three different temperatures. The manufacturers are Messrs. R. D. and J. B. Fraser, Limited, of Princes-street, Ipswich. Close by were the milk sterilisers of the Aymard Patent Milk Steriliser Co. of St. Matthew's-street, Ipswich. The advantages of these sterilisers are indisputable, since they relate not only to economy and efficiency but to the ease with which the containers may be cleansed. The exhibit also included a simple apparatus for warming food. Special beds adapted for asylum and general hospital purposes were exhibited by Messrs. Billington Brothers of Liverpool. Bed-tables and bed-rests of very useful design and construction were also exhibited by this firm. Aseptic articles of hospital furniture, together with a very large assortment of aseptic minor and general operation instruments, were the feature of the admirably planned stall of Messrs. Down Brothers of 21, St. Thomas's-street, Borough, London, S.E. The Longford Wire Co. of Warrington showed their patent wire as applied to a mattress and to cycle saddles. The quality of the wire of the saddles may be understood from the fact that a single wire of a thickness not much greater than cotton will sustain the weight of 420 pounds, while the patent wire mattress will carry one ton without giving way. Mr. William F. Offord of 2A, Regent-street, Cambridge, showed his special orthopædic appliances. Amongst these were an apparatus for the prevention of recurring displacement of the internal semilunar cartilage of the knee, an apparatus for fixing the hip-joint in tuberculous, and one also for fixing the knee-joint in early tuberculous, disease. An improved method of applying the faradaic current for therapeutic purposes was shown in the Hodgkinson electro-neurotone. It is said that by means of this handy little instrument the change of polarity may be effected without the patient perceiving it, while there is rapidity of alternation. Mr. J. S. Montague of 101, New Bond-street, London, W., showed a number of important improvements in amputation instruments, saws, bone drills, &c., besides also some new apparatus for the administration of chloroform, "gas," or ether. We have already described the "Sentinel" patent domestic milk steriliser which by an ingenious arrangement depending upon the fusion of a metal at a comparatively low temperature works automatically, so that the temperature need never exceed a certain point and the taste of the milk does not suffer. The instruments on the stall of Messrs. Arnold and Sons of 26, 30, and 31, West Smithfield, London, E.C., were inspected with interest by the medical visitors. The exhibit included modern instruments for the surgical treatment of the throat, eye, ear, and nose, recent patterns of amputation and minor operation instruments, and certain improved forms of sterilisers and aseptic cabinets. The x ray apparatus of Harry W. Cox, Limited, of 10, 11, and 28, Cursitor-street, Chancery-lane, London, W.C., are now well-known as admirably adapted to medical and surgical requirements. This firm are the actual makers of the induction coils, and every part is of English make which enables them to guarantee the coils for two years against breaking down. This firm have supplied the hospital ships employed in the present campaign in South Africa with x ray apparatus, and the interesting demonstration given by Mr. Mackenzie Davidson at the meeting depended upon the success and efficiency of the coils of this firm. Besides many surgical instruments of modern design the Surgical Supply Association of 35, Market-street, Manchester, showed an admirable series of specimens of certain concentrated drugs. Amongst these should be mentioned as of special excellence a series of suppositories with various medications. Messrs. Browne and Sayer of Old Swan Chambers, Upper Thames-street, London, E.C., introduced to the notice of the visitors a cheap milk steriliser for infants. This simple apparatus supplies a distinct want; it is effectual and within the reach of the not well-to-do. A very useful bed for bed-fast persons and others was shown by the Aseptomechanical Bed Co., Limited, of Geneva, Switzerland. The bed provides for the comfort of the patient during any attention that may be required. The patient need not be moved and by means of a handle he can be easily raised although he may be of exceptionally heavy weight. In a room at the entrance of the old museum rooms the Dowsing Radiant Heat Co., Limited, of 24, Budge-row, Cannon-street, London, E.C., showed a model of their radiant heat and light bath. As is well known the principle of this bath depends upon the emission of both heat and light rays from the incandescing carbon filaments of electric lamps of certain design. The apparatus has been used chiefly for the treatment of rheumatism, but it has also been employed in anæmia, eczema, and disturbances of the circulation.

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WATER-SUPPLY OF DURSLEY. — The Local Government Board have sanctioned the application of the Dursley (Gloucestershire) Parochial Board for permission to borrow £4500 for the purpose of carrying out the water-supply of the district.

# THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE,

HELD AT PARIS, AUGUST 2ND—9TH, 1900.

## THE CLOSING CEREMONY.

(FROM OUR SPECIAL COMMISSIONER.)

THE closing ceremony was brief but effective; it barely lasted more than an hour. On this occasion the great hall of the Sorbonne was well filled and the proceedings were enlivened by a military band. Professor Albert, of the Vienna Faculty of Medicine, read a paper on the Architecture of the Bones of Men and of Animals. Unfortunately the band had been allowed to occupy the seats generally reserved for the press. These are placed near the desk from which such papers are read, and the journalists had consequently to go to the other end of the broad platform. The soldier-musicians were doubtless much edified by what the learned professor said, but those whose business it was to note down his observations heard hardly a word. Professor Lannelongue, President of the Congress, then delivered a somewhat lengthy speech which was intended to review and to close the labours of the Congress. He insisted on the great fact that science did not belong to any particular nation but that the learned and the wise of all countries united to promote its interests, for these were the interests not of individuals but of humanity. Further, the Congresses were the means of enabling a vast concourse of persons to judge a nation not from reading and hearsay but from actual experience. By holding the Congresses in different countries the scientific men of the world thus acquired extensive practical and cosmopolitan knowledge. Everything went to show that this was above all the century of science and freedom. Science had become the necessary foundation of almost every calling in life; but it was impossible to study science without having the fullest freedom of investigation. Thus science was useful not only by reason of the direct benefits derived therefrom, but also because it trained the mind to that form of independent critical research which could not exist but where freedom flourished. Such, I take it, was the general drift of Professor Lannelongue's remarks, of which the above is a summary and not the precise words. He then went on to deal with the great material difficulties of holding Congresses which brought together several thousands of members. Considering that it was almost impossible to entertain satisfactorily so many guests and to debate fully when there were so many speakers and so little time available, it had been suggested that the Medical Congress should be split up into numerous smaller Congresses of specialties. Doubtless specialties had helped to produce progress; but it was a mistake, a fundamental mistake, to believe that their successes were due to anything else than general knowledge of the entire subjects from which alone the special study of a particular branch could be safely undertaken. A specialty could not be compared to a healthy plant. It was not the trunk—it was but a branch from the great tree of knowledge. Separate that branch from its trunk, plant it by itself, and it would soon wither. Therefore, and if only to maintain this great teaching, the Medical Congress should remain entire and complete. He hoped they would continue to hold the Congresses as they had done in the past, the entire profession united, happy to meet again in other countries old friends and familiar faces. Consequently he did not say *adieu* but *au revoir*.

As Professor Lannelongue concluded with these words the clarions blared out and the band struck up a quick march suggesting the hurrying off to the next Congress. But it had not yet been decided where the next Congress would be held. Therefore when the band concluded Professor Julian Calleja rose. He spoke in Spanish, and soon, in response to the sonorous and dignified tones of that magnificent language, the applause began to ring out in all parts of the hall. Few persons present understood Spanish, but a knowledge of Latin helps a good deal, and it was soon gathered that the speaker was insisting on the honour he hoped the Congress would confer on Spain—how the people of that country would enthusiastically respond, how eager they were to imitate other nations and to honour the men of science of all countries. He was also particularly affected by the delicate attention shown by the band, for, by playing the national Spanish hymn, it had, as it were, proclaimed the hope that the next Congress would be held in Spain. When Professor Calleja concluded he was greeted with applause that was renewed over and over again, and he had to rise and bow his acknowledgments. Indeed, the Congress seems to have terminated in a demonstration in honour of Spain; for it was announced that the prize of £200 offered by the town of Moscow during the last Medical Congress to the author who should have produced a work contributing most benefit to the progress of medical science had just been allotted to Señor Ramon y Cajal, the learned professor of histology and pathological anatomy at Madrid. Dr. de Cortéjarena of the Madrid Academy of Medicine spoke in support of the proposal that the Congress should meet at Madrid in 1903 and to express his gratification at the marks of approbation emanating from the members of the Congress. He only said a few words, and those in French, and as there was no amendment or counter proposal Professor Lannelongue rose and declared that the labours of the Congress were concluded but that it would meet again in three years at Madrid. The band then played the members of the Congress out of the hall and thus a very busy week's work came to an end.

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## THE GREAT FÊTE GIVEN TO THE FOUR MEDICAL CONGRESSES BY THE PRESIDENT OF THE FRENCH REPUBLIC.

On August 10th, in the afternoon, one of the finest fêtes that has ever taken place at the Palace of the Elysée was given by M. Loubet, President of the Republic, in honour of the Medical Congresses and of the Congress of University Students. The International Congress of Hygiene concluded its opening ceremony that same afternoon as early as possible so as to enable its members to attend. The International Congress of Medicine having terminated the day before its members had no difficulty in reaching the Elysée in good time. The invitations to the Elysée which had been given to the members of the International Congress on Medical Ethics or Deontology and of the Congress of the Medical Press for the receptions which had been postponed on account of the death of the King of Italy, were made available for this day. Altogether it is said that 10,000 invitations were issued; and after my experience of a similar gathering at the Palace of the Luxembourg it was not without some apprehension of a possible crush that I made my way to the Presidential residence. For more than a quarter of a mile away from the Elysée the carriages were stopped and made to form in single file, advancing only a few steps at a time. Most of the occupants were soon tired of this slow and weary process, and as the pavement was quite dry they left their carriages or cabs and proceeded the rest of the distance on foot. Great, however, was their surprise to find that the gates of the Elysée were barred and that the street was thronged with guests who were unable to gain admittance. Though it was only half an hour after four, which was the time fixed, the number of people inside was already greater than could be managed. Still we might at least have been admitted into the yard instead of waiting in the street to the interruption of all traffic. After a while the reason for this exclusion became apparent. Soldiers appeared on the scene, an effort was made to separate the crowd, and we were told to make room, for cavalry were expected. But the pressure from behind was so great that we could not make room and in the midst of the confusion up dashed the Shah in an open carriage surrounded and followed by cuirassiers. Their bright helmets, swords, and breastplates glittered above us, their horses plunged in our midst, and we fought, scrambled, and struggled to get out of the way. The ladies screamed, the men shouted "*Assez! assez!*" by which presumably they had had enough of such a military show. Others, having failed to perceive the Shah's carriage, thought that the troops had taken us for a riotous assembly and were about to charge. Their alarm was consequently intense and they attempted a stampede. Certainly it was not necessary to have brought the whole heavy cavalry right through the crowd of guests who thronged the street from wall to wall. The greater part of the escort might have remained in the rear of the Shah's carriage which alone entered the yard of the Elysée, instead of riding past the entrance and right through the crowd from end to end. Of course, some of the horses

were frightened by the cries of terror and of protest that were raised and began to plunge about, thus greatly increasing the danger of accidents. The indignation evoked by this rough treatment was, however, soon appeased when a few minutes later the crowd were at last admitted into the Elysée, in small batches at a time. There was a terrible squeeze at the gateway, but, however great the discomfort and disorder in the street, once within the Palace the crowding ceased and perfect order prevailed. The handsome saloons of the ground floor, the walls bearing rare and beautiful tapestry, were all thrown open, and after strolling slowly through them the guests reached the great lawn and gardens behind.

It seemed as if these grounds had been laid out on purpose for the day's performance. At the farthest extremity a stage had been built, with a graceful colonnade on each side, and behind it majestic trees formed a natural enclosure. The lawn also is not flat, but concave, so that with rising ground on either side it was easy to obtain a view of the stage. Down the centre a broad carpet had been placed for those who objected to stand on the grass. At the foot of the stage there were the entire orchestra of the Grand Opéra, and then a certain number of chairs for the President, the Shah, and their retinues, and for some of the guests who arrived early enough to secure these seats. The performance had been organised for M. Loubet by M. Gaillard, the Director of the National Academy of Music, and some actors from the Comédie Française and the ballet corps of the Grand Opéra. The actors before each of the four acts recited verses which contained the argument or explanation. Through being detained so long outside I was too late to see the first act. It represented the dances of the barbarians who first inhabited Europe. This was followed by a beautiful scene of the blue Mediterranean dominated by the Acropolis. On the stage, in classic Greek drapery, the high priestess and her attendants danced with slow rhythm in honour of the pagan gods. Both from the artistic and, if not from the medical, at least from the psychical point of view, this was by far the most interesting act. Gradually the Pythoness is overcome by the fumes from the altar, by the rhythmic movements, and by the steady gaze of two slaves who follow her with slow music played on a sort of clarionet, and at last she falls insensible on the ground. From this, the cataleptic stage, she gradually emerges, and then her movements are quite different: they are marked with hesitation and expressions of surprise; she shades her eyes the better to see the visions by which she is surrounded, and then stoops forward to whisper to her attendants the oracles which the entire ceremony is intended to provoke. The next act represented French dances such as the gavotte and the style of dancing that preceded the Great Revolution. Coming immediately after the reproduction of the rites of the Greek oracles, the following lines in the argument did not fail to produce a thrill among many of the audience:—

> "Danseuses, à présent, vous allez nous les rendre
> Dans leur fraîcheur pâlie et leur charme effacé,
> Ces visions d'aïeule où, folle, grave ou tendre,
> L'âme de notre France, en dansant, a passé."

Had it not been foretold that dancing would take place where the Bastille stood? and when the soul of France inspired the Great Revolution the grounds that covered the dread dungeons of the Bastille were converted into a garden and over the entrance was written, "*Ici on danse.*"

The last act represented modern ballet-dancing, but beyond the fact, as the *Matin* remarks, that Mademoiselle Zambelli with her rose-coloured satin shoe traced arabesques over the brains of the world, there is not much that was particularly interesting in this last phase of the performance. M. Loubet, Madame Loubet, the Shah, and their households now rose and slowly walked back to the Elysée through the great concourse that stood around them. Naturally they were very heartily greeted. But it took a long time before the guests had all departed. There were buffets under the trees where champagne and iced drinks were dispensed with lavish hand. The buffets inside the Palace had early in the afternoon been strategically surrounded and captured by the Germans, who, as a distinguished physician remarked, profit by the decorum, the timidity, and the politeness of other nationalities to get the most and the best for themselves. However, as among the better educated classes people do not go to such receptions for the sake of what they can eat and drink, there were comparatively few complaints. Apart from the refreshments the gardens were so pleasant and the crowd so interesting that but few cared to hurry their departure. Nearly every nationality was represented, many of them in their national costumes. The students wore strange caps of eccentric shape and often of gaudy colours. Then there were the two sons of the King of Norodom, who displayed their legs in black silk stockings while their bodies were draped with violet silk heavily covered with elaborate gilt designs. The Magyars, of course, stood proudly in their top boots, their tights, and their Attila cloaks, rich in furs and velvets, while plumes rose high above their heads. The trencher caps of the English universities were, however, considered quite as eccentric as any of these, to us, less familiar vagaries. The white caps of the Scandinavians, the spiked helmets of the German military surgeons, the fur bonnets of the Galicians, the broad silk bands of the Swiss students, the black Astrachan and pointed hats of the Persians, the elegant and fanciful dresses of the ladies, the glare of the chandeliers within the palace, the subdued tones of the garden at the approach of nightfall,—all went to make up such a picture, such a variety of effect, such a multiplicity of interest, that this garden party will never be forgotten by the thousands of guests of all nationalities who had the good fortune to be present. The idea of the entertainment originated with M. Loubet. He was anxious to do something new and unprecedented specially in honour of the medical and scientific guests of the French nation. He, in fact, possesses, as it were, the copyright of the whole entertainment. But already a great number of newspapers have urged that what has been done so well deserves to be repeated and special petitions are to be made to M. Loubet to allow the performance to be given again both at the Grand Opéra and in the Hall of Festivals at the Exhibition. Whatever may be the result of these requests, the members of the medical profession of all nations have to thank the President of the French Republic for the honour which he conferred upon them in thus organising such a magnificent entertainment for their special benefit.

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## A VISIT TO SOME OF THE PARIS HOSPITALS.

(FROM A CORRESPONDENT.)

There is probably no city in the world the hospitals of which are better known, at any rate by name, to physicians and surgeons all the world over than those of Paris. The doors of all were thrown open to the members of the Thirteenth International Congress of Medicine and full advantage was taken of the permission. In many the professors had prepared special demonstrations, and there is no specialty the votaries of which were unable to gratify their interest during the past week in Paris.

*Hôtel Dieu.*—Many physicians wended their way past the towers of Nôtre Dame to the famous Hôtel Dieu, one of the oldest of the Parisian hospitals, dating from the seventh century, but completely rebuilt in 1878. The importance of this hospital may be recognised from the interesting fact that during the French Revolution it was rechristened "L'Hôpital de l'Humanité." Here Dieulafoy holds the senior chair of clinical medicine, and gives twice a week the masterly lectures associated with his name. This last year he has devoted much time to the pathology and treatment of appendicitis. He is so convinced of the necessity of early surgical treatment that he has formulated his opinion in the words, "*Il n'y a pas de traitement médical de l'appendicite.*" Faisans also has wards in the Hôtel Dieu and is a good clinician, the other physicians being Brissaud and Cornil, there being in all 510 beds for medical cases. During the Congress Lucas-Championnière gave a demonstration of his method of treating fractures by mobilisation and massage with presentation of patients so treated, his theory and practice being similar to those of Mr. W. H. Bennett, whose results have been published in our columns. There is no doubt that his method is a healthy reaction against the exaggerated teaching of putting up even a Pott's fracture in plaster or splints for from three to six weeks or strapping an arm for several weeks for a fractured clavicle. The essential quality in the apparatus used, which should be as light as possible and should be worn for the shortest possible time, is to prevent displacement. There is much work still to be done in this subject, greatly aided as we are in our examination of a fracture by the x rays. Champétier de Ribes is the accoucheur of the Hôtel Dieu and his ward visits are always instructive and interesting, the present school of midwifery in Paris being indeed very strong with Pinard and Budin in the van.

*Hôpital de la Pitié.*—Not a few of the hospitals of Paris are so constructed and equipped as to inevitably remind one of the injunction not to put new wine into old bottles. It

is striking, for instance, to see over the old gateway of La Pitié the date "1612" still legible on the battered stones and inside to find operating theatres equipped with all the very latest improvements. Another contrast is the notice "*Service de consultation*" on what is evidently the door of the ancient chapel of the hospital, and yet in La Pitié may be seen Terrier, a pioneer in aseptic surgery and still one of the ablest surgeons in France. His formula is, "Perfect asepsis of instruments and dressings, antisepsis of the skin of surgeon and patient." It is well worth while to pay a visit to some of the medical wards of La Pitié, Jaccoud's or Robin's. Babinski, too, has clinical demonstrations in which nervous diseases are shown and contrasted. The immense material of the larger Paris hospitals affords an invaluable training to students and graduates.

*L'Hôpital de la Charité.*—Close to the Faculty of Medicine, in the buildings of which the meetings of the Congress were held, is the famous Hôpital de la Charité, covering the immense piece of ground bounded by the rue Jacob, the boulevard St. Germain, and the rue des Saints-Pères. Its old amphitheatre, formerly the choir of the chapel, is that in which Corvisart inaugurated the first chair of clinical medicine during the Revolution. Potain and Bouchard are the chief physicians and there are few whose lectures are more instructive and interesting. The surgeon, Tillaux, is one of the old school, but full of a long experience and a wisdom that draws round him daily numbers of students. Tillaux had the reputation in his youth of being able to break a femur in his vigorous hands.

*Saint Antoine.*—Hayem, who has done so much work in investigating changes in the blood in anæmia and other diseases, issued a general invitation to visit his wards, of which a considerable number of physicians took advantage. It is some distance along the rue de Rivoli and the old Faubourg St. Antoine until the hospital, founded as long ago as 1178 by Foulques, preacher of the fourth crusade, is reached. Lermoyz has here one of the best services for diseases of the ear, the nose, and the throat. Béclère gave an interesting demonstration here to members of the Congress during its session of medical radioscopy with explanation of apparatus and presentation of patients.

*Hôpital Necker.*—One of the best organised sections of the Congress was that of genito-urinary diseases held in Guyon's department of the Necker Hospital. Guyon has his wards here, his magnificently-equipped out-patient department, pathological department, museum and library, all affording much interest to anyone engaged in the treatment of these diseases. The French members of this section gave a banquet to their foreign *confrères* and Professor and Madame Guyon gave a most enjoyable reception.

*Hôpital Cochin.*—High up in the rue du Faubourg Saint Jacques is the Hôpital Cochin, which is well worthy of a visit if only to see the two new beautiful surgical wards in the garden, built in 1893 and named the "Pasteur" ward and the "Lister" ward. Cochin boasts three of the most distinguished surgeons of Paris—namely, Schwartz, Bonilly, and Quénu. Quénu has done much good work and good writing on the surgery of diseases of the rectum and is a scrupulously clean operator. Bonilly has one of the largest practices in surgical gynæcology in Paris. In vaginal hysterectomy he adheres to the generally discarded method of assuring the arrest of hæmorrhage by leaving forceps on the broad ligaments for 48 hours after the operation. Chauffard, the genial secretary of the Congress, is an energetic physician whose wards in the Hôpital Cochin are well worthy of a visit.

The *Hôpital Beaujon* is one of the older hospitals of Paris. Berger here does interesting plastic operations and Bazy always extends a hearty welcome to visitors to his gynæcological and genito-urinary cases. Ribemont-Dessaignes has the midwifery building, which is one of the most modern and perfect in Paris. It is only necessary to contrast the French and English textbooks on this subject to see to what a degree of thoroughness of detail this specialty is developed in France.

The *Hôpital Lariboisière*, near the Gare du Nord, was too far for many of the members of the Congress; but those who did go saw Tuffier, one of the best of the younger surgeons, operate. Tuffier is simple and clean in all his abdominal work.

The *Hôpital Tenon* was visited in order to see Léjars operate. Léjars is the author of "La Chirurgie d'Urgence." Here, too, is Poirier, the energetic and versatile surgeon, formerly professor of anatomy. Lannois and Achard have also wards in the Tenon Hospital.

The *Hôpital Laënnec*, in the rue de Sèvres, has two services well worthy of a visit—namely, Landouzy's in medicine and Reclus's in surgery. Reclus is an excellent clinical teacher and does some interesting surgery under cocaine, including the radical cure of hernia, amputations, &c. Landouzy is one of the French authorities on tuberculosis.

The *Hôpital Bichat* is a new hospital built to make up for the necessary demolition of part of the Hôtel Dieu. The surgical department perhaps is best equipped owing to the fact that these wards were held by Terrier and his assistant Hartmann, who are rigid adherents to all rules of asepsis.

The *Hôpital Boucicaut* is the newest and best of the Paris hospitals. Gerard-Marchant is the surgeon and Letulle the physician. Letulle has had the courage and energy to put current ideas into practice and has transformed one of his wards into a sanatorium for consumptives. Doléris is the accoucheur and is always interesting and instructive.

Dermatologists at the Congress had a treat in store for them at the *Hôpital St. Louis*—the largest skin hospital in the world. Built by Henry IV. to take in plague-stricken patients and named in memory of St. Louis who died from the plague when leading the army of France in Palestine in a crusade, it is still recognised chiefly as a school for this specialty, the out-door consultation service being particularly useful owing to the number and variety of the daily cases. The out-door patients in 1899 amounted to 140,000. The library and the many beautifully coloured models illustrative of diseases of skin are invaluable to the student and to the practitioner.

The *Hôpital Ricord*, with its curious old gateway in the Boulevard du Port-Royal, offers a great opportunity to all who wish to study venereal diseases. From 50 to 200 patients presenting every form of chancre, &c., defile daily at the out-door service. The corresponding hospital for women is the *Hôpital Broca* where Pozzi has gynæcological wards. Pozzi's great scientific position has been recently recognised in England by his election to an honorary Fellowship of the Royal College of Surgeons of England.

*Children's hospitals.*—This department is well managed in Paris both as to surgical and medical wards. The Hôpital des Enfants Malades has several pavilions for the treatment of diphtheria, where Sevestre gives a full course of practical instruction. Lannelongue, the President of the Congress, is surgeon here. Grancher and his able assistant Marfan have also wards here, while the foreigner can go round the wards with Comby or Variot, both excellent observers. The other large children's hospital is the Hôpital Trousseau, near the Bastille. Here Broca has a large surgical service, and here also practise Kirmisson, a well-known orthopædist, and Netter, who has done such good bacteriological and clinical work in pneumonia and meningitis.

*Nervous diseases.*—The Salpêtrière, with its 4000 inhabitants, is known all the world over. Here Charcot began the scientific study of nervous diseases and laid foundations upon which modern pathology is firmly based. Here Raymond and Déjèrine hold their interesting cliniques, to which flock specialists from all the world. Pierre Marie's wards are at the Hospice de Bicêtre.

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## OPERATIONS AT DOYEN'S CLINIQUE.

Of the thousands of physicians and surgeons in Paris during the week of the International Congress there must be comparatively few who made a point of systematically and regularly attending the various sectional meetings. The fact that these proceedings are afterwards printed in full, that discussion upon the papers read and defence by each author of the thesis he has advanced are limited to a few minutes, and that many of the papers are merely "taken as read," all these reasons tend to make the sectional gatherings more or less formal. The great interest of such a Congress lies in the incidentals, the meeting of scientific men of various countries all bound by the same interests, the contrast that each sees between what is here known and held to be good and that which he has hitherto considered to be best, and the healthy rivalry of medical men in all departments to offer to the visitor what may be most interesting and attractive. Thus this last week foreigners have had the opportunity of hearing Lucas-Championnière and seeing his well-known, but not altogether accepted, method of the treatment of fractures by mobilisation and massage, of going round his wards with Hayem and Dieulafoy and Potain and Robin, and

of visiting the famous Cliniques Baudelocque and Tarnier. To surgeons, however, one of the most interesting events was the visit to Doyen's private surgical clinique in the rue Piccini, just off the most beautiful part of the Avenue du Bois de Boulogne. Here Doyen operated daily, and in spite of the early hour of half-past seven there was upon each occasion a large attendance, including most of the greatest surgical names of the day. Among those present on Thursday, fresh from his reception by the President of the Republic, was the venerable Virchow, who came on purpose to see the operation of hemicraniectomy for a case of epilepsy due, as the operation beautifully showed when the osteo-cutaneous flap was folded down, to an exostosis growing from the inner table of the skull over the motor area. Doyen pointed out to Virchow that one of the surgeon's chief difficulties in head surgery had been the mechanical one of opening the "boite cranienne," but that with his electrical instrumentation that part of the operation did not last very long. "On the contrary," said the eminent pathologist, "it seems to me very short." Doyen also did a vaginal hysterectomy and an abdominal hysterectomy for fibroid, showing in each case his latest modifications of the operation. Another morning Doyen showed the second step of a craniectomy—that is, the exploration of the brain five or six days after the craniectomy has been performed—an amputation of the breast, an osteomyelitis, and an excision of the tongue. There were many well-known surgeons present, including Hingston (Canada), Kocher (Berne), A. R. Simpson (Edinburgh). William Murphy (Chicago), W. W. Keen, von Bergmann (Berlin), Snegireff (Moscow), and Mayo Robson (Leeds). Between the operations Doyen showed his visitors his technique of various other operations as recorded by the kinematograph—namely, excision of a goitre, an ovariotomy, vaginal and abdominal hysterectomy, amputation of a leg, &c., proving that though he had the reputation of being a rapid operator his speed was not due to haste but to a simplicity of technique which made lengthy operations exceptional. Doyen often quotes the English saying "that time is money," and adds, "*Pour nous chirurgiens le temps c'est la vie.*"

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There have been many pleasant social and professional events in connexion with the Thirteenth International Medical Congress and the great numbers of medical men it has drawn to Paris from all parts of the world. On August 4th a meeting of the staff and former residents of the Hertford British Hospital was held to present to the Hon. Alan Herbert, M.D., an illuminated address commemorating his long and valued services to French and English interests in Paris, commencing with the ambulance work during the sieges of Paris in 1870 and 1871 and continuing with the duties of physician to the hospital founded so philanthropically and generously by Sir Richard Wallace. On the motion of Dr. A. A. Warden the chair was taken by Dr. James Miller, who then called upon Dr. J. F. Sutherland to present the address. The meeting was an interesting one and the affection and regard of all present for their old chief were evident and sincere. Sir Dyce Duckworth, who was present, made a few remarks emphasising the value to the English community and profession in Paris of a practitioner of Dr Herbert's high qualifications, and Professor Berger, a former fellow-interne with Dr. Herbert in the late "sixties," also made a few appreciatory remarks. Among those present were Dr. J. A. Bateman, Dr. Neech, Dr. Brandt of Royat, Dr. Waters, and Dr. Cree. The company separated to meet again in the evening around the hospitable table of Dr. Herbert in the rue Duphot, all glad to bear witness to the esteem felt for the doyen of English practitioners on the continent.

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The members of the committee for the Section of Urinary Surgery gave a banquet to their foreign *confrères* on August 6th at the Palais d'Orsay in the handsome dining-hall of the new terminus hotel, the chair being taken by Professor Guyon. More than 130 guests sat down to dinner, among that number being included some wives of the members. The toast of "The Foreign Guests" was proposed by Professor Guyon from the chair in the most cordial terms. Mr. Reginald Harrison, in replying, referred to the good work that was being done in the section and to the fact that unless that section had been formed serious difficulties would have arisen in the Section of General Surgery from the great amount of material. He thanked the French hosts for their hospitality and said that all present recognised that though they had no common language they were actuated by the same desire for the advancement of medical science, a desire untrammelled by any differences arising from either clime or language. Professor Küster of Marburg, upon whom the Honorary Fellowship of the Royal College of Surgeons of England has recently been conferred, also thanked Professor Guyon and the French members of the section for their reception. The great success of the section was due to the excellent organisation and arrangements elaborated by the secretary, Dr. Desmos, who had done a large amount of valuable work.

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On Wednesday night, August 8th, President Loubet gave a State banquet to the Presidents of Sections of the Thirteenth International Medical Congress and the official delegates from the various nations. The banquet took place at the Palais de l'Elysée and the guests were received by President Loubet and Madame Loubet. The gathering was one of the most brilliant of the many noteworthy events in connexion with the International Medical Congress, and the handsome uniforms and jewelled orders worn by the distinguished company were well set off by the artistic decorations of the palatial apartments. Covers were laid for over 250 and the table decorations excited much admiration, numberless rosebuds having been effectively arranged in connexion with the splendid service of Sèvres china. The dinner was the more enjoyable to many by reason of there being no speeches, and the excellent playing of the band of the 29th Infantry Regiment was much appreciated. After the banquet, before joining in the reception by President Loubet of members of the Congress, many guests lingered to examine the exquisite Gobelins tapestry on the walls and had leisure to admire the tasteful floral decoration of the pillars, the effect of the hanging chains of roses being specially artistic. No pains had been spared in organising the details of this entertainment and the comfort of each individual invited was most abundantly provided for.

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On Thursday evening, August 9th, the Neurological Society of Paris gave a dinner in the Restaurant Russe in the Eiffel Tower in honour of the neurologists from the provinces and foreign countries who had taken part in the work of the Neurological Section. The President of the society, Professor Joffroy, was in the chair. The guests, including ladies, numbered about 150, and each as a souvenir of the meeting found in his or her place the medal by Vernon struck in honour of Charcot and subscribed for by his pupils and admirers. Professor Joffroy, as president of the society, proposed the health of Professor Raymond, the president of the section, and of Professor Marie, the secretary, whom recent bereavement prevented from being present, also of the reporters and members of the section. Professor Raymond replied briefly and with emotion to the eulogium of Professor Joffroy. Professor Homen (Helsingfors), M. Roth, M. Jolly, and M. Tamburini returned thanks for their respective countries, speaking in praise of Charcot, who lives in his distinguished pupils. M. Pitres replied for the French provincial neurologists.

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On August 10th the Ophthalmological Society of France and the Paris Ophthalmological Society entertained over 130 members of the Ophthalmological section at Chantilly, among the party being about 30 ladies. The invited guests assembled at the Gare du Nord and proceeded by special train to Chantilly, a distance of 25 miles. Carriages were in waiting for the party at the station and after a short drive the Grand Hotel was reached where lunch was served, Professor Dor of Lyons presiding. Several representatives of different nationalities delivered themselves of speeches and then a move was made to the museum formerly the property of the Duc d'Aumale, the heir of the Condés. The picture gallery, containing examples of such painters as Raphael and Poussin, naturally attracted the visitors and the well-kept grounds also were much admired. A long drive through the park and the forest concluded a most pleasant excursion and the members returned to Paris by a special train.

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## THE SECTIONS.

### II.—MEDICINE.

#### GENERAL PATHOLOGY.

MM. P. HAUSHALTER and LOUIS SPILLMAN (Nancy) contributed a paper entitled

*Researches upon Alterations brought about in the Bone-marrow of Young Animals by Infection or Intoxication.*

The authors commenced by giving an account of the

different aspects presented by normal bone-marrow in young rabbits at ages varying from two days to two and a half months. They then went on to describe the alterations brought about in 49 rabbits, aged from two days to three months, alterations brought about by infection or intoxications produced by subcutaneous and intravenous injections or by way of the alimentary or pulmonary tracts. The substances used were various cultures, microbial toxins, extracts from fæcal matter, and sundry poisonous substances. They divided the appearances shown by the marrow after infection into classes of the following types: (1) a simple fœtal type showing the cells crowded together without fatty vacuoles; and (2) a type wherein the vacuoles were absent; but the cells were crowded and red, infiltrated, or massed together cells also were seen. In addition to these they distinguished three other types showing certain special features. From their observations MM. Haushalter and Spillman concluded that the particular type observed after inoculation had no relation to the age of the animal, to the length of time for which it survived, to the method of infection, to the nature of the substance inoculated, or even to the intensity of the infection or intoxication. The medullary reaction was able to manifest itself in a marked way in slight general or local infections, but was insignificant in rapidly fatal infections. Microbes and various toxic or chemical substances introduced into the organism by various routes acted upon the marrow of a young animal in very similar ways, bringing about alterations in it which corresponded to a powerful method of defence employed by the organism. Infection of the pregnant female, as other observers had shown, could bring about medullary alterations in the offspring.

Professor G. RUMMO (Palermo) read a paper upon

*The Nature and Essence of the Toxic Qualities of Blood-serum both when Normal and Pathological.*

He said: "The numerous works published in Italy, France, and in other countries upon this subject have entirely borne out the results of experiments first undertaken by myself and M. Bordoni in 1888 and continued by myself in 1891 and in following years. The group of symptoms of poisoning brought about by injections of heterogenous blood-serum have been accepted by those observers who have followed my work. Some slight discrepancies have arisen as to the toxic dose due to the different animals experimented upon, in the method of collecting the serum, in the rapidity with which the clinical picture develops, and so although I have always brought about a very acute poisoning others have observed a more or less slow intoxication and have arrived at a lower toxic co-efficient. My experiments show that the toxicity of blood-serum does not depend upon urea or upon mineral substances any more than upon increase in the amount of blood matter or acute infection or upon substances which are formed outside the vessels. Kohler's theory as to the fermentation of fibrin and Landois's as to a corpuscular decomposition are not now tenable. As a matter of fact, an animal can lose with impunity one-fifth of its blood and there is no relation between corpuscular disintegration and the toxicity of blood-serum. For instance, the serum of ox blood, which has a high toxicity when injected into a chicken, does not disintegrate the corpuscles to anything like the same extent. *Vice versa*, ox blood-serum passed through a Chamberland filter loses the greater part of its toxic power although the disintegrating power is preserved. In my opinion the toxic power of heterogenous blood-serum is due to toxic principles, to true animal poisons which the blood picks up from the tissues, which are promptly eliminated by the emunctories and which are neutralised by certain glands. These principles are partly fixed and partly volatile and are altered by putrefaction. Given by way of the stomach serum is only slightly poisonous. When introduced into the veins it brings about disturbances in the nervous and muscular systems, in the blood, in the myocardium and its intrinsic innervation, in the blood-pressure, in the heat centres, and in metabolism." Professor Rummo went on to say that he had studied the chemistry of the subject and was able definitely to say that the toxic principles resided in the albuminous bodies of the serum or at least in substances which were precipitated with the albumins.

Dr. F. W. PAVY, LL.D., F.R.S., consulting physician to Guy's Hospital, read a paper upon

*Fundamental Points connected with the Pathology of Diabetes Mellitus.*

The following were the principal points demonstrated. The primary point to be dealt with in connexion with diabetes mellitus was that carbohydrate, in the form of sugar, was eliminated with the urine in a manner that did not occur in health. From this it followed that in diabetes an inaptitude existed within the system for the proper application of carbohydrate matter to the purposes of life. Thus, briefly stated, diabetes consisted fundamentally in a mal-application of carbohydrate through an error existing somewhere or other within the system. The amount of carbohydrate reaching the system from the food was exceedingly variable, but under natural circumstances no matter what amount within ordinary limits was ingested it did not afterwards become visible to them. All that was observable was that it disappeared from view and that the system derived benefit from it. Exactly the reverse was met with in diabetes. Instead of disappearing from view the carbohydrate reaching the system from the food was afterwards discoverable in the urine as sugar. Proportionately to the amount of carbohydrate ingested so was sugar discoverable in the urine. Penetrating further, the blood of the general circulation was found to stand in a similar position to the urine. Normally, there was in the urine a certain small proportion of sugar which was not to any sensible extent influenced by the character of the food. Normally, also, in the blood there was a certain standard amount of sugar present irrespectively of the nature of the food. There was no difficulty in definitely expressing its quantity and it might be said to stand at somewhere about 1 per 1000. It seemed to be a standard component of the blood just as they found sugar entering as a constituent into the various tissues of the body; and, moreover, it was susceptible of being shown[1] that, as in the tissues, the sugar was not solely dextrose, but dextrose associated with other cupric oxide—reducing carbohydrates so as to give rise to a product possessing a cupric oxide—reducing power considerably below that of dextrose. Such was a representation of the normal state and the small amount of sugar present in the urine corresponded, it might be considered, with that existing in the blood.[2] Concurrently with the outflow of sugar in diabetes there was an increased amount recognisable in the blood. The sugar eliminated had pre-existed in the blood and the fault lay in its having been there. Carbohydrate food now led to the undue presence of sugar in the contents of the circulation and it was by virtue of this that it appeared in the urine. The sugar escaping might be taken as an index of the sugar that had wrongly been present in the blood. The point was thus reached that diabetes was fundamentally connected with the wrong presence of sugar in the blood and the question that next presented itself was, To what cause was the wrong presence attributable? Could it be that the carbohydrate of their food naturally reached the general circulation as sugar and through failing to disappear accumulated and then passed into the urine? or was it that the carbohydrate ought not in reality to reach the general circulation and by wrongly doing so rendered itself evident in the manner that was observed? Dr. Pavy then recounted experiments proving that if sugar were injected into the blood it was not destroyed but after the lapse of some time appeared as such in the urine. Insuperable difficulties attended the view that the carbohydrate matter of their food passed in the form of sugar through the circulation to the tissues for destruction. The facts of modern science gave it no support—indeed, they stood opposed to it. The transit could not occur without being brought to their knowledge by the state of the urine, and no possibility of disappearance existed of a nature to satisfy the requirements of the case. To provide for freedom from glycosuria the carbohydrate of their food must be prevented from reaching the general circulation as sugar and this point brought them to the consideration of the broad question of the mode of utilisation of carbohydrate in the animal economy. The problem now before them was, In what way did the carbohydrate matter of their food become disposed of so as to be prevented reaching the general circulation as sugar? Any solution that was offered of this problem to be satisfactory must locate the disposal somewhere between the seat of absorption and the point where the general circulation was reached—that was, somewhere before the hepatic veins were arrived at. Dr. Pavy then went on to say that, broadly speaking, carbohydrate matter in organism was disposed of as follows: small molecular sized carbohydrates were built up with concurrent dehydration into large-sized

[1] Pavy: Journal of Physiology, xxiv., p. 486.
[2] Baisch, Zeitschrift für Physiologische Chemie, xx., 1895, p. 249.

molecules by protoplasmic action, while large molecular sized carbohydrates were broken down and hydrated into small molecules by ferments. He proceeded to say that it was the change wrought upon absorbed carbohydrate that placed it in a position to pass in the direction of utilisation, and evidence went to show that if this change was not brought about it remained as sugar and in this state was carried to the general circulation whence it flowed off as waste material with the urine. Thus what was wanted to avert the outflow of sugar was that by the proper performance of assimilation the carbohydrate should be disposed of without sugar being permitted to reach the general circulation. To this question of assimilation he would now direct attention. He had entered into it fully in his work on "The Physiology of the Carbohydrates," published in London in 1894. A German translation by Karl Grube was published in the following year by Deuticke of Vienna. As a result of experimental inquiry he had been led to consider that by the following three processes the carbohydrate of their food was disposed of in the villi and in the liver and thus prevented reaching the general circulation as sugar: (1) transformation into fat; (2) synthesis into proteid; and (3) transmutation into glocogen. Dr. Pavy then proceeded to give an exhaustive account of how these transformations were effected. Shortly, his conclusions may be summed up thus: carbohydrates were transmuted into fat by the action of the protoplasmic cells of the villi. As to synthesis into proteid this was effected by the carbohydrate reaching the villi as sugar. Falling within the influence of the cell proteid-plasm encountered the carbohydrate became incorporated into proteid. Transmutation into glycogen occurred chiefly, though not exclusively, in the liver. By assimilation in the manner pointed out above the sugar carbohydrate was prevented from reaching the general circulation as sugar. If assimilation was not fully carried out the non-assimilated carbohydrate reached the general circulation as sugar and appeared as such in the urine. Dr. Pavy proceeded to say that by a test diet information was readily obtainable regarding the extent to which the assimilative power was deficient. It might happen that the loss of assimilative power was such that even with a properly constructed fully restricted diet the carbohydrate contained in it (it was not possible to construct an existence diet *entirely* free from carbohydrate) sufficed to throw a certain amount of sugar into the urine. Ordinarily the loss did not amount to this and thence by the restricted diet a sugar-free state of urine might be induced. With a less extent of loss a certain amount of food of a carbohydrate nature would be found to be susceptible of being taken without leading to the passage of sugar; and thus it was observed to run on, more and more carbohydrate being tolerated in proportion as there was less and less loss of assimilative power. The effect of adjusting the supply of carbohydrate to the assimilative power existing to dispose of it was intrinsically to place the system in a natural state. It was not the mere fact of the waste of food attending the elimination of sugar that constituted the source of trouble in diabetes; this was but a minor part of the question. The source of the various symptoms was the presence in the system of the sugar which had preceded the elimination. The blood of the general circulation stood in a position antecedent to the urine. The sugar found in the urine had previously existed in the blood and had thus created in this fluid a deviation from the natural state which told injuriously upon the entire system. It was not natural for the blood of the general circulation to contain more than a certain small amount of sugar which under normal circumstances was not influenced by the presence of carbohydrate matter in the food. When an increased quantity of sugar was present as the result of faulty assimilative action it was thrown into an unnatural state by which its fitness for administering to the nutritive and other operations of life was interfered with. The various symptoms encountered in diabetes depended upon the abnormal presence of sugar in the blood, and immediately this condition was altered by excluding from the food the carbohydrate that failed to be assimilated the symptoms subsided. The speediness of the alteration in the condition of a patient was often wonderfully marked. The transit of sugar through the system that could be controlled by the reduction of ingested carbohydrate meant the infliction of unnecessary harm, and the harm inflicted stood proportionate to the amount of sugar that was allowed to reach the system and thence escape with the urine. The fact of the voidance of sugar afforded evidence that the system was already overburdened with carbohydrates and anything which conduced to its increase would have the effect of adding to the troubled state existing. What was wanted for rectifying matters was restoration of the assimilative power. This, according to Dr. Pavy's experience, was not attainable unless the system was brought into a natural state by controlling the transit of sugar through it from the food. This was indicated by the removal of sugar from the urine, and with this removal steadily maintained cases presented themselves in which first of all a little carbohydrate food was found to be tolerated without leading to the voidance of sugar and then more and more until it might possibly happen that an ordinary diet could be resumed without occasioning a re-appearance of sugar in the urine. The class of case in which this favourable issue might be met with was that occurring amongst persons above the middle period of life, and in this class instead of being a rare event it was not uncommon to find that the assimilative power might be restored to a certain point and at this point, more or less short of what was natural, remain. Under such circumstances, as long as the carbohydrate taken was within the limit representing the assimilative power existing there was no sugar voided, whilst when the limit was overstepped sugar appeared in the urine in proportion to the extent to which the excess had reached. It was the "*alimentary*" form of diabetes to which Dr. Pavy had been referring and in this form the elimination of sugar was not only controllable by regulation of the food but there was an absence of abnormal tissue disintegration. In the other and more grave form of diabetes to which Dr. Pavy had suggested [3] that the term "*composite*" should be applied the eliminated sugar was in part derived from the tissues of the body as well as from the food. By morbid tissue breaking down the carbohydrate contained in the proteid molecule became cleaved off and passing into the blood reached the urine. Other products also arose from this abnormal tissue disintegration and through these likewise passing into the urine an indication was afforded of the action going on. β-oxy-butyric and di-acetic acids accompanied the sugar and distinguished the "*composite*" from the "*alimentary*" form of the disease. In the latter the pathological condition was confined to a mal-assimilation of the carbohydrate matter of food, whilst in the former there was this and in addition an abnormal setting free of carbohydrate in the form of sugar from a previously combined state. If, now, they gave a comprehensive glance at the position of their knowledge of the conditions standing at the foundation of diabetes it might be said that the effect of modern research was to carry them away from the view that there was a functional transit of the carbohydrate matter of their food as sugar through the general circulation to the tissues. Under such a view they were faced with insuperable difficulties in relation to the information they possessed with regard to both health and diabetes, whilst under the view contended for in this communication everything satisfactorily fitted in and a rational working basis for the treatment of diabetes was supplied.

### *Glykæmia and Diabetes Mellitus.*

Professor I. SEEGEN (Vienna) read a paper in which he stated that glucose was a normal constituent of the blood and that glykæmia was essential to health. He had examined the blood of 10 healthy men of various occupations between 20 and 30 years of age and had found that the amount of sugar in it varied between 0·16 and 0·18 per cent. Hyperglykæmia was different from normal glykæmia. According to Bernard the limit between them was drawn at 0·25 per cent. Beyond this amount a portion of the sugar of the blood was excreted by the kidneys. Hyperglykæmia was regarded as a necessary condition preliminary to glycosuria. Opinions varied as to the cause of hyperglykæmia. Chauveau and Kaufmann believed it to be due to an over-production of sugar. They relied on differences in the amounts of sugar found on chemical analysis of venous and arterial blood; but Professor Seegen had shown that these differences were within the limits of error and that the method was unreliable. He believed that hyperglykæmia was caused not by over-production of sugar but by interference with its transformation, so that sugar accumulated in the blood. By estimation of the sugar contained in the blood of diabetic patients Professor Seegen had ascertained

[3] THE LANCET, June 16th, 23rd, and 30th, 1900.

that there might be well-marked glycosuria without concomitant hyperglykæmia. It was only in cases of severe diabetes which persisted in spite of the absolute withdrawal of amylaceous food that the sugar of the blood was notably increased, reaching 0·3 or 0·4 per cent.

M. BOSC (Montpellier) read a paper upon

*The Treatment of Typhoid Fever by Injections of Artificial Serum.*

He said: "Basing my ideas upon a very considerable clinical experience I have come to the conclusion that alongside the usual methods of treatment employed in typhoid fever—namely, the cold bath and the use of caffeine—an important place ought to be given to subcutaneous injections of saline solution. A daily dose given subcutaneously of from 800 to 1000 cubic centimetres of artificial serum brings about two sets of phenomena in typhoid fever patients. First come phenomena of reaction, such as sweating, profuse micturition, and the like, which are relatively unimportant and soon give place to post-reactionary phenomena. These last from 12 to 24 hours, or even 48 hours, and are characterised by an elevation of blood-pressure, an increase in the force of the heart beat, a fall of the temperature, and finally, by a great activity of the emunctories. After the third or fourth injection the blood-pressure, which before was perhaps only from eight to 10 centimetres, rises to 17 or 18 centimetres, and finally is maintained at about 14 centimetres. The antipyretic action of injection of saline solution is not only marked but is also persistent. The amount of urine secreted is much increased and a general tonic action is apparent. I would add that in cases of typhoid fever complicated with intestinal hæmorrhages I have seen remarkable hæmostatic effects produced by the injection. The sole contra-indication for the use of this remedy is the fear of raising the arterial tension too high, but this danger is in great part guarded against by the greatly increased diuresis.

M. CHARRIN (Paris) had found that the serum of animals injected with solutions of mineral substances increased in bactericidal qualities. He would like to know whether M. Bosc had noticed any analogous properties in the serum of his typhoid fever patients who had been treated by injections of artificial serum.

M. BOSC replied that he had not studied the subject from this point of view.

M. BALTHAZARD (Paris) said that in a case of diphtheria treated in M. Richardier's wards by injections of saline solution it was noticed that the toxicity of the urine was much increased. Such treatment, therefore, must aid in the elimination of poisons.

M. BAYLAC (Toulouse) was afraid that the continued use of subcutaneous injection might give rise to septic accidents. For himself he preferred the use of enemata which gave just as good results.

M. BOSC, in reply, said that with reasonable care there was no danger of sepsis, provided that the usual rules for its prevention were observed.

*Extra-Buccal Alimentation.*

Dr. W. VON LEUBE in his remarks on this subject drew attention to the administration of nourishment by nutrient enemata and by subcutaneous injection. Proteid matters were well absorbed by the rectum, but after the prolonged use of enemata proctitis frequently ensued. Carbohydrates were also suitable for this means of feeding and the best form to use was starch, which was transformed in the rectum into grape sugar and irritated the rectum to a lesser degree than did cane sugar. Fat was not suitable for nutrient enemata, but meat and fat pounded with the pancreas of an animal might be recommended. By means of subcutaneous injections fat was well absorbed, but peptones, albumoses, and carbohydrates were not suitable. The speaker therefore suggested that in those cases in which no nourishment could be taken by the mouth a combination of nutrient enemata and subcutaneous injections should be employed.

Professor C. A. EWALD (Berlin) contended that extra-buccal alimentation was not a complete substitute for feeding by the mouth and could not fully satisfy the claims of the body for any length of time, and in the great majority of cases wasting supervened when extra-buccal feeding was entirely resorted to. An exception might be made to this statement, however, in those cases in which there was a benign stricture of the œsophagus. The best results were obtained when enemata were given simply as a temporary measure or when this mode of alimentation was added to the ordinary means of feeding. Nutrient enemata were much to be preferred to subcutaneous injections. In fact, Professor Ewald was of opinion that the latter could only be considered as experiments and not as recognised measures for administering nourishment.

M. CHANTEMESSE (Paris) read a paper upon

*The Action of Microbial Toxins upon the Myocardium.*

He said that before studying the effects of microbial poisons upon the myocardium M. Lamy and himself made some observations upon the isolated heart of a tortoise which was supplied with fresh blood. They were thus able to obtain a number of tracings registering changes in the volume and rhythm of the heart. (These tracings served as controls.) The toxins of typhoid fever and of diphtheria only acted slowly and after a period of latency, during which the action of the heart was in no way disturbed. It appeared as though the anatomical elements of the heart gradually took up the poison and that their action was not impaired until saturation point was reached. By employing very strong doses of poison they were enabled to bring about arrest of the heart which remained absolutely irresponsive to stimuli at the end of two hours. If instead of passing the poison directly through the heart it was first injected into an animal and the blood of this animal then used to feed the heart, the heart was much more violently affected. It would almost appear that the poisoned blood had a tetanising effect. However, after an hour or two of tachycardia the heart recovered itself. If, however, a fresh supply of blood from the same poisoned animal was again circulated through the heart the same cycle of phenomena recurred. The question was then, What was this cardio-excitant which existed in the blood of a poisoned animal? Was the toxin modified by the organism or was an *anticorps* produced by the living cells proportionately to their affection by the poison? The second hypothesis appeared to them the more plausible.

M. CENTANNI (Ferrara) read a paper upon

*The Fixation of Anti-pneumococcic Serum in the Organism and the Multiplicity of its Component Bodies.*

M. Centanni gave an interesting account of his various researches on the subject and concluded as follows: "In my opinion pneumococcic manifestations as well as those of other infections are due less to the direct action of the bacilli than to the rapid supply to the blood of secondary poisons having their origin in the altered tissues. Equally the results of my researches enable me to state that side by side with the multiplicity of bodies which go to make up an antitoxic serum the organism itself takes an active part in the mechanism of immunity."

M. PHISALX (Paris) read a paper upon

*The Sources of Natural Immunity.*

He said: "If a vigorous adult dog is injected under the skin of the thigh with a fresh non-sporulating but virulent culture of *charbon*, and if after an interval of from five to 18 days the animal is killed and cultures are made from the glands of the inguinal region, new cultures are obtained altogether different from the original anthrax culture inoculated. These gland cultures are deprived of all virulence, but according to the length of their stay in the gland and the intensity more or less marked of the local reaction the morphological characters of the bacillus are sometimes still recognisable, and at other times so completely changed that any observer not previously warned would assign them to a race having no affinity with the bacillus anthracis. They appear as micrococci, either single or in chains; they are non-virulent, stain by Gram's method, and do not form spores. To demonstrate their relationship to the bacillus anthracis I have inclosed cultures in capsules of collodion which I have then introduced into the peritoneal cavity in dogs. If one of these capsules full of virulent anthrax culture is withdrawn from the peritoneal cavity after a three months' stay it will be found to contain only micrococci capable of reproducing themselves indefinitely. This fact proves not only that the bacillus anthracis is transformed but also that the transformation takes place under the influence of soluble and dialysable substances. Why is this modification so slow in taking place in the capsules, although so rapid when the bacilli are exposed directly to the organism of the dog? By employing dogs' serum as a culture medium in the capsules I have ascertained that the transformation into micrococci becomes much more rapidly effected. It happens still more quickly if the capsule accidentally breaks so that white corpuscles are

able to enter. It is therefore probable that in the living animal the bactericidal power is exerted by a continuous supply of assisting principles which are elaborated mainly by the glands of the lymphatics and by the white corpuscles."

M. SABRAZÈS (Bordeaux) read a paper on

*The Diagnosis of Pure Nervous Leprosy by Inspection of a Living Nervous Filament; the Part Played by Mosquitoes in the Inoculation of the Disease.*

M. Sabrazès commenced by saying that although nodular leprosy was easy to diagnose the pure nervous form was very difficult. In the case of a man, aged 32 years, who suffered from this form of leprosy affecting the area supplied by the sciatic and the external popliteal nerves on the left side he had been able to confirm the diagnosis by inspection of a sensitive nerve filament excised from the anæsthetic region. He considered that mosquitoes might be agents for the transmission of the disease, for the blood of a leprous patient contained Hansen's bacilli in large numbers.

M. BABES (Bucharest) said that a long time ago he had demonstrated the presence of Hansen's bacilli in nerve filaments taken from a leper. He had also put forward the theory that these bacilli could penetrate directly through the skin.

## BACTERIOLOGY AND PARASITOLOGY.

*Immunity.*

Dr. HANS BUCHNER (Munich) read a paper on this subject, treating it under the headings of Natural Resistance, Specific Immunity, and General Conclusions. He preferred the term "natural resistance" to the commonly employed one, "natural immunity," because he considered that the term "immunity" ought to be reserved for a specific, very characteristic condition quite different from natural resistance. Apart from cases of congenital insusceptibility to toxins, natural resistance consisted principally in the microbicide influence of the fluids and of certain cells of the organism and in their richness in alexins. It accounted also for the cure of infective processes which threatened the organism attacked and in which specific immunity recently acquired played no part. In staphylococcic infections, such as boils, abscesses, &c., recovery seemed to be due to an increase of the local or general natural resistance but not to specific immunisation. M. Metchnikoff and M. Bordet discovered several years ago that the alexins of the sera had for the most part their origin in the leucocytes. They supposed, however, that they had to do not with a secretion by living cells but with a passing over of the alexins into the serum after the death and breaking-up of the cells. M. Laschtschenko discovered in Dr. Buchner's laboratory that with a series of different sera heated to 60°C. it was possible to extract bactericide alexins from the leucocytes of rabbits without destroying the leucocytes. There was therefore evidently secretion by the leucocytes without destruction of them. The alexins consequently appeared to be usually secretions formed by living leucocytes and it followed for the explanation of phagocytosis that the bacteria were with doubt enfeebled by chemical action before being devoured. It was unquestionable that living and even virulent bacteria might be devoured by the leucocytes, but it was known that microbes passed through phases of latent vitality during which their vital functions were suspended and were afterwards recovered. If, therefore, in consequence of unfavourable external influences the processes of nutrition and multiplication ceased at intervals it was not always necessary that the micro-organism should be destroyed or permanently weakened. The main argument against the generalisation of phagocytosis was the fact that in the interior of the body, in exudations, &c., bacteria could be destroyed without leucocytes being present. It could, therefore, never be proved, when phagocytosis was observed, that there had been no primary chemical injury of the bacteria before they were attacked by the leucocytes. The microscope would not serve to decide the question, which would doubtless remain unanswered for a long time. Phagocytosis was clearly enough not an indispensable condition for the destruction of bacteria. Dr. Buchner classified specific immunity under three heads: (1) antitoxic, produced by previous treatment with specific toxins or non-toxic modifications of toxins; (2) bactericide, produced by previous treatment with specific bacteria, either alive or dead; and (3) hæmolytic, produced by previous treatment with specific erythrocytes, fresh or heated to 60° C. In all three cases the blood of the animal experimented upon contained a substance (anticorps, Antikörper) which was not destroyed at 60° C. In Case 1 it was the well-known antitoxin contained in anti-diphtheritic and anti-tetanic serum. In Cases 2 and 3 it produced no immediately perceptible effect, but it acted in combination with the non-specific alexins. Natural resistance and specific immunity differed in principle, the former being characterised by the alexins and the latter by the specific substances (anticorps, Antikörper) just mentioned. These specific substances were not destroyed by a temperature of 65° C.; the differences between them depended not on the species of animal from which they had been obtained, but on the "Reaktionsobjekt" (toxins, bacteria, erythrocytes) with which the animal had been treated, and there was a chemotaxic attraction between the specific substance and the "Reaktionsobjekt." The alexins, on the other hand, were destroyed at 60° C.; they differed according to the species of the animal from which they had been obtained, and they did not exhibit the phenomena of chemotaxis.

*Toxins and Antitoxins.*

Professor EHRLICH in his paper summarised his conclusions under the following statements. 1. Toxins were extremely unstable substances found among products of secretion of animal or vegetable origin. 2. At present it was impossible to give a chemical definition of toxins, and that for two reasons, because (*a*) their tendency to change prevented them from being obtained in sufficient quantity and in a pure state, and (*b*) it was difficult to separate them from certain transformation products called "toxoids" which had an analogous composition. 3. The only criteria of a substance being a toxin were biological in their nature. These criteria were on the one hand the special phenomena presented by the toxic action, and on the other hand the power of determining under certain conditions the formation of antitoxins in the animal organism. This latter property permitted of an analogy being drawn between toxins and certain enzymes, an analogy which had been established by the work of Roux on the poison of diphtheria. 4. In contradistinction to the action of chemically defined poisons the action of most toxins was characterised by a period of incubation which never failed to occur, no matter how large a dose of toxin might be administered. Some poisonous substances which had no period of incubation—e.g., snake poison—resembled the toxins in their power of determining the formation of antitoxins and in their irritability. 5. Substances of definite chemical constitution were quite incapable of producing antitoxins. The statements that it was possible to obtain antitoxic sera efficacious against inorganic poisons, glycosides, or alkaloids, were founded on errors of observation. 6. It resulted from these peculiar properties of toxins that their action on the animal organism must be quite different from that of other poisons. The toxic action of toxins depended on their power of forming chemical and specific combinations with the protoplasm of certain groups of cells. Other poisons—e.g., the alkaloids—obeyed certain laws of distribution in the animal body, but they differed from toxins inasmuch as their relation with the parenchyma was far from a true chemical combination and was more akin to the phenomena of "solid solution." 7. The specific character of this chemical combination of the toxin molecule was due to this molecule possessing a peculiar chemical arrangement, the haptophore group. The fixation of the toxins on the tissues by the aid of this haptophore group did not sufficiently explain the toxic action of these compounds. This toxic action required the presence in the toxin molecule of a second group, the toxophore group, the influence of which on the protoplasm was conditioned by the combination of the haptophore group with the protoplasm. 8. Under certain experimental conditions the action of the haptophore group might be separated from that of the toxophore group. Thus Morgenroth had proved that in cold-blooded animals like the frog the haptophore group of the tetanus toxin molecule was capable of acting on the cells in the cold, but that the toxophore group required heat (explanation of Courmont's experiment). Differences in the time of action of the two groups also accounted for the period of incubation. Dönitz and Heymans following different methods proved that diphtheria toxin and tetanus toxin very rapidly became fixed in the tissues but that the pathological effects appeared slowly. 9. The fixation of the haptophore group of the toxin molecule in the protoplasm was accomplished by means of certain lateral chains which

the latter possessed and which were termed "receptors." These receptors shared also in the normal life of the protoplasm, inasmuch as they contributed to its nutrition by fixing the nutritive principles. Toxins had this in common with nutritive substances, that they possessed, like the latter, certain haptophore groups. In fact antitoxin substances (anticorps, Antikörper) might be produced by means of nutritive substances—e.g., Bordet's coaguline. 10. Receptors existed sometimes only in certain tissues, sometimes in the majority of the organs. (Tetanus toxin in guinea-pigs was of the one kind and in rabbits it was of the others.) 11. The absence of receptors in certain kinds of animals was, perhaps, one of the causes of natural immunity. On the other hand, the presence of numerous receptors in organs of small vital importance might produce, by a sort of deviation of the toxin molecules, a diminished sensibility of the organism with reference to that toxin (Dönitz, Roux). The receptors, far from being constant in the organism, might in certain cases undergo considerable variations (crotine, hæmolysine). 12. When the receptors of the protoplasm formed combinations with the haptophore group of the toxin these receptors ceased to be useful for the vitality of the cells, and phenomena of regeneration then occurred because the protoplasm renewed the receptors which had become unserviceable on entering into combination. In accordance with a general biological law this regeneration went further than merely to compensate what was deficient and became hyperregeneration (Ueberregeneration), which might be so exaggerated by repeated injections of toxins that at length the receptors regenerated in excess became detached and passed into the circulation. 13. These protoplasmic receptors circulating in the blood constituted the antitoxins. They preserved in this state their original property of chemically fixing the haptophore groups of the toxin. ..... 17. Löffler's diphtheria bacillus produced substances of two kinds—toxins and toxons, both of which had the property of fixing the specific antitoxic substance (Antikörper) and therefore possessed the same haptophore group. The action of the toxons was different from, and weaker than, that of the toxins. 18. Every diphtheria culture bouillon also contained non-toxic modifications of toxins; these bodies, however, were capable of combining with the antitoxic substance (Antikörper) and were known as "toxoids"; their formation depended on the fact that the toxophore group of the toxin molecule being much less stable than the haptophore group was much more easily destroyed under the influence of heat and chemical agents. Evidence of this was supplied by researches which had been made on the spontaneous attenuation of diphtheritic poisons preserved in the liquid state. These researches proved that while the toxic power of a given culture bouillon diminished considerably its neutralising power remained unaltered, the question being one of quantitative modification. 19. The toxoids were of different kinds, corresponding to the different causative agencies which were in operation. Many observations seemed to show that the toxin molecule might be destroyed in successive stages and that by employing suitable methods toxoids possessing a partial toxic power might be obtained. 20. It followed from this that specific antitoxins might be derived not only from toxins but from toxoids. Very sensitive animals such as mice and guinea-pigs might therefore be easily and rapidly immunised against tetanus by means of toxoids only. Therefore, when for patients abnormally sensitive on account of their illness only a moderate degree of immunisation was required it might be advisable to use toxoids.

*The Hæmatozoon of Malaria.*

M. A. LAVERAN said that the hæmatozoon of malaria (hæmamœba malariæ) presented two varieties which might be distinguished by the names "parva" and "magna" in accordance with the size of the parasites. Supposing that hæmamœba malariæ var. parva had been found in the blood of a patient in Senegal, if the person returned to France and again suffered from feverish attacks hæmamœba malariæ var. magna was generally found in the blood; the question was not one of different species but only of varieties. The methods of studying the parasite had made great progress of late years. Koch, Ziemann, Nocht, and Ruge had improved Romanowski's method. In the Proceedings of the Society of Biology for April 15th, 1899, and June 9th, 1900, M. Laveran had described a mode of staining the nuclei of the endoglobular hæmatozoa, which appeared to him to be more easy and certain than either the original or the modified one followed by Romanowski. The researches of Simond, Schaudinn, and Siedlecki upon the coccidia had thrown fresh light on the debated question of the flagella of the hæmatozoon of malaria, and it was now demonstrated that these flagella were male elements the function of which was to fecundate female elements. The observations made by Mac Callum, Opie, Koch, and Marchoux left no doubt on this subject, and in M. Laveran's opinion no one now maintained that the question was one of degeneration of the hæmatozoon. In 1884 M. Laveran suggested that in the absence of human beings the hæmatozoon of malaria was a parasite of the mosquito, an hypothesis which has been verified by the beautiful researches of Major Ronald Ross, I.M.S., supplemented by those of Koch, Grassi, Bignami, and Bastianelli. All the anopheles seemed to be able to convey malaria, the co-existence of anopheles and endemic malaria had now been demonstrated in a great many parts of the world; in non-malarious localities on the other hand only culex had been found. Anopheles which had bitten persons suffering from malaria might infect healthy persons; in the salivary glands of these insects germs were found which were inoculated along with the secretion of the venimo-salivary glands. It would, however, be premature to conclude that malaria was always inoculated in this way, for it was often contracted in uninhabited places; the fact that turning up and clearing the ground often gave rise to outbreaks of malaria was also difficult to explain on the hypothesis that malaria was always inoculated by anopheles which had fed on malarious blood. Protection against mosquitoes was, however, essential in the prophylaxis of malaria. It was also of importance to prevent relapses in patients who had already suffered from malaria, as such relapses would serve to infect anopheles. No means of obtaining an artificial immunity against malaria had as yet been discovered.

## THERAPEUTICS, PHARMACOLOGY, AND MATERIA MEDICA.

In the sub-section of Therapeutics some interesting papers were read, among which may be mentioned the Treatment of Biliary Lithiasis, by Dr. NAUNYN (Strasburg), following which came papers on the same subject by Dr. GILBERT (Paris) and Dr. FOURNIER (Paris). Professor BAGINSKY (Berlin) and Dr. HAYEM (Paris) then read contributions dealing with the Indications and Counter-indications for Blood-letting; Dr. LANDOUZY (Paris) read a paper on Saline Injections in Therapeutics; while Professor STOKVIS (Amsterdam) and Dr. LÉPINE (Lyons) asked the meeting the important question, Should Fever be Combated?

In the sub-section of Materia Medica Dr. THOMS (Berlin) made an interesting communication upon Solanum; Dr. VAN AUBEL (Liège) discussed the Active Principle of Digitalis; and Dr. BOURQUELOT (Paris) read a practical paper upon the Deterioration of Medicines through Oxidation.

The most important contribution to the sub-section of Pharmacology was made by Sir T. LAUDER BRUNTON, who read a paper upon the Physiological and Therapeutic Action of Digitalis and of its Active Principles.[1]

## NEUROLOGY.

*Importance of the Speech-Inhibiting Power of the Auditory Centre for Language.*

Professor PICK (Prague), in the course of his remarks on this subject, mentioned as a well-known fact that persons in whom word-deafness (*surdité verbale*) had suddenly developed itself suffered, in addition to paraphasia, from a special infirmity which had been called logorrhœa; they mumbled (*bredouillent*) spontaneously for a long time without cessation, and they repeated the same performance every time that the speech centre was stimulated—as, for instance, by a question being asked. Two explanations of this phenomenon had been given, but the most probable one was that logorrhœa was a consequence of the loss of an inhibitory function belonging to the auditory centre.

*Pure Motor Aphasia without Agraphia.*

M. P. LADAME (Geneva), in commencing his paper on Aphasia, said that confusion had been caused by the want of a sufficient distinction between aphasias and anarthrias. Anarthrias resulted from a lesion of the projection neurons which constituted the motor bundles of the phonation apparatus. Aphasias, on the other hand, were caused by a

This paper is printed in full on p. 477.

lesion of the association neurons, these neurons being either intra-cortical, inter-cortical, or trans-cortical, and trans-hemispheric or commissural. In ordinary motor aphasia the greater part of the channels of communication of Broca's convolution were more or less affected and the resulting symptoms were in relation with the complication of the lesions. In pure motor aphasia without agraphia—i.e., pure aphemia—the lesion was localised in the association neurons which placed Broca's centre in connexion with the phonetic centres in Rolando's convolutions in both hemispheres. The association fibres which connected the foot of the third frontal convolution with the motor centre for writing remained in that case quite free. Clinically, pure motor aphasia without complications of any kind was characterised by the loss of the faculties (1) of voluntary speech, (2) of repeating words, and (3) of reading aloud. The faculties which were retained were those (1) of spontaneous writing, (2) of writing to dictation, (3) of copying, and (4) of understanding words either spoken or read; the "*langage intérieur*" was, in fact, not interfered with. M. Ladame classified motor aphasias as follows: A. Pure motor aphasias. 1. Pure aphemia without agraphia. 2. Pure agraphia without aphemia. B. Complex motor aphasias. 1. Common motor aphasia (motor aphasia with or without agraphia, with paralyses, monoplegias or hemiplegias, epileptiform attacks, contractures, &c.). 2. Sensory motor aphasia (different combinations of motor aphasia with word-blindness and word-deafness). 3. Aphasia with mental disturbance.

*The Projection and Association Centres of the Human Brain.*

Professor FLECHSIG (Leipsic), in his paper on this subject, said that his researches had led to a division of the cerebral cortex into sensorial spheres (sensorial centres) and association centres (intellectual centres or organs of thought). This division, however, was distinctly seen only in the human fœtus and the young child; it was founded on the employment of the myelogenetic method which investigated the details of the central fibres by tracing the history of their development. Nerve-fibres belonging to the same group received their covering of myelin at practically the same period, whilst those belonging to different groups were covered with myelin at different periods, succeeding one another according to a definite law. Proceeding on this principle, he had outlined on the cerebral cortex about 40 myelogenetic cortical regions which he had arranged in three groups—(1) regions of early development, (2) regions of late development or terminal regions, and (3) intermediate regions. This classification was not intended to modify or replace the previous division into sensorial centres and association centres, the principle of classification in the two being quite different. Comparative anatomy was of no assistance in this investigation, and the information given by the anatomy of the normal adult brain was very imperfect in comparison with that derived from the anatomy of the brain of the fœtus or the new-born child. From the purely anatomical point of view the cortical regions might be divided into projection centres and association centres. Prof. Flechsig distinguished four projection centres—(1) the sphere of bodily sensibility, (2) the visual sphere, (3) the auditory sphere, and (4) the olfactory and gustatory sphere. Each of these spheres, except the auditory sphere, was formed by combining several myelogenetic cortical regions. The sphere of bodily sensibility contained eight, and each of the others contained three. Moreover, the sphere of bodily sensibility (called also the tactile sphere, the sphere of general sensation) occupied an area rather larger than that which Prof. Flechsig had assigned to it; at the level of the first frontal convolution it came several centimetres further forward. The anterior segment (about two centimetres long) of the gyrus supra-marginalis ought also to be added to it. The gyrus subangularis constituted a new projection field which Prof. Flechsig had discovered last of all; it showed in the structure of its cortex the characteristic features of the sensorial centres. Prof. Flechsig at first distinguished four association centres: (1) the frontal centre; (2) the parietal centre; (3) the temporal centre; and (4) the insular centre. At a later period he united the temporal and the parietal centres in a single centre—the great posterior association centre. A projection centre which was proved to exist in the gyrus subangularis reduced these two united centres to the posterior portion of the second temporal convolution; they were of no great breadth. Apparently there was some ground for retaining the early division into temporal centre and parietal centre. In the parietal and temporal centres it was particularly easy to make out a subdivision into peripheral zones, arriving early at complete development, and into central regions, attaining the adult state later. The same sub-division was evident in the frontal association centre, but the arrangement was more complicated. The peripheral zones touched the sensorial centres and were united to them by numerous fibræ arcuatæ. The insula and the præcuneus seemed to consist only of peripheral zones. Perhaps the peripheral zones constituted transition forms between regions rich in corona radiata and those which had none. Sometimes, although very rarely, atypical bundles of the corona radiata were found on the peripheral zones; they represented aberrant projection fibres. Such isolated observations in no way proved the general and regular presence of bundles of the corona radiata in the peripheral zones. The central regions of the association zones (especially the middle part of the gyrus angularis, the third temporal convolution, and the anterior half of the second frontal convolution) were to all appearance the nodal points of the long association systems, whilst the peripheral zones presented these characters in only a small degree. The central regions were all of them terminal regions; they were essentially characteristic of the human brain. Their destruction in isolated portions was never accompanied by phenomena manifesting any disturbance of motor power or sensibility. Phenomena of motor excitation by which these lesions might be accompanied ought to be interpreted as actions at a distance. The central regions of the association zones were centres which were in relation more or less direct each with several sensorial zones and some with all; they probably combined the functional activities of the sensorial zones. When they were destroyed on both sides the mental power was weakened and the association of ideas was particularly interfered with. The central regions were therefore to all appearance of great importance for the exercise of the faculties of the mind, for the formation of mental images composed of several sensorial operations for the performance of acts such as the naming of objects, reading, &c. These functions were disturbed with special regularity in morbid conditions of the posterior association centres. Clinical observation justified the division of the cerebral cortex into sensorial centres (projection centres) and association centres.

Professor HITZIG (Halle) said that Professor Flechsig's theory of the existence of projection centres and association centres possessing different functions in connexion with the cerebral cortex was based on the following considerations. 1. The alleged existence of projection fibres in the former and the absence of projection fibres from the latter. This assertion, however, could not be maintained in its full extent, for Professor Flechsig had abandoned it himself as regarded one part of his centres of association, and other observers declared that they had seen projection fibres coming from the association centres. It appeared certain that some regions of the cerebral cortex possessed a much smaller number of projection fibres than others which for their part were in more or less direct connexion with the terminations of the sensory or sensorial nerves. 2. The order of succession in the myelinisation of the projection centres and the association centres, as well as in that of the different projection centres in particular. This assertion, like the preceding one, could not be maintained in its full extent because Professor Flechsig himself had found discrepancies which he attributed to pathological influences, but which his opponents with equal right believed to be physiological. 3. The differences in the anatomical structure of various projection centres and the differences in the anatomical structure of the projection centres and the association centres. The opinions of the various authorities being entirely discordant, it was impossible to form a positive opinion on this subject. Professor Flechsig endeavoured to solve the questions connected with the function of the sensory centres by the perception of irritations proceeding from various sensory surfaces and by the association of them with mental images. He supported his views by arguments drawn from pathological observations, such as tactile paralysis, sensory aphasia, &c. In this part of the subject Professor Hitzig was disposed to agree with Professor Flechsig. The function of the association centres was found by Professor Flechsig in the retention of memorised images and in the reproduction and association of them, either by stimulation of adjoining sensitive spheres or perhaps by stimulation of other association centres. He considered them to be the real organs of mind and thought.

Professor Flechsig's views on this part of the subject appeared to be quite hypothetical. His hypothesis of memorised images laid up in certain groups of cells was not in any way proved. With these exceptions the work of Professor Flechsig and the line of argument which he had followed were to be regarded as marking a real advance in the knowledge of the structure and functions of the organ of thought. He would have done better if he had expressed himself less dogmatically.

Professor C. VON MONAKOW (Zürich) said that the theory of association centres and projection centres advanced by Professor Flechsig in 1895 had since that time been essentially modified and extended by its author in an article published in the *Neurologisches Centralblatt* of Nov. 1st, 1898. In this article, which marked a real advance in embryological research, Professor Flechsig divided the surface of the brain into 40 regions in which myelinisation took place at different periods; moreover, he entirely abandoned certain opinions which he had stoutly maintained not long before. The anatomical question involved was this: Were the projection fibres really much less numerous in the association centres than in the sensorial centres? The results at which Professor Monakow had arrived were as follows. The projection fibres united in the corona radiata and spread all over the surface of the brain were in direct connexion with only a relatively small number of cortical points. In all the convolutions the projection fibres formed only a small fraction of the total fibres of the medullary substance. There were therefore all over the surface of the brain considerable spaces encroaching on one another where no projection fibres were to be found. The aggregate of these portions of the cortex thus devoid of projection fibres might be called association centres in contra-distinction to the scattered foci where the projection fibres met. It was, however, impossible to outline even roughly the regions which were poorly supplied with projection fibres and those which were rich in them. Professor Monakow, like other observers, had failed to perceive fundamental anatomical differences between the two kinds of regions in the hemispheres. Moreover, there were in other regions of the brain (the central grey substance) portions of small extent which were also devoid of projection fibres and in which it was not customary to distinguish projection centres and association centres. The arrangement of the fibres in the white substance of the brain did not follow a uniform plan. The division adopted by Professor Flechsig, who considered only the projection fibres of the sensorial tracts, did not take sufficient account of many portions of the brain which were anatomically well defined. For instance, it made no reference to the cerebellum, the locus niger, the nucleus of the tegmentum, the pulvinar, &c. Professor Monakow did not agree with Professor Flechsig's theory according to which all the projection fibres of a cortical sensorial tract became coated with myelin almost simultaneously, his own theory being as follows. Under the name of a neuron group (Neuronencomplex) he included all the individual neurons which unite with one another and progressively form coördinate systems (in the sense of Meynert's systems of different orders of projection) containing a number of neurons which showed a progressive numerical increase as they approached the cortex and of which the minimum was required to produce in the adult a nerve effect (the perception of light, for instance). A sensory tract was composed of a great number of these neuron groups, similar in their nature, of which the most centrally situated were the first to be covered with myelin, the peripheral ones being covered at a later stage.

### *Nature of Tendon Reflexes.*

Professor E. JENDRASSIK (Budapest) read a paper on this subject, the summary of it being as follows: 1. The tendon reflexes were true reflex movements the path of which traversed the grey substance of the cord. 2. The patella reflex and the tendon reflexes in general were the result of a sudden, mechanical, momentary stimulation of the sensory nerves of the tissues surrounding the tendon and were not transmitted to the muscle by vibration of the tendon. 3. The patellar reflex and the tendon reflexes in general could not be put in the same category as other reflex movements. The ordinary cutaneous reflexes were reflexes the circuit of which included the brain and probably the cortex, whilst the reflex movements observed in paraplegics suffering from myelitis—namely, flexions of the thigh and leg and dorsal flexion of the foot (rarely any other kind of movement) produced by prolonged stimulation of the skin—were pathological reflexes resulting from a sort of overflow of the nerve-current prevented from finding its way to the brain or from an increased excitability of the nerve elements of the cord disconnected from the higher centres. 4. Muscular tonus had a great influence on tendon reflexes; if it was increased the reflex was more active; diminution of tonus might even abolish these reflexes. 5. The abolition of patellar reflexes in tabes was not sufficiently explained by current theories; it was very probable that the diminution of the muscular tonus was the ordinary cause of this abolition. 6. In disease of the brain abolition of the tendon reflexes was exceptional. 7. In disease of the cerebellum abolition of the tendon reflex had been observed in only a small number of cases. 8. Loss of the patellar reflexes was by no means a proof of a total transverse division of the nerve elements of the cord. 9. Abolition of the patellar reflexes in traumatic lesions of the cervical or dorsal portions of the cord was a clinical proof that the grey substance of the lumbar portion of the cord was also involved; this extension of the pathological process was not always demonstrable by ordinary histological means, but it was proved by the occurrence of severe trophic disturbances, such as acute bedsore, septic cystitis and pyelitis, vaso-motor affections, muscular atrophy, &c. The abolition of the patellar reflexes was therefore an unfavourable symptom except in the rare cases where the loss of these reflexes was caused by nervous shock. 10. The examination of the patellar reflexes was not always easy to make in paraplegia and it was not uncommon for appropriate means to succeed in eliciting this reflex in cases in which it had seemed to be absent.

Professor C. S. SHERRINGTON (Liverpool) said that two distinct sets of phenomena were included under this name—namely (1) true spinal and spino-cerebral reflexes from tendons; and (2) pseudo-reflexes commonly known as tendon phenomena or by British and American writers as "jerks." The former—i.e., No. (1)—were easy of explanation. The tendons of muscles, long ago recognised by Bichat as capable of affecting sensation, contained the end-organs of afferent nerves. These were the end-organs described by Golgi, by Ruffini, and others. These organs could be excited by mechanical means, probably mechanical strain was the stimulus which was their normal and adequate mode of excitation. The true tendon-reflexes were not of so much importance to clinical medicine as were the pseudo-reflexes (tendon-phenomena, "jerks"). The latter—i.e., No. (2)—was typified by the "knee-jerk." An objection to calling them "tendon-phenomena" was that the tendon was not essential to the phenomenon. That they were not true reflexes was shown by the time of the latency of the reaction being so brief as to exclude the possibility of reaction through a nerve-centre. The "jerk" was a direct response by the muscle to sudden mechanical strain. It was only when the excitability of the muscle was great that this direct response could be elicited from it. When the muscle was cut off from the spinal motor neurons which innervated it its excitability fell too low for the response to be possible. When the afferent spinal roots connected with the spinal tonus of the muscle were severed the excitability of the muscles also fell too low for the direct response to sudden mechanical strain. There was therefore necessary for the "jerk" the maintenance of the spinal tonus of the muscle. The reflexed arc on which the spinal tonus of the muscle depended was composed of the afferent nerve-fibres coming from the muscle (vasto-crureus, in the case of the "knee-jerk") itself and of the motor neurons innervating that muscle. The activity of that reflex arc could be exalted or inhibited by the activity of various other spinal and spino-cerebral arcs. Removal of the cerebral hemispheres led immediately to very great exaltation of the tonus of the vasto-crureus muscle traceable to exalted activity of spinal motor neurons innervating that muscle. The knee-jerk was then much exalted so that a rhythmic series of jerks might follow a single tap on the patellar tendon. On the other hand, the activity of spinal motor neurons innervating the vasto-crureus might be depressed by exciting the activity of the motor neurons which innervate the antagonistic muscles, the flexor muscles of the knee. The activity of these motor neurons of the flexors of the knee was habitually associated with some degree of inhibition of the extensor muscles of the knee. The most easy spinal reflex to obtain in the hind limbs by excitation of the limb itself was flexion of the limb at the knee and at the hip. Hence an easy way of causing inhibition of the

knee-jerk was to excite a reflex movement of the hind limb from some portion of the limb, because the flexors of the knee were brought into play and the activity of the motor cells of the extensors was then partly or completely inhibited. The inhibition could be peculiarly obtained by stimulating the flexor muscles themselves—e.g., the semi-membranosus.

*Non-tabetic Lesions of the Posterior Columns of the Spinal Cord.*

Dr. ALEXANDER BRUCE (Edinburgh) commenced his paper on this subject by describing the constitution of the posterior columns as shown by degenerations following: (1) lesions of nerve-roots; (2) lesions of the cord itself interrupting the continuity of the posterior columns; and (3) lesions of the grey matter. Passing on to the exogenous tracts, he said that the differentiation of Goll's and Burdach's columns depended on the termination of their long fibres in the nucleus gracilis and nucleus cuneatus respectively. Burdach's column commenced at the fifth dorsal segment. Goll's column had a definite and characteristic form at each segment, any departure from which indicated a partial involvement of its components. Kahler's law regarding the positions of the exogenous fibres in the columns was generally true but required some modification for the cervical and dorsal regions. It was applicable to descending branches of the roots also. The relative position of ascending fibres of roots, as far as known, was considered. The endogenous tracts were then discussed—namely, the cornu-commissural zone of Marie, the comma tract of Schultze, the septo-marginal tract (including the oval field of Flechsig and the triangular area of Gombault and Philippe), the descending tract of Hoche, and the postero-internal root-zone of Flechsig. It was shown that they were not purely endogenous but contained exogenous fibres also. The endogenous fibres of the cornu-commissural zone were short and degenerated upwards. Those of the comma tract degenerated downwards for several segments. Those of the septo-marginal tract were derived from segments as high as the eighth cervical and degenerated downwards. The postero-internal root-zone was mainly composed of root-fibres of indeterminate length which entered it horizontally in the sacral and dorsal regions and in the lumbar and cervical regions passed obliquely upwards into it. The areas of Flechsig were considered. Dr. Bruce then discussed the pathological changes in the posterior columns considered in relation to the diseases which involved them, taking as examples (*a*) progressive muscular atrophy of the Charcot-Marie type; (*b*) cerebral tumours which frequently produced degenerations in the posterior columns, sometimes interpreted as due to retrograde degeneration from the nuclei of the columns; (*c*) syringomyelia; (*d*) Friedreich's ataxia; and (*e*) combined sclerosis of the posterior and antero-lateral columns, including pellagra, ataxic paraplegia (Gowers) or ataxo-paraplegic tabes (Dejèrine), the combined system degeneration of German authors, and combined degeneration in grave anæmia. In pellagra, the sclerosis, according to Tuczek, affected chiefly the column of Goll and the middle root-zone, and spared relatively the cornu-commissural and the septo-marginal tracts. The roots, according to Tuczek, were healthy; according to Babes they were degenerated. Both these observers regarded the sclerosis as the result of the destruction of the nerve fibres by the direct action of some toxins. In ataxic paraplegia the lesions resembled those of sub-acute combined degeneration, but the disease differed from the latter in its much more prolonged course. The degeneration of the columns in grave anæmia seemed to be the same as those described by Rothmann as combined system-disease, and by Russel, Collier, and Batten as sub-acute combined degeneration. The lesion was most marked in the dorsal and the cervical region. It affected mainly the middle root-zone in the lumbar region and in the cervical and dorsal chiefly Goll's columns.

Dr. C. L. DANA (New York) said that the points of view from which the posterior columns of the spinal cord and the posterior spinal roots, so far as diseases were concerned, were studied were (1) diseases in connexion with the embryological areas; (2) diseases in connexion with the exogenous and endogenous fibres; and (3) diseases connected with the vascular supply. He gave a brief review of the non-tabetic lesions and then discussed the subject of acute ataxia due to spinal lesions, "acute spinal ataxia."

Dr. E. A. HOMÉN (Helsingfors, Finland) gave the results of observations made on 16 cases at the Helsingfors Pathological Institute.

*Nature and Treatment of Acute Myelitis.*

Dr. G. MARINESCO in his paper on this subject said that acute myelitis was characterised by a multiple process involving the vessels, interstitial tissue, and nerve cells. The pathological lesion of most frequent occurrence was hæmorrhagic softening, caused by toxic and infective agencies, of which the most important were the streptococcus, the infectious principle of rabies, and the pneumococcus. Dr. Marinesco had tried Marmorek's serum in the treatment of cases of streptococcal origin, but had not found it successful.

*Differential Diagnosis of Organic and Hysterical Hemiplegia.*

Professor D. FERRIER (London) in his paper on this subject said that hysterical hemiplegia might simulate hemiplegia due to organic cerebral disease, and there was scarcely a single symptom uniformly present sufficient of itself to enable one off-hand to differentiate the one from the other. A correct diagnosis was, however, in most cases possible, and this depended on a consideration of several factors, of which the more important were the following:—(1) the personal and family history; (2) the mode of onset; (3) the characters of the paralysis; (4) the course and termination; and (5) the state of the superficial and deep reflexes. Hysterical hemiplegia like organic hemiplegia might occur at all ages. The subjects of hysterical hemiplegia were individuals, male and female, of neurotic inheritance, and of the so-called hysterical temperament, and who had either been previously liable to hysterical attacks, or exhibited some of the permanent stigmata of hysteria, such as zones of hyperæsthesia or anæsthesia, or complete sensitivo-sensorial hemianæsthesia of the recognised type (Charcot). The subjects of organic hemiplegia were (apart from traumatism or autochthonous intracranial lesions) those predisposed by vascular, renal, or cardiac disease to cerebral hæmorrhage, embolism, or thrombosis, of the existence of which it was generally possible to obtain evidence by careful clinical investigation. Hysterical hemiplegia occurred most commonly after some great nervous disturbance, such as emotional shock, or after an epileptiform or apoplectiform attack (so-called hysterical apoplexy), simulating cerebral hæmorrhage. In hysterical hemiplegia the upper or lower extremity might be more or less completely powerless and flaccid, but the face was rarely so. Such affection of the face as occurred was usually of the labio-glossal spasmodic type (Charcot) on the same or the opposite side. The leg was usually more affected than the arm, and in walking the paralysed leg was dragged like an inert mass and not circumducted as in organic hemiplegia (Todd's symptom). In the majority of cases hysterical hemiplegia was associated with complete sensitivo-sensorial hemianæsthesia. Hysterical hemiplegia might last an indefinite time and continue of the same flaccid character throughout. In hysterical hemiplegia the deep reflexes were not necessarily altered, and true ankle clonus was rare, whereas in organic hemiplegia the deep reflexes became unavoidably exaggerated and ankle clonus was the rule.

Professor W. ROTH (Moscow) dealt chiefly with the characteristic symptoms of organic hemiplegia, arranging them in the following order. 1. Aphasia in any of its forms might be present and was not difficult to distinguish from hysterical mutism. 2. Conjugate deviation of the eyes was marked by the amplitude of the movements of the eyes towards the paralysed side being diminished and often continuing so for a long time. Sometimes this diminution manifested itself only in voluntary movements, but did not occur in reflex unconscious movements or if the patient followed with his eyes an object which had a lateral motion. 3. Facial paralysis might be "systematic" and might show itself only in imitative movements. Facial paralysis was excessively rare in hysterical hemiplegia; what was generally seen was a pseudo-paralysis, a hypotonus united to a hypertonus, with characteristic little jerking movements of the muscles of the opposite side of the face. 4. The paretic deviation of the tongue and the typical difficulty of articulation were in proportion to the degree of paralysis of the tongue. In hysteria the deviation of the tongue presented itself in a variety of well-known capricious forms (hemispasm, systemic paresia, deviation to the opposite side). 5. The relative intensity of the paralysis of the limbs and of the muscular groups of a limb was usually typical. Certain attitudes and the manner of walking were characteristic. 6. Associated involuntary movements of the paralysed extremities might occur. 7. The

evolution of the paralysis in cases not preceded by a fit usually presented characteristic features. 8. The paralytic symptoms had a tendency to diminish. 9. The contractures were characteristic. 10. The exaggeration of the tendon reflexes and bone reflexes (jerking movements of the patella, hands, and feet) corresponded to the muscular hypertonus. Reflex jerking movement of the foot might, however, show itself exceptionally in hysterical hemiplegia. 11. The superficial reflexes were of less value, with the exception of Babinski's toe phenomenon. 12. Hemianæsthesia was less marked than paralysis, and the degree of anæsthesia was not necessarily the same over the entire half of the body, but there were none of the abrupt and capricious transitions seen in hysteria.

## PSYCHIATRY.

### *Treatment of Insanity by Rest in Bed.*

Dr. CLEMENS NEISSER (Leubus) in his paper on this subject said that this system of treatment would inevitably have the effect of assimilating lunatic asylums to hospitals. Rest in bed was not a specific for mental diseases any more than for febrile diseases; but it was indicated in all cases of acute illness and also in the treatment of persons whose general behaviour was disorderly or excited, and in mania, melancholia, epilepsy, general paralysis, &c. When recovery had reached a certain stage the patient must be allowed to get up, for if kept in bed too long he might perhaps refuse to leave it (*manie du lit*).

Dr. S. KORSAKOV (Moscow) spoke very highly of this method of treatment, but said that it must not be enforced too strictly in the case of patients who were feeble-minded or predisposed to apathy, anæmia, and masturbation.

Dr. JULES MOREL (Mons) said that the treatment of insanity by rest in bed was originated by Dr. Guislain in 1852; it was adopted in Germany in 1854 and in the United States of America in 1878. Dr. Morel devoted a considerable part of his paper to the advantages of having well-trained attendants.

### *Sexual Perversions from a Medico-legal Point of View.*

Professor KRAFFT-EBING read a paper on this subject, at the close of which he said that persons who were proved to be under the influence of obsessions or irresistible impulses could not be held responsible for their actions. In the event of failure to prove that the culprit's impulse was irresistible his culpability ought to be reduced as far as the law would allow on the ground that he was, through no fault of his own, suffering from mental degeneration.

### *The Pathological Anatomy of Idiocy.*

Dr. G. E. SHUTTLEWORTH (Richmond) and Dr. FLETCHER BEACH (London) presented a paper on this subject in which they said that as far back as the time of Hippocrates the physical characteristics of idiocy were noticed. Pliny, too, in his "Historia Naturalis" mentioned the macrocephali, and Talpius ("Observationes Medicæ") had a chapter on hydrocephalus which he had seen associated with idiocy. Willis, in his "Collected Works," in the part dealing with the anatomy of brain (English edition) described and figured the brain of a young man completely imbecile, the size of whose brain was scarcely one-fifth of that of an ordinary man (microcephalus). Pinel ("Traité sur l'Aliénation Mentale") also described and gave illustrations of two cases of microcephalus, and Gall and Spurzheim in their Atlas accompanying their "Anatomie et Physiologie du Système Nerveux en Général et du Cerveau en Particulier" gave plates not only of microcephalic heads and crania, but of hydrocephalic crania, in one case of a cretin and in the other of an imbecile child. The above remarks had reference to the size of the head. As regards the form, bony deformations were noticed by Meckel in "Mémoires de l'Académie de Berlin," published by him in 1760. With respect to conformation, Tulpius ("Observationes Medicæ Rariores") remarked that the convolutions were less numerous, and Malacarne ("Encephalotomia Nuova Universale") stated that the lamellæ of the cerebellum increased or diminished according to the development of the intelligence. As regards the organisation, Meckel (1760) remarked that in idiots there were dryness and hardness of the cerebral substance, and Bonnet and Haller reported tumours and ulcerations in the brain and cerebellum. Finally, Esquirol ("Des Maladies Mentales") noticed that the convolutions were small, atrophied, compact, and thin, and that the lateral ventricles were of small capacity. Apparently the first observers dwelt most on the size and shape of the head as causes of idiocy, the structure of the brain being noticed at a later period. Modern authors were of opinion that pathology and classification were mutually interdependent. According to this view Dr. Shuttleworth and Dr. Beach classified the anatomo-pathology of idiocy under three chief heads—viz., (*a*) congenital formative defects; (*b*) developmental cases; and (*c*) acquired cases. Under the first head they placed (1) microcephalus; (2) hydrocephalus; (3) scaphocephalus; (4) *mongol* imperfections of the osseous, cutaneous, mucous, and in some cases cardiac tissues; (5) neuropathic *genetous* cases, in which the convolutions were coarse and simple, or were small, slender, and curling (microgyry); (6) amaurotic *genetous* cases; (7) sporadic cretinism, due to defective structure or absence of the thyroid gland; and (8) partial local defects, such as defects of the corpus callosum, or porencephalus. Cases illustrating some of the foregoing types had been reported by them and by Marshall, Ireland, Telford-Smith, Spiller, Vogt, Otto, Schrœder van der Kolk, Bruce, d'Astros, Jastrowitz, Hammarberg, Klinke, Sachs, Koplik, and Kingdon assisted by Risien Russell. Under the second head they included (1) eclampsic cases with hæmorrhagic or inflammatory lesions; (2) epileptic cases, the views of Bevan Lewis, Andriezen, Batty Tuke, and Echeverria being given; (3) syphilitic and juvenile general paralysis cases, the opinions of Clouston, Mott, and their own being quoted; and (4) paralytic cases in which there were degenerative changes in the vessels of the brain or in some cases atrophy of the brain. These cases might be due to birth-palsy, to palsy coming on after whooping-cough, or to inflammation. The opinions of Schrœder van der Kolk, Freud, Telford Smith, and of themselves were given. Under the third head were comprised (1) traumatic cases due to pressure on the head during labour owing to abnormal narrowness of the pelvis, prolonged labour, or less often the use of the forceps, and lesions produced by accidents; (2) post febrile inflammatory cases (under this subhead was placed hypertrophic idiocy, a monograph on which subject had been published by one of them); and (3) sclerotic idiocy, a disease first described by Bourneville in 1882. The changes in the brain observed in this disease were noted by Dr. Wilmarth in 25 out of 100 cases, and had been noted frequently by Dr. Beach, who not only described the changes already observed but also hyperæmia, softening, tumours, and disease of the membranes of the brain; asymmetry of hemispheres and convolutions; alteration in relation of grey to white matter of the brain; simplicity of convolutions, thickening of the arteries; thrombosis; disease of the cerebellum and spinal cord; and anomalies of the convex surface and base of the cranium in Tuke's "Dictionary of Psychological Medicine," 1892. The microscopical appearances of idiocy had been observed and noted by one of them, and by Bevan Lewis, Andriezen, Mierzjewski, Hammarberg, and Bourneville.

### *Mental Disturbances of Puberty.*

Professor MARRO (Turin) in his paper on this subject presented his conclusions as follows. 1. Puberty had an important influence on the mental state of the individual and this influence might be manifested either (*a*) by investing previously existing mental disorders with features which up to that time they did not possess or possessed in only a minor degree or (*b*) by creating a tendency to mental derangement. 2. Among the mental disorders from which young persons of both sexes might suffer at the period of puberty the hebephrenia of Hecker was one which might be regarded as specific on account of several symptoms which it shared with other mental disorders being combined in it and in no other form of mental aberration. 3. The symptoms exhibited in this condition and the changes found on post-mortem examination proved that the cerebral cortex and the membranes were the seat of a morbid anatomical process. The initial symptoms tended to show that the condition might with some probability be considered as originating in a process of auto-intoxication due to disorders of the alimentary tract. 4. Puberty and the precocious and abnormal exercise of the generative functions might give rise to other morbid manifestations which permanently influenced the disposition of the individual in a peculiar way, although increasing age and life under favourable conditions might obliterate the evidence of them. 5. For the prophylaxis of mental derangement the greatest attention must be paid to the avoiding of all weakening influences which interfered with the development of the physical and mental

organisations at this important period of life, such as excessive bodily or mental fatigue, and, above all, the precocious and abnormal exercise of the sexual functions.

Dr. JULES VOISIN (of the Salpêtrière, Paris) also read a paper the substance of which was as follows:—1. The term "psychoses de la puberté" denoted mental derangements which were developed during the period of puberty, that is between 14 and 22 years of age. This period was characterised by sexual maturity, and by the physical and mental development of the individual. 2. All the varieties of mental derangement might show themselves at this period. Hebephrenia as a morbid entity did not exist. The term "hebephrenia" ought to be reserved for cases of dementia. Mental disorders developed at the initial stage of puberty were less serious than those developed during the progress of puberty or at the end of it. The former ought to be called mental disturbances of puberty and the latter mental disturbances of adolescence. 3. Hereditary predisposition was the principal cause of these affections; it was the incomplete intellectual development of the individual associated with his hereditary taint that gave to the disease its peculiar character called hebephrenia. ..... 7. Premature dementia (hebephrenia) described by Kahlbaum and Hecker presented itself under two forms, of which one was severe and one was slight. The symptoms of the former were stupor, dementia, catatonia, and mental confusion. This rendered its diagnosis difficult. The slight form or premature simple dementia must be distinguished from progressive general paralysis and spasmodic epileptic dementia. 8. The mental confusion was a "délire de rêve," or dreamy delirium, which had much analogy to alcoholic delirium. This dreamy delirium was the characteristic of mental disturbances of auto-intoxication and it was almost certain that disorders of nutrition during adolescence were the causes of this delirium. Recovery took place in half of the cases; it was generally preceded by *crises*, profuse perspiration, diarrhœa, salivation, menstruation, abscesses, boils, &c. 9. Progressive general paralysis in the young was distinguished from progressive general paralysis in the adult by the absence of grandiose ideas and by its slower course.

Professor ZIEHEN (Jena) read a third paper on the subject in which he said that from a consideration of about 400 cases of mental disease, the first symptoms of which dated from the period of puberty, that is from the age of 13 years to about the age of 21 years, he had arrived at the following conclusions. 1. Mental morbidity attained one of its maxima at the age of puberty, and the tendency thereto was increased by hereditary taint. Apart from heredity it was principally anæmia, bodily and mental overwork, acute infectious diseases and sexual excesses which played an important part in the causation of the mental disturbances of puberty. 2. Almost all the known mental disturbances were met with at the time of puberty. The special influence of puberty showed itself only in the greater prevalence of certain mental disorders and in the symptoms and course of mental derangement being often (but not always) modified in a certain manner. It was a mistake to speak, as some authors had done, of a special mental disorder of puberty which would include the majority of the cases of mental disease occurring at that period. The only mental disorder which belonged almost exclusively to puberty, the dementia hebephrenica or hebephrenia of Kahlbaum, occurred in only a relatively small number of cases. 3. Apart from hebephrenia the most common mental disorders of puberty were *folie circulaire*. mania, melancholia, acute paranoia, wild hallucinations (amentia of some authors), and hysterical and epileptic mania. ..... 5. The prognosis of the insanity of puberty was in general worse than that of insanity occurring after puberty. 6. The treatment of the insanity of puberty did not in general differ from that of insanity occurring subsequently to puberty. Complete confinement to bed was, however, admissible only for cases where there was much exhaustion. Regular occupation, bodily and mental, for each hour of the day was of the utmost importance. Narcotics should be avoided as much as possible. Great caution was necessary in keeping such patients in association with adult lunatics.

Dr. RÉGIS (Bordeaux) remarked on the important part played by auto-intoxication in the causation of the insanity of puberty.

Dr. MABILLE (La Rochelle) said that he had observed various forms of mental disorder at the age of puberty but was not satisfied that there really was an insanity of puberty possessing special clinical features.

Dr. TOKARSKI (Moscow) said he thought that the previous speakers had not paid sufficient attention to certain psychical signs of hebephrenia, such as theatrical attitudes, pathetic demonstrations, &c.

Dr. TRENEL (Rouen) remarked on the difficulty of diagnosing premature dementia.

Dr. BENEDICKT (Vienna) mentioned the importance of sexual abuses (platonic or actual) in the production of the insanity of puberty.

Dr. GILBERT BALLET (Paris) made a distinction between (1) mental disturbances occurring during puberty and (2) the mental disturbances of puberty. The former were of ordinary occurrence: the others seemed to have clinical features approaching those which had been described by Kahlbaum. He preferred the term *folie d'adolescence* to the term *folie pubérale*.

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## DERMATOLOGY AND SYPHILOGRAPHY.

### *The Parasitic Origin of Eczema.*

Dr. P. G. UNNA (Hamburg) commenced his contribution to this subject by pointing out that the doubt which existed as to the organisms which gave rise to eczema was in part due to the absence of a classification of micrococci. Up to the present time the micrococci had been classified unscientifically, so that species were confused which had very different pathological actions. He considered that one method of arriving at a better classification of micrococci would be to study more exactly special methods of staining. In order to prove that an eczema was due to a micro-organism it was above all necessary to prove that the dermatological lesions produced by the inoculation of the supposed microbe were identical with those of a true eczema. Among the many micro-organisms which were found to be present in an eczema there were many which on inoculation gave rise to an eczema. The first thing to do was to distinguish the different varieties of eczema which were due to the action of different microbes. Dr. Unna stated, in conclusion, that it was certain that eczema was a contagious disease and under certain circumstances epidemic.

Professor JADASSOHN (Berne) first defined the terms "parasitic" and "eczema." He then detailed the results of some researches on the subject under discussion undertaken by Dr. Frédéric of Berne. In most eczemas no micro-organisms could be found, or at all events not such as could be considered pathogenic. As in many other skin affections common micro-organisms invaded the inflamed area and might give rise to more or less important secondary changes.

Dr. JAMES GALLOWAY (London) said that the present wide use of the term "eczema" rendered it necessary to define the condition dealt with. His own investigations had been limited to "acute papulo-vesicular eczema." He had taken four cases and these had been submitted to careful bacteriological examination, the earliest lesions being chosen so as to avoid contaminating influences as far as possible. From all four cases a white coccus was isolated, though in one of the cases some moulds were found, and in another staphylococcus aureus. The white cocci which occurred in the four tubes seemed to show some slight differences, especially with regard to the power of liquefying gelatin and to the tendency to grow in masses or in smaller groups, but they were all examples of what would be readily recognised in the laboratory as the staphylococcus pyogenes albus. After many cultures the cocci still were pathogenic to mice, but the degree of virulence was not great. The conclusions at which he had arrived were the following:—1. That cocci producing white cultures were present in early and uncomplicated lesions of papulo-vesicular eczema, but that these cocci, though varying in minute particulars in different strains, were not sufficiently differentiated to distinguish them from the staphylococcus pyogenes albus. The morococcus described by Dr. Unna fell into this category. The descriptions given by him were not sufficient to distinguish it as a separate species. There was still less evidence to consider this organism as the specific organism causing eczema. In later stages of eczema other organisms made their appearance so that the coccus yielding white cultures might even be crowded out of existence. The most important of these organisms was no doubt the staphylococcus pyogenes aureus. 2. It appeared that in the production of eczema more than one factor was at work, though the presence of such organisms as those mentioned, which were well known to have pyogenic powers, must be an important

factor in every case. These organisms did not grow in such enormous numbers on injured surfaces without producing some result and from the knowledge of their effects in other situations the result must be noxious. The local infectivity and chronicity of eczema were probably mainly due to the presence of the organisms mentioned. 3. Other factors, however, were probably concerned in the production of any attack of eczema and of these two appeared to be of much importance: (*a*) the predisposition of the skin usually associated with the seborrhœic state, to the free growth of many varieties of vegetable parasites (this was probably the most effective of all the conditions of susceptibility or of lowered resistance in the causation of eczema); and (*b*) the clinical evidence seemed to be conclusive that certain conditions of imperfect metabolism predisposed to the onset of eczema, or at any rate to its occurrence, and of these the most common were those associated with improper digestion and assimilation of food.

Dr. L. BROCQ (Paris) and Dr. VEILLON (Paris) communicated a paper of which the first part contained a discussion as to what conditions should be included under the word "eczema." They excluded many forms, such as seborrhœic eczema and the dermatoses resulting from traumatism, and limited the term "eczema" to a condition commencing by the formation of vesicles, which might be well-marked or ill-developed, with a special evolution. The authors of the paper then gave a historical account of the question up to the present time and proceeded to describe their own researches, the results of which were as follows. Recent unopened eczematous vesicles contained no microbe which could be detected by microscopic examination or by cultures, but old broken vesicles contained many micro-organisms, especially staphylococcus aureus, though a streptococcus and a staphylococcus albus were also found. If a layer of sterilised oxide of zinc were placed on a disinfected patch of eczema although the vesicles continued to develop they were free from germs. If a culture of the staphylococci from an eczematous patch were inoculated on to another part of the body of a patient suffering from eczema they did not give rise to an eczema. Their final conclusions might be stated as follows. 1. In the present state of knowledge they could not admit the existence of a specific microbe in eczema, although it might be allowed that a micro-organism might exist which could not be detected by microscopical examination or by cultures. 2. The typical primary lesion of eczema—the vesicle—did not contain any microbe which could be found by bacteriological methods. 3. The different microbes (especially the staphylococcus) which grew in abundance on the weeping or scabbed surfaces in eczema constituted secondary infections which were the cause for the most part of the complications and suppurations which so frequently supervened on true eczema.

### *Tuberculides.*

The discussion on this subject was opened by Dr. C. BOECK (Christiania) who pointed out the reason for classing together these diseases. It was recognised that there was a series of cutaneous affections which were generally very symmetrical, and which were found so often in tuberculous patients that it must be concluded that there was some causal connexion between these diseases and tuberculosis. Koch's bacillus was never, or very rarely, found, and inoculations of a guinea-pig never, or quite exceptionally, gave rise to positive results. The theory which had been formed to explain these facts was that these lesions were produced by the toxins of the tubercle bacillus which formed them in the lymphatic glands and in the viscera. The facts accorded very accurately with this theory. True tuberculosis of the skin was asymmetrical, but the tuberculides were strikingly symmetrical, and appeared to be the result of the action of the toxins on the vaso-motor centres. Symmetry was the most important characteristic of a tuberculide; the exact character of the lesions was a point of much less importance.

Professor ROBERTO CAMPANA (Rome) pointed out that the skin was very sensitive to the action of the toxins of tuberculosis, but the skin had a great resisting power to the tubercle bacillus, and this was the result not of its structure but it was due to the fact that the skin contained very little oxygen, so that the bacillus was obliged to live an almost anaerobic life, which was very inimical to its vitality. The proof of this hypothesis was to be found in the great rarity of the bacillus in primary tuberculosis of the skin. He did not think that it was possible to distinguish clinically between skin lesions produced by the toxins and those produced by the bacillus itself; though he admitted that a general intoxication with tuberculous products might well be the predisposing cause of certain cutaneous manifestations of external origin which might simulate true tuberculous manifestations.

Dr. J. DARIER (Paris) said that there existed a group of skin lesions to which the name of "tuberculides" had been applied and which possessed the following characteristics: first, that they were clinically connected with tuberculosis, for they were only seen in patients already infected by Koch's bacillus or reasonably suspected to be infected; and secondly, in the immense majority of cases the local lesions of the tuberculides did not seem to contain the tubercle bacillus—in fact, with hardly an exception bacteriological examination and experiment had not succeeded in proving the presence of this bacillus. Dr. Darier proceeded to enumerate the diseases which might be considered to be tuberculides. He then described the forms in which the tuberculosis bacillus might be present, showing that a very careful search was sometimes needed to prove the presence of the disease. The clinical characters of the tuberculides were so very various that it was difficult to give a general description of them, but it might be said that they usually appeared suddenly without fever; that they were often symmetrical; that all parts of the body might be attacked; that the lesions were generally of a reddish purple or livid tinge; that they were painless but tender to the touch; and that they might undergo various forms of evolution. He gave three hypotheses to explain these diseases: (1) that they were due to unknown microbes, which required for their development a soil impregnated with the products of Koch's bacillus; (2) that they were due to the toxins of the tubercle bacillus; and (3) that they were the results of multiple embolisms of attenuated tubercle bacilli. Dr. Darier was rather inclined towards the last of these three theories.

### *Alopecia Areata.*

Professor O. LASSAR (Berlin) opened a discussion on this subject and expressed the opinion that in alopecia areata there was no such thing as predisposition or special power of resistance in certain persons; neither could immunity from the disease be acquired. The nervous theory of origin had lost ground more and more. Even the isolated facts met with in dermatological literature which seemed to afford some support to this theory had little force. The localisation had no reference to nervous tracts; it might be unilateral, bilateral, or general. The parasitic theory was the most consistent of all those which had been brought forward to explain the disease. The theory of contagion agreed well with the appearance of the disease in families, in schools, and in barracks, and with the formation of groups of the disease in connexion with shaving and hair-cutting. Also the way in which it spread in each patient was like that in which diseases due to a microbe spread. However, the organism itself had never yet been found. The treatment of the disease was practically only empirical.

Professor PAVLOV (St. Petersburg) said that alopecia areata was probably more common in Russia than was usually thought to be the case. He himself had seen about 150 cases in 10 years. There had been nothing in the history of the cases which he had seen to suggest contagion as the cause, and he had never seen it spread epidemically, although he did not take any precautions to prevent it. He was convinced from his clinical observations that the disease was connected with various troubles of the nervous system, and the truth of this was impressed upon him by the manner in which the disease progressed and by the results of his treatment. Alopecia areata always developed in persons whose nervous system was specially irritable, and it followed generally on mental disturbances, grief, worry, or injuries, and sometimes it seemed to be due to reflex irritation from a distant organ. The affected hairs, on microscopical examination, showed merely atrophy. Some bacteriological cultures of the affected hairs gave two negative results out of 10 cases, and in the remaining eight pure cultures of cocci were found resembling the staphylococcus pyogenes aureus and albus. The inoculation of these cultures in rabbits led to the formation of a patchy baldness with redness and scales.

Dr. NORMAN WALKER (Edinburgh) was of opinion that, although the nervous origin of alopecia areata must be given up in most cases, there were a few which were due to nerve influence. In these the patches were very irregular in

shape, the skin was smooth and glossy, and there were very rarely any "exclamation point" hairs. As to the infective theory, Dr. Walker had met with about four cases in which a possible source of infection existed. In all his cases, by cultures he obtained Sabouraud's "porcelain" growth, and in only two cases did the "brick-red" growth follow; in all, after from two to four weeks a deep brownish-black colour developed.

Dr. SABOURAUD (Paris) in the first place put aside various forms of baldness to which the term "alopecia areata" should not be applied. He considered that of those to which this term was rightly given there were at least two different clinical types. The first was the alopecia areata of Celsus (area Celsi), which was most common in childhood. It began in the occipital region, spread circumferentially through the scalp, and disappeared at puberty. Hereditary influence was definite, and contagion was infinitely rare if it ever existed. The second form (Bateman's) occurred in middle age, the initial patch being followed by secondary patches at a distance. All the patches were circular and the surface was infected with seborrhœic bacteria. In these contagion was still rare, but it was possible and certain. He laid great stress on the differentiation of these two forms, though he acknowledged that in practice it was impossible sometimes to decide into which group to put a certain case.

Dr. LÉON PERRIN (Marseilles) read a paper on Leucoplakia, pointing out how many different conditions were included under the name and showing that they were all produced by the reaction of the epithelium against a mechanical irritant.

*Syphilis and Associated Infections.*

This subject was introduced by Dr. L. DUNCAN BULKELEY (New York), who classified the conditions as follows. First into cases of double coincident infection. These were again divided into cases of syphilis with a local lesion and cases of syphilis with a general disease. The other cases where syphilis was associated with some other disease were those in which the two infections were not coincident, and these were divisible into those in which the syphilis appeared before the associated diseases and those in which the syphilis appeared after the diseases with which it might be associated. The points to be considered were how far the associated diseases might retard, accelerate, or modify the normal course of one another.

Professor A. DUCREY (Pisa) said that the subject had practically no limits. He thought that it would be useful to consider first, the association with syphilis of local diseases such as a soft sore, which never gave rise to general manifestations; secondly, the association with syphilis of diseases such as gonorrhœa, which were usually local but which sometimes became generalised; and, thirdly, the association with syphilis of true general infections such as the infectious fevers and leprosy. With regard to the soft sore and other local septic conditions, the association with syphilitic manifestations seemed to increase the gravity of the specific lesions, suppuration and gangrene being more likely to occur. In the case of the hyphomycetic fungi such as the ringworm fungi Dr. Ducrey was inclined to think that the trichophyton found a syphilitic soil favourable for its growth. Gonorrhœa in men did not seem to affect or to be affected by a coincident syphilis, except that the complications affecting the epididymis and testis appeared to predispose to syphilitic disease of the same organs. In women a gonorrhœal vulvo-vaginitis seemed to hasten the appearance of, and to render more severe, local syphilitic lesions. Little was known about the mutual action of syphilis and the eruptive fevers. When syphilitic children had measles and scarlet fever the mortality was heavy, but this was chiefly due not so much to the syphilis itself as to their condition of general weakness, especially as most of them were hand-fed. Typhoid fever seemed to weaken or even to destroy syphilis, at least so far as external manifestations went; but cases of syphilis did occur which seemed to be unaffected by the typhoid fever. Erysipelas, especially when severe and long continued, hastened the resolution of syphilides and sometimes seemed to put an end to the disease. Puerperal septicæmia was more common and more severe in syphilitics, but if the woman recovered from the septicæmia the syphilis seemed to be diminished. Syphilis and tubercle appeared generally to have a harmful effect upon each other so that the manifestations of each were more severe and more acute than when either disease occurred apart. When malaria was associated with syphilis the latter was markedly more severe; this was probably due to the great general depression caused by the malaria. Syphilis and leprosy could co-exist without any apparent modification of either.

Dr. H. HALLOPEAU (Paris) limited the term "associated diseases" to those which modified or were modified by syphilis. Often infectious diseases progressed in a syphilitic subject without influencing the syphilitic manifestations or being influenced by them. The general conclusions at which Dr. Hallopeau arrived were as follows. That certain infections by associating with the syphilitic poison could give rise to various hybrid forms; these were the bacillus of the soft sore, the agent which gave rise to epithelioma, and rarely the bacillus of tubercle. It was possible, but it had not yet been proved, that the mixed infection of syphilis and pyogenic organisms gave rise to suppurating syphilides which might be called streptosyphilides or staphylosyphilides. The organisms and their toxins could modify the characters of syphilitic eruptions and caused "parasyphilitic" affections, giving rise to severe complications. The activity of the syphilitic poison might be modified temporarily or permanently by the co-existence of certain generalised infections; this was especially true of erysipelas.

*The Descendants of Congenital Syphilitics.*

Professor B. TARNOWSKY (St. Petersburg) presented a table based on data furnished by 25 syphilitic families with their descendants to the fourth generation. He arrived at the following conclusions:—1. The hereditary influence of acquired syphilis showed itself in its greatest severity in the second generation of syphilitics, and caused a large number of miscarriages and stillbirths, of early deaths, and of children showing signs of congenital syphilis or with various forms of malnutrition. 2. The influence of syphilitic heredity decreased markedly in the third generation, causing many but fewer miscarriages, stillbirths, and other manifestations of congenital syphilis. 3. Syphilis acquired in the first generation was not transmitted to the third generation in the form of manifestations recognised as due to congenital syphilis. In the same way the immunity against the syphilitic virus was not transmitted to the third generation. 4. Parents, the father or the mother, with the symptoms of congenital syphilis, either at the time of conception or in the course of pregnancy, did not transmit to their children hereditary syphilis. 5. Syphilis never seemed to pass over a generation—i.e., it was never transmitted from the grandparent to the grandchild, while the children remained free from syphilitic signs. 6. A second generation of syphilitics showing no manifestations of congenital syphilis produced generally healthy offspring. 7. Hereditary syphilis of the third generation was generally due to a fresh syphilitic infection contracted by a member of the second generation. 8. "Binary syphilis"—i.e., syphilis acquired by a member of a second generation of syphilitics—exerted on the third generation a much more harmful influence than the syphilis of the first generation exerted on the second. 9. One of the chief reasons for the rapid degeneration seen where syphilis was endemic was certainly "binary syphilis." 10. The harmful influence of acquired syphilis seemed to cease completely after the fourth generation.

Professor E. FINGER (Vienna) held that in order to prove the transmission of syphilis to the grandchildren of syphilitics, it would be necessary to exclude completely the possibility of syphilis having been acquired by the second generation, and there should be absolute certainty of the presence of congenital syphilis in the third generation. Most of the 24 cases which had been described of this transmission of syphilis could not furnish the proofs required. The second question that had to be considered was the possibility of the transmission to the grandchildren of various dystrophies. This question was even more difficult to answer than the first, for many of these dystrophies occurred in families which were not syphilitic; and, moreover, if these dystrophies were really syphilitic in origin, they ought to be seen especially in cases of hereditary syphilis, but only a few of the cases of congenital syphilis manifested them. On the whole the action of syphilis on the descendants had less tendency to cause the degeneration of the race than to limit the number of descendants. A third point that arose was the question of the immunity of the descendants of syphilitics. There were several reasons for thinking that the descendants of syphilitics possessed some degree of immunity. Among them might be mentioned the fact that when syphilis became endemic it tended to become less severe; that when syphilis attacked a people hitherto free

from the disease it was usually in a severe form. But these facts and a few others which pointed in the same direction were not sufficient to prove any hereditary transmission of immunity. There were many other facts which showed that the immunity against syphilis, even in those who had acquired the disease, was much less great than was usually thought to be the case.

Dr. JULLIEN (Paris) had succeeded in collecting 92 cases in which syphilis had been transmitted to the grandchildren of those who had become infected with syphilis, and the following conclusions had been arrived at:—1. The syphilis had been transmitted to the third generation in 58 cases by the mothers who had had congenital syphilis and in 34 cases by the fathers. There was no loss of fertility, for in some of the families were seven, eight, eleven, and 15 children. 2. Abortions occurred in 33 per cent. of the cases, but this tendency to abortion was wonderfully amenable to specific treatment. 3. The syphilitic manifestations which were observed in these cases of the third generation affected the skin in various ways, the bones (as by caries), the viscera, and especially the brain, and the eyes (as by iritis). 4. There was much general debility in these cases and many of the patients died at an early age, and if they grew up they were liable to various nervous symptoms, such as convulsions and paralysis. They were also prone to have rickety affections of the bones, atrophic rhinitis, adenoids, and pulmonary tuberculosis. 5. The children of those who had suffered from congenital syphilis were rarely of normal build; they were small and thin, and the various parts of the body were not symmetrical. The skull was badly shaped, the palate was arched, and the teeth were badly formed and readily became carious. The mental functions were generally abnormal. 6. Anomalies and malformations abounded in these cases. In 261 of these children there were four cases of nævus, one of hæmophilia, one with congenital cysts of the neck, one cryptorchid, one with harelip, one with congenital amputation, one with polydactylism, and one with malformation of the iris. Dr. Jullien was inclined to attribute these signs and symptoms occurring in the third generation to the absorption by the fœtus of toxins through the placenta.

*The Causes of the Generalised Infections in Gonorrhœa.*

Professor LESSER (Berlin), who opened this discussion, considered that generalisation of the infection in a case of gonorrhœa occurred especially if there were complications. In the male in most of the cases of generalisation the posterior portion of the urethra was affected. There seemed to be a special predisposition to the production of a generalised infection, for some patients had a general infection every time that they had a fresh attack of gonorrhœa.

Professor P. TOMMASOLI (Palermo) said that the organism which gave rise to general infection in gonorrhœa might be the gonococcus itself or there might be a mixed infection, the gonococcus having, perhaps, prepared the way for the entrance of the other micro-organisms by lowering the general power of resistance. It was possible, though it was not necessary, that the microbes themselves should be present in the lesions of the generalised disease, for the toxins were probably capable of producing all the inflammations met with. There was, however, another point which had to be decided, and that was what special conditions were necessary, or at least favourable, for the microbes or their toxins to become capable of causing a general infection. Anything which weakened the general condition would predispose to generalisation of the disease; so, over-exertion, want of food, and alcoholism would all be favourable to general infection. Moreover, since the gonococcus preferred a slightly acid soil, it was probable that in acute rheumatism, in which there was an increase in the amount of acid, the soil would be more favourable for the growth of the organism.

Mr. A. H. WARD (London) maintained that in all cases of gonorrhœa there was some absorption of toxins where they caused systemic degenerations of varying degrees of severity. The gonococcus itself might spread by continuity of tissue or might pass into the blood-stream, and this was rendered more easy by the action of the absorbed toxins on the leucocytes, preventing phagocytosis. The microbes in the circulation tended to become stranded in minute capillaries, where they developed and formed more toxin and gave rise to local inflammations. The invasion of the organism was favoured by all over-energetic treatment of the local infection, for this depressed the local power of resistance. Local treatment was always required, and should be free from instrumental, mechanical, or chemical violence.

Dr. F. BALZER (Paris) remarked that the chief tract by which the gonococcus infected the organism was the blood-vessels; and the gonococcus had been seen in the vessel walls and its presence in the blood itself had many times been proved. The toxin of the gonococcus (gonotoxin) was capable of producing many of the generalised effects of gonorrhœa. Other microbes might co-exist in the system with the gonococcus; staphylococci and streptococci, bacillus coli, the pneumococcus, the tubercle bacillus, and various other forms had been found. The more extensive the local disease the more was the generalisation of gonorrhœa rendered probable. The increase of the virulence of the gonococcus was sometimes much increased, especially during physiological processes such as menstruation, pregnancy, and parturition. The explanation of the manifestations of gonorrhœal generalisation was to be found chiefly in previously damaged tissues, for these were more liable to be attacked than healthy tissues. Thus, an old endocarditis favoured the localisation of the gonococcus in the endocardium. It was possible that some forms of arthritis were produced not by the gonococcus but by the toxins, and that others might be produced not by their direct action on the joint but by a trophic action through the nervous system. A nephritis might occur, and also various cutaneous manifestations.

## III.—SURGERY.

### RHINOLOGY AND LARYNGOLOGY.

*Diagnosis of Laryngeal Cancer.*

Professor R. FRAENKEL (Berlin) read a paper upon the Diagnosis of Cancer of the Larynx from an Anatomical and Pathological Point of View. He said that the microscopical examination of fragments of tissue taken from a tumour in the larynx was of the first importance as a means of diagnosing cancer. If the result of the examination was negative no certain conclusion could be drawn; on the other hand, if a positive result was obtained a diagnosis could be made with certainty. Difficulty arose from the fact that only very small pieces could be obtained. They should be hardened and embedded for cutting in paraffin and should be stained by Van Gieson's method or by picrocarmin. For a diagnosis it was not sufficient to find globular masses of epithelium, although this was very suspicious, but epithelial buds should be found in places where they should not normally exist. If epithelial processes were found continuous with the surface epithelium the diagnosis was still in doubt, for many other disease processes gave rise to similar outgrowths of epithelium, notably syphilis. Irregular structure of epithelium was a characteristic of cancer.

Dr. MORITZ SCHMIDT (Frankfort) followed with a paper on the same subject. He said that the symptoms of cancer of the larynx, such as pain, stenosis, and offensive odour, were not characteristic but were found in other laryngeal diseases. Cancer of the larynx, however, showed from its very commencement and throughout its course the characteristics of a tumour. Cancer arising in the deeper tissues of the larynx sometimes gave rise to a proliferation of true papillomas on the mucous surface. This form of cancer throughout its whole course had a very close resemblance to a perichondritis. Cases of cancer of the ventricle of Morgagni gave a laryngoscopic image almost exactly like that of an internal perichondritis. In very rare instances the cancer commenced at the back of, and almost underneath, the cricoid cartilage. In such a case nothing could be noticed at the beginning of the disease but paralysis of the recurrent laryngeal nerve. In order to exclude syphilis from the diagnosis it was generally sufficient to give during 15 days a daily dose of three grammes of iodide of potassium. It was possible to arrive at a definite diagnosis by examining microscopically a small piece of the growth. A curette forceps with the blades working up and down was the best instrument to use for this little operation. Only a positive result of the microscopic examination was conclusive.

Sir FELIX SEMON (London) regretted that the speakers had confined themselves to discussing the microscopic diagnosis and recommended a study of the clinical points.

Dr. MERMOD (Yverdon) followed in the same sense.

Dr. KRAUS (Paris) went so far as to say that he thought it wrong to attach much importance to the results of the microscopic examination of cancer of the larynx inasmuch as

such an examination gave no clue to the clinical type of the growth.

Dr. RUAULT (Paris) and Dr. LOUIS BAR (Nice) agreed with the last speaker, Dr. Bar pointing out that tuberculous and malignant disease of the larynx could exist in the same subject. But Professor FRAENKEL considered a microscopic examination the best basis on which to decide upon operation. He said that immobility of the vocal cords was a very rare sign in cancer.

*Purulent Ethmoiditis.*

Dr. HAJEK (Vienna) read a paper upon Purulent Ethmoiditis, which he defined as a disease of the ethmoid bone and the mucous membrane covering it, accompanied by a flow of pus. But when other affections were present, such as tubercle, syphilis trauma, or new growth, the disease was not called by this name. He divided it according as to whether the mucous membrane or the bone was affected. In the first category came acute catarrhal inflammations, chronic catarrhal inflammations, and an inveterate form of the last-mentioned which was characterised by a considerable growth of polypi. The bony form was divided into slight degrees of inflammation leading to rarefying osteitis and intenser forms which lead to necrosis.

Dr. BOSWORTH (New York) followed with a few remarks upon the treatment. He said that in purulent ethmoiditis the essential condition was one of imprisoned pus. Each of the trabeculæ involved constituted, as it were, a small abscess. There was but little tendency to a spontaneous cure. The prominent and practically the only indication was to open each and every cell and to release the imprisoned pus accumulation. If this be true the important consideration was as to the best method of accomplishing this end. They might use the gouge, forceps, snare, curette, scissors, burr, spoon, or other devices. In his own experience the end was best accomplished by first uncapping the ethmoid cells by the use of the wire snare écraseur and then breaking down the trabecular walls by means of the burr.

Dr. LUC (Paris) pointed out that the frequency of purulent ethmoiditis was not appreciated, while it was very rarely a solitary condition, being usually associated with similar inflammation of the frontal and maxillary sinuses. Where ethmoiditis was accompanied by inflammation of the frontal sinuses he opened the frontal sinus.

Dr. MOMET (Montpellier) thought that in early stages ethmoiditis could exist alone, but later a condition which he called "panethmoiditie" was reached when opening, curetting, and drainage were required.

*Thyrotomy.*

Sir FELIX SEMON (London) read a paper upon the Indications of Thyrotomy, which was published in full in THE LANCET of August 11th, p. 393.

Dr. SCHMIEGELOW (Copenhagen) read the following paper upon the Technique of Thyrotomy. He said that thyrotomy was an operation which must be preceded by tracheotomy and performed under profound narcosis. The tracheal cannula must be made so as to prevent the aspiration of blood during the operation. Hahn's tampon cannula was the best. After the larynx had been opened by an incision of the thyroid cartilage the pharynx must be plugged with a sponge to prevent saliva trickling into the larynx. The sensibility of the mucous membrane of the larynx could be dulled by the application of cocaine. The operation being concluded and all hæmorrhage arrested the tracheal tube was taken out and the interior of the larynx dusted with iodoform. The wound was lightly covered with lint and iodoform gauze, which were frequently changed during the first few days. The patient should lie with the head as horizontal as possible and at the end of five or six days the wound would have closed sufficiently to enable him to raise it.

Dr. GORIS (Brussels) read a paper upon the Immediate and Remote Effect of Thyrotomy. He said that with the object of getting as many results as possible he sent a message to various specialists asking them to tell him the age and the sex of their patients, the exact seat of the disease, the general condition of the patient at the time of operation, the method employed, and the results both immediate and remote. He received 105 answers which were divided up as follows: 62 operations were for malignant tumours of the larynx, 14 were for tuberculosis, 25 were for innocent tumours, two were for stenosis, one was for a foreign body, and one was for rhinoscleroma. Out of these 105 operations four proved fatal from pneumonia within eight days after the operation. Thus thyrotomy came within the category of operations which were fairly safe inasmuch as it gave a death-rate of 4 per cent.

*Thyrotomy for malignant tumour.*—Sex.—Malignant tumours affect almost exclusively the male sex. In his statistics out of 62 cases 55 occurred in males, three in females, and in four cases the sex was not stated. Age.—From this point of view the cases could be divided as follows: under 30 years, 0; between 30 and 40 years, 4; from 40 to 50 years, 14; from 50 to 60 years, 20; from 60 to 70 years, 18; from 70 to 75 years, 4; and age not given, 2. Effects upon the voice.—As a rule the removal of one vocal cord allowed the patient to make a certain noise afterwards. In some cases the voice remained good after the extirpation of one cord owing to the formation of a cicatricial band. Remote results.—Out of 62 cases he should say nothing of seven because in these the whole larynx was removed. He should also say nothing about six other cases which had occurred at too recent a date to be able to draw any statistics from them. There remained, therefore, 49 cases, giving the following results: still alive at the end of 10 years, one; at the end of from five to eight years, eight; and at the end of from three to five years, 14. That was to say, 23 cases in all, or a percentage of 46·9. There were also seven cases which lived on without any relapse, and so might be considered as cured.

*Thyrotomy for tuberculosis.*—The results of this operation were much less brilliant. Out of 14 cases only three could be considered as cured. In all the others the operation apparently increased the spread of the disease.

*Thyrotomy for innocent tumours.*—As regards the effect on the voice the results were variable, but on the whole they were good. The most frequent affection for which the operation was performed was diffuse papilloma. Out of two cases of stenosis one was cured, but in the other respiration was not improved. Finally, in a case of extensive rhinoscleroma Chiari obtained a perfect cure by excision of the swelling.

*Spasmodic Rhinitis.*

Dr. JACOBSON (St. Petersburg) read a paper upon Spasmodic Rhinitis. He said that this affection presented itself under many different forms which had not yet been sufficiently studied or differentiated. Hay fever was one of these forms which it was necessary to mark out with great precision. Hay fever should be considered only as one special form of spasmodic rhinitis, and those forms brought on by other causes should not be considered as hay fever. One form of spasmodic rhinitis was due to paralysis of the vaso-motor nerves. Other forms were caused by different kinds of intoxication. They attacked persons who were otherwise perfectly well and had no tendency to recur.

*Vocal Nodules.*

Professor CHIARI (Vienna) read a paper upon Vocal Nodules. He gave a description of them from the anatomical point of view, saying that they were generally situated on the free edge of the lower vocal cord. They were more often found in the anterior third and they were almost invariably symmetrical. They never ulcerated and sometimes they would spontaneously disappear. They were probably produced by acute or chronic catarrh of the larynx by over-use of the voice and sometimes by a faulty method of singing.

Professor KRAUSE (Berlin) followed with some remarks on the same subject. He said that these vocal nodules were generally due to a faulty method of production of the voice during singing but not during speaking. The trouble which these nodules give rise to consisted in an alteration of the singing voice at certain parts of the scale. In addition to this the voice got very rapidly tired while the patient was singing. The treatment he proposed was to give complete vocal rest and absolutely to forbid singing. If this treatment did not do good, and supposing that the interests of the patient imperatively demanded that he should get his voice back, the nodules might be removed by a surgical operation strictly limited to the affected parts.

Dr. CAPART (Brussels) followed with a paper on the treatment of vocal nodules. He divided the methods of treatment employed into hygienic treatment by drugs and treatment by operation. Many observers, he said, had argued that nothing was necessary to bring about a cure but complete vocal rest. They could not, however, trust altogether to this. Rest only improved the condition which was the cause of the formation of these nodules but had no effect on

the nodules themselves. Treatment by drugs was inefficacious or even dangerous and operative treatment should be always employed. The nodules should be removed either by a very fine pair of forceps or else by the galvano-cautery, but if the nodule was big enough to be caught by the forceps this method should be employed. After-treatment consisted in absolute vocal rest; no singing should be allowed for a month at the very least and the method of voice production must be altered.

*Anosmia.*

Professor ONODI (Budapest) read a paper upon Anosmia. He began by giving a very full account of the connexions of the nerves of the nose with the olfactory tract in the brain. He then continued: "We are now in a position to study the pathology and classify the various clinical forms of anosmia. I shall divide them into three classes: (1) essential anosmia, wherein the olfactory tract is attacked, whether at its centre or at its periphery; (2) mechanical or respiratory anosmia; and (3) functional anosmia. The first class may be due to various causes, such as inflammation of the olfactory tract leading to neuritis or atrophy of the olfactory nerves. Such diseases as influenza, syphilis, and chronic ethmoiditis are all able to bring about pathological modifications of the peripheral olfactory region. With regard to anosmia due to some central cause it may be brought about by any cause affecting the central nervous system, such as cerebral tumours, embolism, progressive paralysis, senile atrophy, and any other lesion directly affecting the olfactory tract. Sometimes, too, anosmia is due to various intoxications, such as those produced by tobacco, cocaine, mercury, lead, morphia, irritating gases, and many other substances. Mechanical or respiratory anosmia may arise from any cause which produces obstruction to nasal respiration, such as congenital narrowness of the nostrils, deviations of the septum, inflammatory swelling, tumours in the nasal fossæ, and foreign bodies. As regards functional anosmia, it is usually due to hysteria, but it may also be due to reflex influences, as, for instance, ovariotomy and menstruation. These few remarks show us that there are innumerable causes of anosmia, that we know very little about them, and that it is necessary to make a large number of accurate clinical observations so as to supply what is lacking."

OTOLOGY.

*On Measuring the Power of Hearing.*

Dr. F. SCHIFFERS (Liège) read a paper on this subject in which he expressed the following conclusions. That the watch and all similar indefinite instruments could not serve for an exact method of notation. All watches had not the same intensity of sound. The tuning fork was the best means of measuring the hearing power of a person under examination. The method consisted in employing the tuning fork to note how long the sound was heard on the affected side and on the unaffected side, and the result might be expressed as a fraction, of which the denominator represented the time of perception of the healthy ear, and the numerator that of the ear examined. For example, R . A . $Do_2$ . 256 . $\frac{9}{24}$ . would mean that on the right side, the sound being conducted by the air, the tuning fork, with 256 vibrations to the second, could be heard for nine seconds, while it lasted for 24 seconds on the healthy left side. The examination by articulate language was necessary especially in children. The whispering voice was the best to employ and individual consonants and vowels should be used, excluding the sibilants.

Dr. ARTHUR HARTMANN (Berlin) read a paper on the same subject. The tests of hearing were intended to make the diagnosis more exact and to determine the degree of hearing power in order that the effects of treatment might be seen. It was necessary to determine the capacity of perception through the air and through the bones. The tuning fork was the only instrument to be employed, and the duration of perception of its sound should be recorded. The result of the test might be recorded as follows: $C^2$.512.$\frac{18}{48}$.A.—that is to say, the tuning fork which vibrated 512 times a second was heard by the healthy ear for 48 seconds and by the affected ear for 18 seconds, the sound being conveyed by the air. For the voice, which should be whispered, the words used and the distance at which they were repeated should be recorded.

*Auditory Exercises for Deaf-mutes.*

Professor URBANTSCHITSCH (Vienna) read a communication on this subject. Up to a recent date little attention had been paid to the auditory organs of deaf-mutes. The examination of deaf-mutes showed that they had a greater or less power of hearing, and it was very rare to find complete deafness of both ears, though they did not seem to understand what they heard. Moreover, deaf-mutes showed an utter lack of attention to auditory vibrations. The object of methodical auditory exercises was to awaken the attention to auditory impressions, to lead them to distinguish by hearing the sense of what they heard, and the gradual increase of auditory sensitiveness. Nearly all cases were suitable for these exercises, even cases of cerebro-spinal meningitis from which the patient had recovered. The exercises should go on until the deaf-mute could hear his own voice. The success of these exercises depended on the duration of the daily exercises, on the existing power of hearing, on the intellectual condition of the pupil, and on his application. In some cases it was possible to evoke little by little a trace of power of hearing in persons who seemed to lack it entirely. The exercises had a favourable influence on the pronunciation.

Dr. SCHWENDT (Bâle) also read a paper on the same subject. He considered it important in deaf-mutes to utilise the hearing power as much as possible, but not to the detriment of the lip language. He thought it desirable, in order to judge of the results of this method of treatment, to separate those who benefited by this method from those who were completely deaf.

*The Surgical Treatment of Otic Sclerosis.*

Dr. F. SIEBENMANN (Bâle), who read a paper on this subject, said that experience showed that surgical treatment of sclerotic otitis was useless, except when it resulted from suppurative otitis or from hypertrophic catarrh. From otic sclerosis several conditions had to be distinguished: (1) blocking of the Eustachian tube; (2) the remains of old otorrhœa; and (3) affections of the nervous system with involvement of hearing. To this last belonged the progressive deafness which came on between the ages of 40 and 50 years, and which had been called "presbyacousia." The early form of progressive deafness began generally between the tenth and twentieth years of age or between the twentieth and thirtieth years, rarely later. This was the true sclerosis of von Troeltsch, and consisted in the deposit of bone in the osseous labyrinth. The stapes became fixed, partly by contraction of its fenestra from the deposit of new bone and partly by the ossification of the annular ligament. A similar formation of new bone extended inwards and forwards to the end of the canal of the cochlea. Isolated foci might also occur in all the spirals of the cochlea or between them, giving rise to a nervous deafness. It was obvious, therefore, that it was impossible to treat such a condition surgically.

Dr. RICARDO BOTEY (Barcelona) maintained that surgical treatment in dry otitis should only be undertaken when auditory perception conducted through the bone was still preserved. Perforation of the membrana tympani and removal of one or all of the ossicles generally gave only temporary improvement. Surgical treatment was quite useless in this condition because otitic selerosis was a trophoneurosis, with the formation of bony tissue chiefly in the capsule of the labyrinth, around the fenestra ovales, in the canal of the cochlea, and even in the spirals of the cochlea, the endings of the auditory nerve being more or less affected.

Dr. MALHERBE said that he agreed with Dr. Siebenmann as to the great difference in the improvement obtained by the surgical treatment of dry otitis according as the sclerosis was either (1) secondary to catarrh of the hypertrophic variety, or (2) secondary to suppuration of the middle-ear, or (3) primary. On the one hand, in scleroses secondary to catarrh or to suppuration the improvement was, in Dr. Malherbe's experience, always very well marked. On the other hand, in primary sclerosis the results were variable, the degree of functional improvement depending exclusively on the extent to which the labyrinth participated in the sclerotic process. Dr. Malherbe also made some remarks on the progressive deafness of young persons referred to by Dr. Siebenmann as being the true sclerosis of von Troeltsch. He had often observed an early and rapid form of primary sclerosis which appeared to him always to originate in the tympanic cavity. He agreed with Dr. Ricardo Botey's opinion as to the uselessness of perforation of the membrana tympani, extraction of the ossicles and restoration of the mobility of the stapes, but he could not accept the view that the surgical treatment of dry otitis was a failure. In a

tropho-neurotic disorder great improvement could not be expected, but he thought that aural surgeons ought sometimes to be satisfied with small improvements provided that the patients were really benefited thereby. Dr. Malherbe spoke in favour of the petro-mastoid operation which he had often performed and he defended it against some adverse criticism by Dr. Laurens.

Dr. LOEWENBERG said that the rational treatment of sclerosis, a frequent cause of high degrees of deafness, ought to be based on an exact knowledge of the nature of the disease. In his opinion the treatises on otology which described it as a general atrophy of the lining membrane of the tympanic cavity associated with a patulous condition of the Eustachian tube were altogether in error. In a very large proportion of patients there was, on the contrary, catarrh of the tympanic cavity with enlargement and hypersecretion. On account of the want of success which had hitherto attended the treatment of sclerosis he thought that remedial measures ought to be directed chiefly against the catarrh which seriously aggravated the sclerosis and interfered with the hearing.

Professor POLITZER (Vienna) said that he had often observed that the lesions of sclerosis were localised at the level of the fenestrum ovale and that synechiæ were found in the tympanic cavity. He had met with forms of malignant sclerosis which advanced with great rapidity. He did not advocate either mobilisation or extraction of the stapes, neither did he think that in inflammatory cases advantage could be derived from operations by way of the Eustachian tube; these latter operations caused irritation and often made the hearing worse. He preferred either massage according to the method of Deltanche or vibratory massage.

*The Causes and Treatment of Ménière's Disease.*

Dr. MOLL (Arnheim) read a paper on this subject, in which he pointed out that there were so many conditions which could give rise to the giddiness, humming in the ears, deafness, and vomiting, which constituted Ménière's disease, that it was advisable to speak of Ménière's symptoms rather than of Ménière's disease. As to treatment, that must depend on the special cause of the labyrinthine irritation. To calm the hyperæsthesia of the labyrinth sulphate of quinine was of much value, given in small doses; also hypodermic injections of pilocarpine. The iodides were also useful. Surgical intervention to remove the cause might sometimes be of much service.

STOMATOLOGY.

*Treatment of Pyorrhœa Alveolaris.*

Dr. PIERGILI (Rome) said that any pathogenic diathesis favoured pyorrhœa alveolaris and on this account appropriate treatment must be adopted for even the mildest degrees of gout, diabetes, albuminuria, or rheumatism, also for anæmia, diseases of the nervous system, diseases of the heart, emphysema of the lungs, &c. This general treatment should precede the local treatment. Pyorrhœa alveolaris depended on sclerosis of the pericementum. At the commencement of the disease the gums were generally hyperæmic; the pericementum compressed between the root of the teeth and the alveolus very quickly became necrosed. The gums ought to be scarified and freed from any granulations (*fongosités*) which might be present. During the second period of the disease the gums became detached from the neck of the tooth and epithelium soon covered all its inner surface. Dr. Piergili not only excised the projecting parts of the gum but scraped the funnel-shaped space between the tooth and the detached gum so as to remove all the fragments of tartar, all the detritus of the pericementum, and the epithelium covering the inner surface of the gum. When the disease was very advanced and the pus very abundant he commenced the treatment by washing out the alveoli with an ordinary Pravaz syringe, using by preference a solution of corrosive sublimate (1 in 10,000); he had tried actol (lactate of silver) which is an admirable disinfectant, but he had given it up because it blackened the teeth. Dr. Piergili had found these methods of treatment very successful.

*Correction of Deviations of the Teeth.*

Dr. PIERMICHELE GIURIA (Genoa) said that the most favourable age for the correction of deviations of the teeth was from 12 to 16 years. The simplest apparatus and that which was applicable to the greatest number of cases consisted (1) of a plate of caoutchouc furnished with vulcanite pivots which pressed the irregular teeth into their proper place and (2) of elastic metal bands applied to the labial surface of the teeth and usually intended to exert counter-pressure. When there was insufficient space the remedy was either expansion of the dental arch or extraction of a tooth (the sixth or the fourth). In prognathous patients when the condition was idiopathic the deformity might sometimes be prevented by pressing back the front teeth with a caoutchouc plate and wires. For pathological prognathism Dr. Giuria described a variety of mechanical methods of treatment. In opisthognathous patients the molars and bicuspids might be covered with an indiarubber plate provided with pivots by means of which the front teeth were pressed forwards. In slight degrees of mordex apertus the molars might be filed or extracted. When the condition was well marked the angle of the mandible might be reduced by inserting a plate of indiarubber between the upper and lower molars and exerting continuous pressure by means of a bandage under the chin. Irregularities of individual teeth might be corrected by means of wires fixed to an indiarubber plate.

## V.—STATE AND MILITARY MEDICINE AND SURGERY.

MILITARY MEDICINE AND SURGERY.

*Prophylaxis of Syphilis in Armies.*

A communication was read from Colonel J. LANE NOTTER, M.D. Dub., R.A.M.C., professor of hygiene at Netley, official delegate from the War Office to the Congress. The tables referred to were shown. He said:—

"The accompanying tables give, as far as the records will allow, the total syphilis, divided into primary and secondary, and total venereal diseases in certain divisions of the British Army. The four divisions chosen are—(1) home, (2) India, (3) Gibraltar, and (4) Malta. The total persons under observation have been 153,646 per annum, giving a total of 6,145 840 in all. From 1859 to 1868 venereal disorders were classed as enthetic diseases. From 1869 to 1878 non-syphilitic venereal diseases were all collected under the diseases of the urinary tract; the figures for these years will be therefore about 10 per 1000 more than they should be. From 1879 to 1885 the non-syphilitic diseases were entered under the two heads gonorrhœa and the sequelæ. From 1886 to 1898 they are classed as soft chancre and gonorrhœa, and the total primary syphilis and soft chancre form the group primary venereal sore. If we look at Tables I., II., III., and IV. the first striking feature is the great excess of syphilitic and of venereal cases occurring in India and the low admissions in Malta.

"*Home.*—Taking the home figures first it will be observed that there was a gradual diminution in the number of admissions for syphilis from 1859 to 1876. From 1876 to 1884 the admissions rose so that in the last year they were as high as in 1867. From 1884 to 1898 there has been a gradual and practically constant fall. From 1866 to 1886 the Contagious Diseases Act was in force in 14 stations. As has been often pointed out, the admissions were lower in these 14 stations than in 14 similar stations during the operation of the Act. In spite of the Act, however, the admissions in the protected stations gradually rose after 1874 until 1884, the admissions in 1884 being only five per 1000 of the strength less than in 1860. After the abolition of the compulsory examination of the prostitutes in 1883 the admissions rose considerably, but the rise appears to be only the continuation of that which was taking place the previous year. Since 1886, when the Contagious Diseases Acts were finally repealed, the curves of the 14 previously protected, 14 non-protected, and whole strength are nearly parallel and show a steady fall. If we consider the total admissions for all venereal diseases or the admissions for primary venereal sores the same steady fall is seen. There seems to be no doubt, therefore, that quite independently of all regulations in the home stations syphilis has constantly declined. The reasons for this decline are probably not far to seek. In 1873 the Education Acts were adopted and it is significant that 12 years after this adoption the fall really began. The increase of education affects both the soldier and the prostitute. In the case of the soldier he has greater liking for intelligent amusement and greater self-restraint. The prostitutes on account of their education become of a higher order and therefore are more likely to endeavour to keep themselves in good health, or to endeavour to get cured

of venereal diseases which they contract in the pursuit of their calling. In addition to this there is less drunkenness in the army and with this decrease there will be a corresponding decrease in venereal diseases. In addition, the prostitutes are able to get proper medical advice at some or other of the various medical charities which abound throughout the country. With increasing education and a higher social and moral standing in the Army there is every prospect that the decline will continue. No regulations, therefore, can with reason be recommended.

"*India.*—A glance at Table II. shows that in India neither syphilis nor total venereal diseases have decreased since 1886 except during the last two years, but that on the whole there has been an increase in both figures. The years 1892–1896 show a very marked increase. Upon consulting Table V. it is seen that there has been a similar increase in the primary venereal sores and that this increase has been caused almost entirely by the excess of admissions for primary syphilis. It is quite evident, therefore, that the same influences are not at work in India as at home. In the first place the conditions are not the same, for although the army is practically the same the prostitutes are totally different. The Indian prostitutes are largely hereditary and have a separate caste, so that they are not looked upon by their fellows as outcasts; in fact, there are castes upon whom they look down, it being an insult to a prostitute to term her a common sweeper. They are totally uneducated and there is no doubt that they belong to a much lower type than their English compeers. In 1897 the inefficiency in the army from venereal diseases had reached such a great amount that the East India Cantonments Act and Regulations were introduced. These regulations differ very considerably from any regulations which were previously in force. The chief provisions are that the cantonment authority may, so far as the funds permit, provide and maintain as many hospitals and dispensaries as may be necessary, that all poor sick suffering from any contagious or infectious disorder may be treated gratuitously at the hospital or dispensary either as an in-patient or as an out-patient, that any person not eligible by reason of poverty may be treated upon such terms as the cantonment authority think fit to impose, and that if the medical officer in charge of such hospital or dispensary has *prima facie* grounds for believing that any person living in the cantonment is suffering from an infectious or contagious disease he may, by notice in writing, call upon such person to attend at the hospital or dispensary and not to quit it without the permission of the medical officer unless and until such medical officer is satisfied that such person is not in fact suffering, or is no longer suffering from, such disorder. That if any person having received a notice to attend refuses to do so, or having attended leaves without permission, the commanding officer may direct such person to remove from the cantonment and prohibit such person from re-entering it. That the cantonment authority may prohibit the keeping of a brothel or the residence of a public prostitute in the cantonment or in any special portion thereof. That no public prostitute shall be permitted to reside within the limits of any regimental bazaar situated in the cantonment, and that no person shall in any street or public place within the limits of the cantonment loiter for the purpose of prostitution or importune any person to the commission of sexual immorality. It will be seen that these provisions are in no way penal. Provisions are made for the prevention of venereal diseases somewhat similar to those for the prevention of the spread of such diseases as small-pox at home. If a prostitute having, or presumably having, a venereal disease declines to go to the hospital or dispensary she has the alternative of leaving the cantonment. In the hospital she is treated as an infectious patient and not as a prisoner, as in the old Lock Hospital, and the cantonment authorities are instructed to see that the spirit of the Act is carried out and that great caution must be observed in respect of the attendance at, or detention in, a hospital or dispensary, so that any respectable persons who will themselves adopt measures for the prevention of the spread of the disorder from which they are suffering shall not be detained in the hospital. The cantonment authorities are further authorised to make arrangements for and to encourage the prostitutes voluntarily to submit themselves to an examination. The Cantonment Act was put into operation in October, 1897, and in 1898 the admissions for primary syphilis fell to a point which is lower than in any year since 1888. It is perhaps unfair to attribute it to the enforcement of the Act entirely, but the fact is significant. The Act is on its trial and whether the decrease will be maintained remains to be seen. Upon one thing all the Indian authorities are agreed, that some regulations are absolutely necessary on account of the impossibility of obtaining any immediate increase in the moral or social standard of the prostitutes themselves.

"*Gibraltar.*—Table III. shows that the total venereal admissions, although not so high as in India, are much higher than those for the home stations—that is, during recent years. The admissions for primary syphilis are erratic. The comparatively high rates from 1880 to 1885 are very noticeable and not easy of explanation. In Table V. the analysis of the high curve of admissions for primary venereal sores is very strange when compared with the other three curves. As a whole the curve of the primary syphilis admissions is considerably below that for both the home stations and India, whereas that for soft chancres is in excess of all the other divisions. Although the rate for syphilis is satisfactory, especially during the years 1894, 1895, and 1896, and though even in 1897 and 1898 the rates are below those of any of the other divisions, the total admissions for venereal sores are inordinately high and the loss in efficiency is therefore very great. Compulsory weekly examination of alien prostitutes by the medical officer was instituted in May, 1883, and repealed in July, 1887. The issue of certificates of health after voluntary examination ceased in November, 1888, and police inspection was stopped in January, 1889. There seems to have been but little effect following either the institution or the repeal of these measures. As there is no tendency for the total venereal rate to fall spontaneously, as in the home stations, it is necessary to adopt some measures to prevent the constant high inefficiency from these disorders. It would be advisable to adopt some part of the East India Cantonment Act and Regulations. For instance, the medical officer should have power to demand the attendance of any person suffering from any contagious disease at the hospital and failing the attendance the person in question should be required to leave the station. The poorer persons should have the opportunity of being treated gratuitously by the authority.

"*Malta.*—Table IV. shows that in Malta the admission rate for all venereal diseases has been lower in Malta from 1859 to 1896 than in all the other divisions. During 1896, 1897, and 1898 the rate is higher than in the home stations, but considerably lower than in Gibraltar or India. In Table V. it is seen that the curves for primary syphilis and soft chancres cross one another and that during the past five years the admission rate for the former has been in excess of that for the latter. The rate for soft chancres is lower than in India or Gibraltar but rather higher than that in the home stations. In Malta the motion to repeal the Contagious Diseases Acts was lost in the House of Deputies, so that these are still in force. It is perhaps not just to compare the Malta figure with the home figures on account of the great difference between the strengths, but it is significant that with the exception of the last three years the rates for total venereal and primary syphilitic diseases have been lower in Malta than in the home stations. The modified cantonments regulations which had been suggested for Gibraltar might well be tried in Malta. There is nothing in these regulations which interfere with the liberty of the subject more than the laws which affect the infectious diseases in Great Britain, and these are surely very necessary interferences. Further, the prostitutes are not to be treated as criminals, but merely as sick patients, who can be treated either gratuitously or at small charge for their illness.

"To summarise, the methods of prophylaxis to be recommended are: (1) general; and (2) specific. The general methods are the education of the soldier in the subject of contagious disease, the encouragement of physical or intellectual amusements, and the inculcation of self-restraint. The specific methods are the wise administration of the Cantonment Acts in India and of a modified form of these Acts in Malta, Gibraltar, and other similar stations."

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THE LATE DR. H. MARSHALL.—A memorial brass has been placed by some friends of the late Dr. Henry Marshall in All Saints Church, Clifton, with which church the deceased had been prominently identified since its foundation.

# THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL CORRESPONDENT.)

## THE OPENING CEREMONY.

BY two o'clock in the afternoon of Friday, August 10th, the largest amphitheatre of the École de Médecine was nearly full with expectant members of the Tenth International Congress of Hygiene. The platform was decorated with red velvet and gilt braidings and flowers, and was soon occupied by well-known sanitary reformers. A few minutes after 2 o'clock, the Prime Minister, M. Waldeck-Rousseau, accompanied by Dr. Brouardel (the President of the Congress), Dr. A. J. Martin (the general secretary), and many others entered. Indeed, the platform proved too small and several members who should have taken their places by the side of the presidential chair were obliged to hunt for seats in the already crowded amphitheatre. It appeared that there had been a great increase in the number of members within the last few days, but that it was too late to obtain a larger hall. Professor BROUARDEL was the first to speak and he expressed his thanks to M. Waldeck-Rousseau for presiding over the meeting, as his presence would show that the Government sympathised with the efforts of the Congress to improve the public health of all countries. He then expressed his gratitude to the foreign members of the Congress and assured them that in the cause of hygiene they would find no frontier demarcations. All nations would benefit from their labours, and indeed it was only necessary to visit the great exhibition to realise that they had done so already. If, for want of technical knowledge, the visitor failed to appreciate all the improvements, he need only look at the statistical tables which set forth how the mortality had decreased in proportion to the sanitary reforms achieved. This was more particularly shown by the exhibits of the United States and of Germany. The latter country displayed a map of Europe which at a glance indicated how the prevalence of small-pox had been reduced where vaccination was rigorously practised. It had been said that a century hence the civilisation of a people would be judged by the number of cases of small-pox occurring in its population. The same remark might be made with regard to typhoid fever, and where disinfection was rigorously practised there the prevalence of infectious fevers was much reduced. In Paris that reduction was during the last 10 years equal to 25 per cent. The century which commenced with Jenner and closed with Pasteur promised still greater progress for the future. With the use of antitoxin the deaths from diphtheria had been reduced by four-fifths, and large wards in the Paris hospitals which had been reserved for cases of this disease had to be closed for want of patients. In England the prevalence of tuberculosis had been lessened by one-half, and England paid the lightest tribute to this disease of any country. To England and to Germany the world stood indebted for a great example—the one nation by its sanitary legislation and the other by its economic legislation had very materially reduced their death-rates. The engineer and architect in England, and the compulsory insurance with its pensions and sick fund in Germany had made all Europe anxious to do something of the same sort. The work was great; it must be begun at school and continued by the press. The nations must be taught that if sanitation was at times expensive it had never failed to keep its promises. Its laws, however, had not yet been sufficiently applied to the poorer classes. Of all social questions this was the most urgent. The new century would continue the good work, particularly as they might now rely on a more active support from the Governments.

## THE GOOD DONE BY HYGIENIC CONGRESSES.

The General Secretary (Dr. A. J. MARTIN) reported that no sooner had the Congress at Madrid decided that it would meet next time in Paris than the French committee set to work. Through the Minister of Foreign Affairs application was made to foreign Governments to form local committees, and these committees had materially assisted in giving the Congress its present representative character. Some 1500 members had been enrolled and three-quarters of them were delegates representing Governments, universities, municipalities, and other organised bodies. For the discussions of the Congress 56 reports had been submitted to the sections and most of them were now in print and distributed. They comprised the whole evolution of the century If many of the facts adduced were not new they in any case constituted useful evidence. Thanks to the generosity of the town of Paris it had been possible to print these reports. Dr. Martin then went on to review the practical results achieved by the various international congresses of hygiene. The first was held in Brussels in 1876, with the result that the Brussels Bureau of Hygiene then created had become a model institution for all Europe. Two years later a similar impulse was given in France by the presence of the second Congress held in Paris during the Universal Exhibition of 1878. The third Congress met in Turin, and since that day there had been a great improvement in sanitary legislation and in the death-rate of Italy. In 1882 they met in Switzerland, and in 1884 in Holland. At these Congresses Pasteur and Koch spoke and the prophylactic measures based on their discoveries were widely adopted. In 1885 they were at Vienna and the sewerage works of that capital were taken in hand. In 1889 they came to Paris more especially to see the results of Pasteur's work. After their meeting in London in 1891 notable efforts had been made in England to improve the housing of the poorer classes. At Budapest they gave a special welcome to Dr. Roux, who had just produced his anti-diphtheritic toxin; while finally, at Madrid, they had infused new life and hope among the Spanish sanitary reformers. What the results of the present Congress would be it was as yet too soon to say; but they might rest assured that wherever the Congress met there sanitary reforms would follow.

## THE PROMISES OF THE PRIME MINISTER.

The President of the Council of Ministers, M. WALDECK-ROUSSEAU, now rose and read his speech. In the name of the French Government he welcomed the members of the Congress. They had already met twice in Paris and he was glad of this opportunity of rendering homage to the praiseworthy and useful work they had accomplished. Hygiene was quite a modern science. It dated back barely more than 50 years. Preventive medicine was most complex and this might be explained by the fact that it could be considered as the crown of all natural sciences. The discoveries of physicians, of chemists, and of engineers were the materials out of which hygiene was constructed. But to realise the ingenious theories of the hygienists the help of the State was needed. They had every right to rely on such help. This declaration was greeted with loud applause. M. Waldeck-Rousseau continued: "You are the most valuable and indispensable collaborators of all governments. You are the guardians of public health—that is to say, of the most precious gift a State can possess. For too long governmental and parliamentary initiative has neglected the elaboration of indispensable sanitary laws. For too long the incontestable right of the State to impose upon the individual necessary preventive measures which, while protecting his health preserve the public welfare, has been overlooked and misunderstood. The rights of the individual, badly interpreted, have prolonged this delay. It is a matter of education and the democracies will insist that such education shall be given." The presence at the Congress of so many distinguished foreigners is a guarantee that the work of the Congress would summarise what the civilised world had done. "Our best reward," he said, "will be the confidence you will have of seeing your theories applied by those who are in power. You may rest assured that so far as we are concerned and in the measure of our forces, your confidence will not be misplaced."

This handsome promise was loudly applauded; and it is all the more precious as it was not due to the enthusiasm or impulse of the moment, but had been deliberately written down beforehand in the carefully elaborated set speech which M. Waldeck-Rousseau read out.

Dr. CALLEJA spoke on behalf of Spain, recalling that he had been a student in that amphitheatre and had learnt to look upon France as his second country.

Dr. KOHLER, for Germany, said much had been done, but much more remained to be done. The fruit of their teaching would ripen in the next century. The Tenth Congress of Hygiene stood between the two centuries, and he hoped its deliberations would help to render the twentieth century a century of sanitary reform.

Professor CORFIELD, on behalf of Great Britain, also recalled the fact that he had been a student in that amphitheatre. He lamented the fact that at several of the previous Congresses the British Government had not been represented. Then at last the War Office had sent one delegate. Now on this occasion there were no less than five official representatives of the British Government attending. This, he thought, was a big improvement, though he was utterly unable to explain how it had been brought about. Perhaps the British Government had at last grasped the fact that there was something serious in these Congresses; or, perhaps it was because since the Congress had met in London many dwellings, he might almost say palaces, had been built for the working-class. In any case, they were now five Government representatives, and if they continued to increase in the same ratio they would be 25 at the next Congress.

Dr. VAN IVAMA-STERNNEGG of the Austrian Statistical Bureau, Dr. BARTOLETTE of the United States Army, and a representative of the Russian Government having said a few words, M. WALDECK-ROUSSEAU expressed his gratification at having heard so many cordial remarks from the foreign delegates. He thought that the French Faculty of Medicine should be proud of the fact, rendered manifest that afternoon, that so many illustrious teachers of hygiene coming from different countries had been its former pupils. The meeting now terminated and the members hurried off to the *fête* and garden party to be given at the Elysée by the President of the Republic.

### EXCURSION TO THE ACHÈRES SEWAGE FARM.

On August 12th some 300 members of the Congress were conveyed by special train to the plains of Achères situated on the banks of the Seine close to the forest of St. Germain. This municipal estate measures 10 kilometres in length and one kilometre in width. It is irrigated throughout with the crude sewage of Paris. The train did not stop at the station but at the extreme western end of the estate. Here three narrow-gauge trains conveyed the members to various points of interest. In 1895 a visitor to Achères would have seen the sewage from Paris just beginning to arrive. The greater part of the plain seemed like a vast desert. The small brushwood which formerly served to conceal the game—for the Emperor Napoleon III., and after him Baron Hirsch, used to shoot over these grounds—had been cleared away and nothing had yet grown in its stead. The contrast to-day is most remarkable. The barren plain is now verdant with luxurious vegetation. Beetroot is growing over a large part of the ground, but there are also many fields rich with golden grain. The avenues are planted with trees, mostly walnut. Of course they are still young and small, but they are healthy and flourishing. The greater part of land is let out to cultivators, but the municipality has kept a portion in its own hands for experimental purposes and to lay out a few ornamental parks and to plant orchards. It was at these spots that the members of the Congress stopped so as to stroll among the flower-beds, admire the peaches and other fruits ripening on the trees, and above all to visit the ornamental waters; these were as clear as crystal. Fish darted rapidly about, and as the water came out of the earth in little jets glasses were filled and the water was eagerly drunk by nearly all the visitors. Yet this was neither rain-water nor spring-water: it was the water of the Paris sewers. What this meant was evident to all, for close by on the surface of the soil in countless little drains the black foul sewage was exposed to view. But having fed the plants and having passed through more than six feet of sandy soil the water collected at the lower levels is found to be quite free from the sewage. The sewage, which contained 11,750,000 bacteria per cubic centimetre, retained but 2350 bacteria in one part of the estate and only 188 in another part—that is, of course, after it had filtered through the soil. The purified sewage water at Achères is more free from bacteria than is usually the case with good spring water. In regard to organic matter, where the amount extracted from the sewage weighed 34·9 grammes, after passing through the soil this water only retained 1·8 grammes. The object, however, is not to produce drinking-water out of sewage but to prevent the pollution of the Seine by the crude sewage. For this purpose the town of Paris now possesses 900 hectares at Gennevilliers, 1000 hectares at Achères, 2150 hectares at Méry-Pierrelaye, and 950 hectares at Carrières-Triel—a total of 5000 hectares. As it is calculated that 40,000 cubic metres of sewage can be treated per hectare per annum, 200,000,000 cubic metres of sewage can be turned in the course of the year on to these estates; and as yet the sewage of the town of Paris does not exceed 180,000,000 cubic metres per annum, so that it is only the storm overflow that now goes direct into the river; and the Seine, which had been contaminated by the Paris sewage as far down as Rouen, is at last free from this great source of pollution. On the other hand, the sewage is no longer entirely wasted; it produces luxuriant crops, and at Achères there is a large distillery where the beetroot is converted into alcohol. All this was explained and shown to the members of the Congress, who were not only greatly edified by the practical success of this gigantic enterprise but were also charmed by the artistic taste shown in the laying-out of the gardens, by the beauty of the flowers, by the artificial rockery around the ornamental waters, and by the general prosperity, fertility, verdure, and brightness of the scene. After some light refreshments served at the distillery, and having travelled over the entire estate in the narrow gauge trains, the members reached the station of Achères, where the special main-line train was waiting to conduct them back to Paris. The entire cost of this agreeable and instructive expedition was defrayed by the Paris municipality. M. Beckman, M. Launey, and M. Louis Musson, the principal municipal engineers, accompanied the party and were busily engaged all the time in giving explanations to the members.

### THE PRIME MINISTER'S ENTERTAINMENT.

The third official reception of the members of the Medical Congresses took place on Monday evening, August 13th, and was given by M. Waldeck-Rousseau, who, as Prime Minister, elected to take over the portfolio of the Ministry of the Interior. He entertained at dinner 80 of the official Government representatives who are members of the Tenth International Congress of Hygiene, and later in the evening threw his official residence at the Place Beauveau open to all the members of the Congresses. Hardly any members, however, of the International Congress of Medicine remained in Paris and nearly all the guests were members of the Congress of Hygiene, consequently I do not think that there were at any time more than 1500 persons present. The result was a thoroughly enjoyable evening. To begin with—and this is always a good symptom—I was on entering at once able to dispose of my overcoat. At the Palace of the Luxembourg this simple operation had necessitated a fierce struggle in the midst of a dense and disorderly crowd that lasted for more than half an hour. Once within the beautifully furnished saloons of the Ministry I was able to stroll about freely, for there was no crowding. Even the buffet was not besieged, and refreshments could be obtained without delay or struggle, or the risk of having wine spilt over one's clothes or an ice dropped down one's back, all of which mishaps had become usual incidents on these festive occasions. But, more wonderful still, in the spacious long room which had a stage at its farthest extremity I was actually able to obtain a seat and thus saw in comfort the whole performance. First there were some Andalusian dances, and then a *pot-pourri* of the most popular songs from Offenbach's operettas. These were admirably rendered and loudly applauded. The gardens were illuminated and offered a cool strolling ground for the guests to smoke and chat, and it was not till after midnight that the members resigned themselves to quit these luxurious and pleasant Ministerial reception rooms.

### THE RECEPTION AT THE HÔTEL DE VILLE.

On the afternoon of Tuesday, August 14th, the Congress was received at the Hôtel de Ville by M. GRÉBAUVAL, the President of the Paris Municipal Council. All the reception-rooms were thrown open and for some time the members strolled about looking at the gigantic and somewhat sensational pictures that illustrated dramatic episodes in the history of the town. Ultimately an usher announced the arrival of the President of the Municipal Council, who took his stand in front of a buffet and the members gathered in a half-circle around. Professor BROUARDEL introduced the Congress, observing that it constituted a remarkable gathering of people from all parts of the world who discussed together in perfect harmony, there being no party divisions among them. The resolutions adopted by the Congress in the main coincided with the policy of the Paris Municipal Council in so far as sanitary questions were concerned. This opinion would be

more particularly confirmed by those members of the Congress who had visited the Exhibition where they could see what had been done to improve the public health of Paris. The Municipal Council had always been popular with hygienists, for it had shown considerable readiness to adopt the suggestions of sanitary reformers, it had spent a considerable amount of money on improvements, and it was ever ready to welcome both French and foreign hygienists. M. GRÉBAUVAL expressed his thanks for the laudatory words uttered by the Dean of the Paris Faculty of Medicine. The concord to which allusion had been made was the happy result of the study of science. Hygiene represented the beneficent goddess who in teaching preventive medicine also helped to prevent moral corruption. As hygienists the members of the Congress had examined the minutest details of every-day life, thus showing a truly scientific spirit. It was to be hoped that in time the mass of the people would learn to be equally minute and careful. Formerly the constituted authorities were at the service of intolerance and superstition; now they were at the service of science. The crowd would not forget this Congress, for it had helped to build a wall—not a Chinese wall, but a European wall—against disease. He invited the Congress to accept a glass of champagne and he asked leave to drink to the prosperity of their good work. Some members of the Congress were then presented to the President of the Municipal Council, and after a little conversation the Congress dispersed so as to prepare for the great banquet to be held at night.

To-morrow there will be no sitting. The day will be left free so that the French members of the managing committee may conduct parties to the Exhibition to show and explain those exhibits that are of technical interest to hygienists. The work of the sections will be resumed on Thursday, August 16th.

Paris, August 14th.

## THE WAR IN SOUTH AFRICA.

THERE is but little to be chronicled from a military point of view during the past week. What there is, on the whole, is good. The Boers are being hard pressed. We have news about Lord Kitchener and De Wet which would lead to the belief that the force commanded by the skilful Boer general was at last in grave danger of being surrounded, but this has been so often an unfulfilled belief before, owing to the clever way in which he has eluded capture, that we may well hesitate to express any definite opinion until it is an accomplished fact and there is no longer any room for doubt. Until this has been done we may expect a repetition of harassing raids and surprises. In war the boldest strategy is so frequently the best that to our unmilitary mind we fail to understand why, following the plan adopted by Sherman in his celebrated march during the American war, no attempt has been made to provision a strong force and march it for the purpose of seizing the railway and cutting off the source of the Boer supplies and line of communication with Lorenzo Marcques. The more we learn of the war in South Africa the more clearly does it appear that transport has throughout been the main source of all our difficulties. The railways in South Africa are of narrow gauge, there is a great deficiency of rolling-stock, there are steep gradients and a want of sufficient motive power; the consequence of all which is that trains take a very long time in making their journeys and have to carry relatively light freights. The hospital service has greatly suffered on this account and the straits to which General Rundle's force has been reduced are apparently attributable to the same cause.

The members of the South African Royal Commission are on their way to South Africa and the session of Parliament has closed, and we may consequently anticipate a brief lull in contentious criticism. We are not sorry for it, for we think that the tone adopted in the last debate in the House of Commons on the Royal Commission was regrettable. We do not know, of course, whether Mr. Burdett-Coutts has an exasperating effect on Mr. Balfour as has been alleged, but such certainly seems to be the case, for a strained position has somehow been brought about. Mr. Balfour is usually extremely temperate and courteous in his replies to Members and in his conduct of Parliamentary business generally, butwhere Mr. Burdett-Coutts is concerned he almost always couches what he has to say in a tone of asperity.

Assuming that the statements from a special correspondent of the *Times* of August 13th regarding the treatment of enteric fever convalescents from South Africa are correct, we can only say that they disclose a discreditable state of things and a want of practical organisation in looking after our invalid reservists. As regards the medical department and hospitals at the seat of war we continue to read the most conflicting accounts in the public press as to their alleged shortcomings. It can scarcely be that any deficiency in the supplies has arisen from these not having been present in the country, for the Government and the public have forwarded them in abundance. We can therefore only assume that, owing to transport difficulties, they have not been distributed. The medical officers should, in our opinion, have full power to purchase hospital supplies whenever necessary and where these are locally obtainable, notwithstanding the objections that might be urged against having more than one spending department with an army in the field.

We can quite realise the disappointment of the medical officers in South Africa at the change which has taken place in the state of affairs affecting their service and that they are looking forward to the investigation by the Royal Commission and some authoritative expression of opinion as to the alleged shortcomings and their causes with a keen sense of relief.

### THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

The first detachment of the new branch of the Imperial Yeomanry Hospital destined for Pretoria has arrived from England, and pending the completion of the necessary arrangements for their transport we are putting them up here, to the number of 104 orderlies, two medical officers, and 12 nursing sisters. This brings up the number in our camp to 1225. It is to be hoped that the difficulties—such, for instance, as the inevitable irregularity of railway service as long as there are commandoes liable to swoop down upon the line—which still make it necessary for the military authorities to curtail railway travelling north of Bloemfontein, even to the extent of forbidding the return of prominent members of the mining industry to Johannesburg, will shortly be removed, or that, at all events, means will be found for getting the staff and material of this new branch up-country in order that they may get into working order without undue delay. The *personnel* are full of enthusiasm and desire to get to work, whereas all the excitement of working in the war and the novelty of African surroundings has worn itself out of our staff during the last five months, and much as many of our people would like to see something of the "front" there are very few who would voluntarily throw up their work in this hospital for the sake of any change of site, however tempting it might be from some points of view. Everything runs like clockwork here now and the feeling of romance has so completely died out that we really almost at times forget that we have not been working under similar conditions all our lives, while at other times the feeling most prominently expressed is one of home-sickness and a longing to be "back again." Colonel Sloggett went down to Cape Town to meet the new branch and brought them up here at once. It was not altogether an easy matter to find accommodation for them, especially for the 12 sisters, for our own 48 sisters were quite cramped enough already. However, by the help of a few bell-tents their sleeping accommodation was arranged for, and with great good luck we got a fresh hut erected just in time to be used as a dining-room for the 60 nursing sisters who now have to be catered for. Only a tent had been available for that purpose before and great inconvenience has been caused from time to time by its being repeatedly blown down. Now on the windiest and dustiest day they will at least be freed from any anxiety as to whether they will find their meals in an edible condition. This hut is 60 feet long by 16 feet 6 inches broad. One end of it is curtained off from the larger half as a sitting-room and there the dining tables are arranged, and we have placed it quite close to the sisters' kitchen, but separated from it by an open-air space. The doors are placed in the middle of the long sides of the hut, so that the two ends should be as far as possible defended from wind and dust. I think they will now be thoroughly comfortable.

I hope that during the sojourn of the new staff with us and the consequent increase of our forces we shall be enabled to give several of our original staff a little rest and change. Many of them have invitations from friends in other institutions. Some, indeed, have already run away for a few days—the sisters for the most part to Kimberley—and the medical officers have all of them got a change by either taking a train-load of convalescents down to Cape Town, by going over to a neighbouring magistrate's or farmer's for a day or two's shooting, or by going on a camping expedition to Table Mountain, which is some 12 miles away and where there is always a certainty of seeing, and the chance of capturing, some baboons. As they have always come back very much the better for the change, it is to be hoped that it will be possible to give everybody who has not hitherto been able to be spared a short holiday. Our dental surgeon has already gone home as have two of our surgeon's dressers, but luckily we have been able to replace one of the latter with a medical student who came out as a trooper in the Yeomanry. Indeed, every department of our staff has had in a similar way to attach to itself reinforcements from the convalescent patients or we should never have been able to get through the amount of work which we have found ready to our hand.

Though we have not taken in any ambulance train this week yet several small detachments, chiefly of Yeomanry, have arrived and the number of patients who have passed through the hospital now exceeds 2,300. Among these there have been only 53 deaths, which, considering that quite half of the patients have had enteric fever, gives a satisfactorily low death-rate. This disease is a most exacting one for any hospital to cope with in large numbers. Not only are many of its victims grave cases, which call for the most skilful nursing and much personal attention from doctors, sisters, orderlies, and those employed in the disinfecting departments, but also every case, however slight, occupies a bed for at least five weeks. The average length of stay, indeed, of these patients in hospital works out at even a longer time than that—which is more than double the length of stay of a patient with pneumonia, for instance—so that the beds are blocked for a long period. A curious sight was to be observed in one of the wards on Mafeking night. When the news of the relief came there was a patient convalescent from enteric fever but unable yet to get out of bed. His request to be allowed to get out of bed and execute a dance of joy was refused by the sister, so he was driven to signify his glee by proxy, and he asked the orderly to stand on his head in the middle of the ward for him. During the last month we have had to do over 100 operations in the "theatre" (the largest number on any one day was eight), besides many minor ones in the wards. We had a visit a little while ago from our civilian director, Mr. Hamilton. He instituted, and there has since been carried out, a complete stock-taking throughout the entire hospital.

We owe our thanks to a large number of people at home for their kind gifts of sweets and tobacco which have been arriving of late. They are both immensely appreciated. By-the-by it would be a great convenience to those who have to undertake the distribution of such gifts if they could be done up before they left the shop in very small packets, each packet containing just enough of the particular article to last one man for one day, or at the outside for two days. "Tommy" seems much to prefer his comforts doled out to him frequently in small quantities. He is not a good hand at so husbanding a larger supply as to make it last the time it should, nor is he at all fond of sharing a packet with another man or men. What he likes best of all is to have his day's ration of each article distributed to him each day, and ever since we came here our "Tommies" have been humoured in that respect by my wife's regular daily round; but, of course, if the distributor has to deal out the allowance from large parcels it adds enormously to the labour of distribution when there are from 700 to 800 patients to be visited each day. If I were asked what quantity should be put into each parcel I should say, of cigarettes six, of tobacco half an ounce, and of sweets two ounces. It would be a much easier matter for the distributor when it was necessary or desirable to increase the number of such small parcels than it is to carve out the large parcels we at present receive; but while I venture to make this suggestion it will not, I hope, be thought that we are "looking a gift horse in the mouth."

I think I told you last week that there are some small commandoes of the enemy working about the country not far north from here. None of them are south of us, and yet a few days ago a wounded officer came in who had been sniped a couple of stations down the line towards Cape Town.

Our one and only blacksmith has lately escaped again from hospital, where he was laid low with dysentery, and he is now very hard at work in the smithy mending implements and bedsteads, shoeing horses, and so on, but I regret to say that his place has been taken in the ward by a still more indispensable member of the staff in the person of our masseur. I really doubt whether there is any other member whose absence from duty would excite such a general regret among the patients. I am glad to say that no more cases of scarlet fever have cropped up, and all members of the staff who are in hospital are doing well. The marble cross I brought down from Kimberley last week has been erected over poor FitzHugh's grave.

One of the first batch of wounded officers who came to us in our early days and went back to the front quite well, got wounded again recently near Pretoria. Directly we saw his name in the paper we thought we should not be far out if we prepared a bed for his early arrival, and we were not wrong, for on that very day he sent a telegram to say he was on his way and hoped we could take him in. Of course we were delighted to have him back, and still more delighted when our sympathy for his hard luck at having been sent down with a bullet in the leg was turned to smiles on the x-rays demonstrating that he had had the good luck to prove too tough for the bullet to go into him. There was only one wound, so naturally it was inferred that the bullet had lodged, but it was evidently a case of a spent bullet which had hit the skin only just hard enough to penetrate it and not hard enough to bury itself. He went up to the front again the next day.

The London newspapers for the last week of June have now reached us, and for the first time we are in a position to know fully about the reasons for the commotion which the local papers had already told us had been caused at home by the charges of inefficiency made against the Royal Army Medical Corps. We see that a committee of inquiry has, upon Lord Roberts's suggestion, been appointed by the Government, but we do not yet know all the names of that committee, nor have we been able to find the terms of reference which prescribe the field of inquiry. Whether any real and permanent good will result from the work of this committee, I think, depends to a very large extent upon the scope of their inquiries. If they are limited to a mere investigation of the way the Royal Army Medical Corps have done the work which it is their duty to do, I do not believe that they will succeed in discovering very much amiss, but if the committee is instructed to go further and to investigate fully some collateral matters, such, for instance, as the question whether the transport department have always given to the Royal Army Medical Corps as great facilities as it is reasonable to suppose they might have done under the given circumstances (and, of course, everybody knows that the circumstances are often extremely difficult in such a country as this), then I think that facts will come to light that have a very important bearing on the welfare of the sick and wounded.

We hear from officers just down from Pretoria that at this very moment Lord Roberts is moving his troops with a view to surrounding the Boers at Machadodorp, so that the news of the next few days will probably settle the question whether he is able to give them a good hammering there and by a big capture bring about the speedy termination of the war, or whether they will succeed in getting away to Lydenburg, in which case it is the opinion of many that the war will last another three or four months. Among the many signs that the end of the war is at hand is the fact that the Portland Hospital is being shut up. We are told that its equipment is being sold and that some of the articles are fetching far more than cost price. There could not be any better confirmation of what I told you some time ago about the number of beds now empty in the hospitals and the consequent removal of stress from all the hospitals in South Africa. Otherwise in face of the rumpus at home over the "military hospitals question" the disbanding of one of the hospitals would never have been even contemplated, especially of the one which bears the very best of reputations and which has the additional distinction of being the oldest of the many voluntary hospitals engaged in this war.

We have got some bicycles here now for the sisters, and when the weather improves—for we are still having a very bad time, with wind one day and rain the next—I hope they

will get some pleasure out of them, though indeed the surrounding country is so entirely unfavourable that we have never unpacked our own machines. The roads are not roads at all—they are just cart-tracks across the veldt—and the man of our staff who bicycles most generally limits his roving to a patrol of the railway-line.

Deelfontein, July 23rd.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Government of India and the Plague Commission Report.—Cholera and Plague in Bombay.*

THE Government of India have considered the report of the Indian Plague Commission on the measures for the suppression of plague. The methods which have been employed for the discovery of plague cases are (1) notification of sickness generally or of plague in particular; (2) surveillance of arrivals from infected areas; (3) grant of rewards for information regarding plague cases; (4) employment of volunteer agencies; (5) inspection of villages in the neighbourhood of infected villages; and (6) house visitation and house searches. The fifth and sixth are found to be useful only in very exceptional circumstances and the employment of paid spies and informers is considered a measure which should never be adopted.

The methods of obtaining information regarding the occurrence of plague deaths are by registration of deaths and by corpse inspection. The compulsory examination of dead bodies has had to be abandoned so that careful local inquiries for the purposes of fixing the exact cause of death alone remains. The imperfect registration of deaths makes the statistics of deaths far from being even approximately accurate. The Commission consider the measures to check plague under the following heads: (1) removal of plague patients to hospital; (2) segregation of contacts; (3) evacuation of towns and villages; and (4) disinfection.

The Government of India desire that the removal of patients to hospital should be compulsory only in places and under circumstances where it can be carried out so completely as to render it an effectual precaution. With regard to contacts the Governor-General in Council agrees that the segregation of contacts should be abandoned. Evacuation is generally beneficial but much depends upon climatic conditions, and in villages and small towns up to 10,000 people complete evacuation is generally possible and provides the most effective safeguard against the spread of the disease which has yet been discovered.

The Commission report that chemical disinfection is the only measure which, where effectively carried out, immediately destroys the infective material in a room and renders the room at once practically safe for re-occupation.

The Government of India do not agree that disinfection in towns should be restricted to the houses in which either cases of plague have occurred or dead rats have been found. The Commission think very little indeed is to be gained by the disinfection of the persons of travellers and recommend that this should be abandoned. Then there are the measures to prevent the spread of plague from infected to uninfected areas: (1) measures to prevent the spread of plague by sea to foreign countries or other places in India; (2) measures taken at the place of arrival of ships from infected ports; (3) measures to prevent the spread of plague from one part of India to another by railway; and (4) measures to prevent the spread of plague by means of communication in India other than by sea or by railway.

The Commission found that the work under the terms of the Venice Convention was carried out in a most thorough and conscientious manner and so as completely to satisfy the letter and spirit of the Convention. The Government of India under the second heading direct that in future the examination of passengers arriving from one infected port in India at another shall be discontinued. Under the other heads further changes are proposed. The disinfection of the personal effects of railway travellers will be altogether abandoned and all disinfection stations maintained on the railways will be closed. The detention of the ordinary traveller because he has come from an infected area is also condemned and "cordons cannot be made an effective means for preventing the spread of plague."

The summing-up of the Commission on the various measures is that in the larger places disinfection and the evacuation of specially infected quarters are the only measures to be applied. For villages they recommend inoculation, chemical disinfection, and evacuation. The Government of India lay down their opinion that certain measures should never be undertaken. These are the employment of paid informers or spies, the compulsory examination of corpses, the shutting up of people in infected houses, and the prevention of their movement from the infected area by means of a cordon or any other device. The Government of India also give their opinion on certain other measures which should rarely be attempted. These are house visitations or searches, compulsory notification of sickness, and the grant of rewards for information as to the existence of sickness.

The prospects of the monsoon have again become very gloomy. Very little rain has fallen in some places and the south-west current is generally weak. If more rain does not fall in the northern part of the Bombay Presidency the suffering is likely to exceed anything that has yet been endured. The numbers under famine relief still exceed 6,000,000. Within the past fortnight the outbreak of cholera in Bombay has assumed alarming proportions. The general mortality has risen, however, in greater degree and last week the total deaths registered were 1524—being 305 more than in the previous week. The registered deaths from plague have also increased. Every precaution is being taken with regard to the water-supply and all well water is examined and the wells are disinfected. Every house where a case occurs is promptly disinfected and the clothing of the patient is burnt. In other parts of India the plague continues subdued. There is now very little in Calcutta and Karachi is declared to be free once more.

July 26th.

## PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending July 7th are as follows: Remaining at the beginning of the week, 62; admitted, 1; discharged, 6; died, none; remaining at the end of the week, 57. The totals up to the end of the week are as follows: Cases, 297; deaths, 101; discharged, 139; "contacts" isolated, 1639; "contacts" remaining, 47; cases among "contacts," 7. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

Down to the end of the week ending May 19th the weekly number of new cases continued high. For that week it was 24, and afterwards was in each week as follows: May 26th, 7; June 2nd, 17; June 9th, 4; June 16th, 10; June 23rd, 6; June 30th, 12; July 7th, 1. This sequence, taken together with the diminished severity of the disease, gives ground for hoping that the end of the outbreak has been nearly reached, and that it will soon be possible once more to furnish outgoing vessels with clean bills of health. In the meantime the measures and precautions hitherto taken have not been relaxed; however, the last area proposed for cleansing will be quarantined immediately, and then this method will be given up for the present. It remains to gauge its usefulness; but this cannot be done until all the circumstances have been fully considered—a business on which the staff of the Department of Public Health are now beginning to be engaged.

July 10th

## VITAL STATISTICS.

VITAL STATISTICS OF LONDON DURING JULY, 1900.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 7·0 per 1000 of the population, estimated at 4,589,129 persons in the middle of the year. In the three preceding months the rates had been 6·2, 7·2, and 6·9 per 1000 respectively. The

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JULY, 1900.

(*Specially compiled for* THE LANCET.)

| SANITARY AREAS. | Estimated population in the middle of 1900. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living. | Deaths of infants under one year to 1000 births. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cholera. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.† | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | | |
| LONDON... ... ... ... ... ... ... ... | **4,589,129** | **13** | **1003** | **955** | **—** | **166** | **8** | **12** | **290** | **1** | **2448** | **7·0** | **—** | **161** | **25** | **93** | **167** | **—** | **41** | **2** | **437** | **926** | **2·6** | **5522** | **15·7** | **158** |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington ... ... ... ... ... ... ... | 130,104 | — | 32 | 9 | — | 3 | 1 | 1 | 12 | — | 58 | 5·8 | — | 8 | — | 1 | 2 | — | — | 1 | 15 | 27 | 2·7 | 137 | 13·7 | 184 |
| Kensington ... ... ... ... ... ... ... | 173,603 | — | 25 | 22 | — | 6 | 1 | — | 9 | — | 63 | 4·7 | — | 4 | 1 | — | 2 | — | 2 | — | 17 | 26 | 2·0 | 198 | 14·9 | 217 |
| Hammersmith ... ... ... ... ... ... ... | 110,203 | 2 | 20 | 14 | — | 5 | — | — | 4 | — | 45 | 5·3 | — | 2 | — | 1 | 2 | — | 1 | — | 11 | 17 | 2·0 | 116 | 13·7 | 140 |
| Fulham ... ... ... ... ... ... ... ... | 136,383 | 2 | 45 | 53 | — | 3 | — | — | 13 | — | 116 | 11·1 | — | 2 | 2 | 5 | 5 | — | — | — | 18 | 32 | 3·1 | 141 | 13·5 | 128 |
| Chelsea ... ... ... ... ... ... ... ... | 96,715 | — | 21 | 18 | — | 3 | — | — | 4 | — | 46 | 6·2 | — | 1 | — | 2 | 1 | — | 1 | — | 7 | 12 | 1·6 | 105 | 14·2 | 124 |
| St. George Hanover-square ... ... | 81,133 | — | 16 | 6 | — | 1 | 1 | — | 3 | — | 27 | 4·3 | — | — | 1 | — | — | — | — | — | — | 1 | 0·2 | 50 | 8·0 | 57 |
| Westminster ... ... ... ... ... ... | 51,657 | — | 12 | 9 | — | 2 | — | — | 4 | — | 27 | 6·8 | — | 1 | — | 1 | 1 | — | 1 | — | 2 | 6 | 1·5 | 66 | 16·7 | 241 |
| St. James Westminster ... ... ... | 21,457 | — | 6 | 4 | — | 1 | — | — | — | — | 11 | 6·7 | — | — | — | — | — | — | — | — | — | — | — | 22 | 13·4 | 118 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marylebone ... ... ... ... ... ... ... | 139,777 | — | 26 | 22 | — | 2 | — | 2 | 12 | — | 64 | 6·0 | — | 5 | — | 3 | 7 | — | 2 | — | 15 | 32 | 3·0 | 172 | 16·0 | 112 |
| Hampstead ... ... ... ... ... ... ... | 81,766 | — | 15 | 13 | — | 5 | — | — | 3 | — | 36 | 5·7 | — | 4 | — | 4 | 2 | — | — | — | — | 10 | 1·6 | 46 | 7·3 | 87 |
| St. Pancras ... ... ... ... ... ... ... | 245,651 | 3 | 49 | 44 | — | 16 | — | — | 17 | — | 129 | 6·8 | — | 5 | 1 | 5 | 9 | — | 3 | — | 22 | 45 | 2·4 | 325 | 17·2 | 152 |
| Islington ... ... ... ... ... ... ... ... | 351,541 | — | 80 | 44 | — | 14 | — | — | 19 | — | 157 | 5·8 | — | 10 | 1 | 9 | 10 | — | 2 | 1 | 9 | 42 | 1·6 | 351 | 13·0 | 116 |
| Stoke Newington ... ... ... ... ... ... | 35,718 | — | 14 | 5 | — | — | — | — | 2 | — | 21 | 7·7 | — | 1 | 1 | 1 | 1 | — | 1 | — | 2 | 7 | 2·6 | 34 | 12·4 | 71 |
| Hackney ... ... ... ... ... ... ... ... | 225,519 | 1 | 49 | 53 | — | 6 | — | 1 | 11 | — | 121 | 7·0 | — | 7 | — | 3 | 8 | — | 2 | — | 38 | 58 | 3·4 | 245 | 14·2 | 169 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Giles ... ... ... ... ... ... ... ... | 36,870 | — | 5 | 5 | — | 2 | — | — | 4 | — | 16 | 5·7 | — | — | — | 1 | 1 | — | 3 | — | — | 5 | 1·8 | 53 | 18·7 | 165 |
| St. Martin-in-the-Fields ... ... ... | 11,855 | — | 3 | 3 | — | — | — | — | — | — | 6 | 6·6 | — | — | — | — | — | — | — | — | 1 | 1 | 1·1 | 6 | 6·6 | 111 |
| Strand ... ... ... ... ... ... ... ... | 22,748 | — | 6 | 6 | — | 1 | — | — | 1 | — | 14 | 8·0 | — | — | — | 1 | — | — | 1 | — | 1 | 3 | 1·7 | 28 | 16·1 | 100 |
| Holborn ... ... ... ... ... ... ... ... | 29,188 | — | 14 | 5 | — | 2 | — | — | 4 | — | 25 | 11·2 | — | 4 | — | — | 1 | — | — | — | — | 5 | 2·2 | 60 | 26·8 | 351 |
| Clerkenwell ... ... ... ... ... ... ... | 66,007 | — | 12 | 14 | — | 1 | — | — | 3 | — | 30 | 5·9 | — | 4 | 1 | 5 | 3 | — | 1 | — | 7 | 21 | 4·1 | 95 | 18·8 | 194 |
| St. Luke ... ... ... ... ... ... ... ... | 40,655 | — | 10 | 6 | — | 1 | — | — | 2 | — | 19 | 6·1 | — | 1 | — | 1 | 1 | — | 1 | — | 7 | 11 | 3·5 | 68 | 21·8 | 119 |
| City of London ... ... ... ... ... ... | 26,922 | — | 7 | 4 | — | 1 | — | — | 1 | — | 13 | 6·3 | — | 1 | — | — | — | — | — | — | 1 | 2 | 1·0 | 35 | 17·0 | 176 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch ... ... ... ... ... ... ... | 120,641 | — | 20 | 33 | — | 6 | — | 1 | 14 | — | 74 | 8·0 | — | 8 | 1 | 5 | 2 | — | — | — | 34 | 50 | 5·4 | 180 | 19·4 | 209 |
| Bethnal Green ... ... ... ... ... ... | 128,831 | 1 | 24 | 40 | — | 3 | — | — | 12 | — | 80 | 8·1 | — | 6 | 3 | 5 | 5 | — | — | — | 6 | 25 | 2·5 | 197 | 19·9 | 136 |
| Whitechapel ... ... ... ... ... ... ... | 82,220 | 1 | 40 | 36 | — | 6 | — | — | 9 | — | 92 | 14·6 | — | 8 | 1 | 1 | 3 | — | 2 | — | 6 | 21 | 3·3 | 106 | 16·8 | 126 |
| St. George-in-the-East ... ... ... | 48,875 | — | 13 | 14 | — | 3 | — | — | 5 | — | 35 | 9·3 | — | 2 | 3 | 1 | 3 | — | — | — | 10 | 19 | 5·1 | 100 | 26·7 | 277 |
| Limehouse ... ... ... ... ... ... ... | 58,944 | — | 7 | 9 | — | 3 | — | — | 4 | — | 23 | 5·1 | — | 15 | 3 | 1 | 3 | — | — | — | 13 | 35 | 7·7 | 127 | 28·1 | 303 |
| Mile End Old Town ... ... ... ... | 113,781 | — | 30 | 19 | — | 8 | — | — | 11 | — | 68 | 7·8 | — | 10 | — | 1 | 12 | — | 1 | — | 24 | 48 | 5·5 | 192 | 22·0 | 272 |
| Poplar ... ... ... ... ... ... ... ... | 170,968 | — | 29 | 47 | — | 11 | — | — | 7 | — | 94 | 7·2 | — | 7 | — | 3 | 7 | — | 4 | — | 43 | 64 | 4·9 | 281 | 21·4 | 214 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Saviour Southwark ... ... ... | 23,854 | — | 9 | 4 | — | 1 | — | — | 2 | — | 16 | 8·7 | — | — | — | — | 3 | — | — | — | 4 | 7 | 3·8 | 41 | 22·4 | 269 |
| St. George Southwark ... ... ... | 60,597 | — | 19 | 9 | — | 1 | — | — | 4 | — | 33 | 7·1 | — | 3 | — | — | 1 | — | — | — | 5 | 9 | 1·9 | 99 | 21·3 | 178 |
| Newington ... ... ... ... ... ... | 125,178 | 1 | 23 | 38 | — | 3 | — | 1 | 6 | — | 72 | 7·5 | — | 6 | 1 | 3 | 8 | — | — | — | 12 | 30 | 3·1 | 160 | 16·7 | 151 |
| St. Olave Southwark ... ... ... ... | 10,909 | — | 5 | — | — | — | — | — | — | — | 5 | 6·0 | — | — | — | — | — | — | — | — | — | 1 | 1·2 | 8 | 9·6 | 45 |
| Bermondsey ... ... ... ... ... ... | 85,920 | — | 13 | 8 | — | 1 | — | — | 3 | — | 25 | 3·8 | — | — | 1 | — | 6 | — | 2 | — | 8 | 17 | 2·6 | 124 | 18·8 | 214 |
| Rotherhithe ... ... ... ... ... ... | 41,246 | — | 6 | 15 | — | 4 | — | — | 9 | — | 34 | 10·7 | — | 2 | — | 1 | 1 | — | — | — | 3 | 7 | 2·2 | 48 | 15·2 | 145 |
| Lambeth ... ... ... ... ... ... ... | 312,152 | — | 60 | 107 | — | 9 | 4 | 1 | 16 | — | 197 | 8·2 | — | 3 | 2 | 13 | 6 | — | 3 | — | 24 | 51 | 2·1 | 364 | 15·2 | 115 |
| Battersea ... ... ... ... ... ... ... | 178,100 | — | 38 | 19 | — | 6 | — | 2 | 5 | — | 70 | 5·1 | — | 4 | — | 1 | 9 | — | 2 | — | 24 | 40 | 2·9 | 168 | 12·3 | 187 |
| Wandsworth ... ... ... ... ... ... ... | 217,004 | 1 | 29 | 30 | — | 8 | — | — | 12 | — | 80 | 4·8 | — | 3 | — | 1 | 4 | — | 1 | — | 13 | 22 | 1·3 | 192 | 11·5 | 127 |
| Camberwell ... ... ... ... ... ... ... | 268,457 | 1 | 58 | 52 | — | 7 | 1 | 2 | 12 | — | 133 | 6·5 | — | 2 | — | 7 | 15 | — | 3 | — | 13 | 40 | 1·9 | 303 | 14·7 | 143 |
| Greenwich ... ... ... ... ... ... ... | 184,582 | — | 28 | 46 | — | 4 | — | — | 16 | — | 94 | 6·6 | — | 6 | 1 | 4 | 9 | — | 1 | — | 13 | 34 | 2·4 | 217 | 15·3 | 159 |
| Lewisham (excluding Penge) ... ... | 93,548 | — | 26 | 28 | — | 2 | — | 1 | 6 | — | 63 | 8·8 | — | — | — | — | 6 | — | — | — | 6 | 12 | 1·7 | 83 | 11·6 | 110 |
| Woolwich ... ... ... ... ... ... ... | 41,600 | — | 10 | 5 | — | 2 | — | — | 2 | — | 19 | 6·0 | — | 3 | — | — | — | — | — | — | 1 | 4 | 1·3 | 58 | 18·2 | 118 |
| Lee ... ... ... ... ... ... ... ... | 40,722 | — | 19 | 25 | — | — | — | — | — | — | 44 | 14·1 | — | 2 | — | 1 | 3 | — | — | — | — | 6 | 1·9 | 36 | 11·5 | 74 |
| Plumstead ... ... ... ... ... ... ... | 65,558 | — | 29 | 11 | — | — | — | — | 7 | — | 47 | 9·3 | — | 11 | 1 | 1 | 5 | — | 1 | — | 2 | 21 | 4·2 | 85 | 16·9 | 100 |
| Port of London ... ... ... ... ... | — | — | 1 | 1 | — | 3 | — | — | — | 1 | 6 | — | — | — | — | — | — | — | — | — | — | — | — | — | — | — |

* Including 15 cases of membranous croup.

† Including deaths from membranous croup.

rates were considerably below the average in Kensington, Westminster, Limehouse, Bermondsey, Battersea, and Wandsworth; while they showed the largest excess in Fulham, Holborn, Whitechapel, St. George-in-the-East, Rotherhithe, Lee, and Plumstead sanitary areas. Thirteen small-pox cases were notified during July, of which three belonged to St. Pancras, two to Hammersmith, and two to Fulham sanitary areas; 12 small-pox patients were admitted into the Metropolitan Asylums Hospitals during the month, and 11 remained under treatment on Saturday, July 28th. The prevalence of scarlet fever showed a slight decline from that recorded in the preceding months; among the various sanitary areas this disease was proportionately most prevalent in Stoke Newington, Holborn, Whitechapel, St. Olave Southwark, Lee, and Plumstead. The Metropolitan Asylums Hospitals contained 1804 scarlet fever patients at the end of July, against 1619, 1735, and 1788 at the end of the three preceding months; the weekly admissions averaged 210, against 174, 198, and 202 in the three preceding months. The prevalence of diphtheria showed a marked increase last month; the greatest proportional prevalence of this disease was recorded in Fulham, Bethnal Green, Whitechapel, Rotherhithe, Lambeth, and Lee sanitary areas. There were 1256 diphtheria patients in the Metropolitan Asylums Hospitals at the end of July, against 1131, 1402, and 1212 at the end of the three preceding months; the weekly admissions averaged 183, against 135, 172, and 151 in the three preceding months. The prevalence of enteric fever showed a further slight decline from that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in St. Pancras, Whitechapel, St. George-in-the-East, Mild End Old Town, Poplar, and Rotherhithe. The Metropolitan Asylums Hospitals contained 129 enteric fever patients at the end of July, against 208, 176, and 148 at the end of the three preceding months; the weekly admissions averaged 20, against 27, 24, and 21 in the three preceding months. Erysipelas was proportionally most prevalent in St. Giles, Holborn, Shoreditch, Whitechapel, Rotherhithe, and Plumstead sanitary areas. The 12 cases of puerperal fever included two in Marylebone, two in Battersea, and two in Camberwell sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the sanitary areas in which the patients had previously resided. During the four weeks ending July 28th the deaths of 5522 persons belonging to London were registered, equal to an annual rate of 15·7 per 1000, against 20·2, 16·6, and 14·8 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 6·6 in St. Martin-in-the-Fields, 7·3 in Hampstead, 8·0 in St. George Hanover-square, 9·6 in St. Olave Southwark, and 11·5 in Wandsworth and in Lee; the highest rates were 21·8 in St. Luke, 22·0 in Mile End Old Town, 22·4 in St. Saviour Southwark, 26·7 in St. George-in-the-East, 26·8 in Holborn, and 28·1 in Limehouse. During the four weeks of July 926 deaths were referred to the principal zymotic diseases in London; of these, 161 resulted from measles, 25 from scarlet fever, 93 from diphtheria, 167 from whooping-cough, 41 from enteric fever, two from simple continued fever, and 437 from diarrhœa. These 926 deaths were equal to an annual rate of 2·6 per 1000, against 1·8, 1·8, and 1·7 in the three preceding months. No death from any of these diseases occurred last month in St. James Westminster; in the other sanitary areas they caused the lowest death-rates in St. George Hanover-square, St. Martin-in-the-Fields, City of London, St. Olave Southwark, Wandsworth, and Woolwich, and the highest rates in Shoreditch, St. George-in-the-East, Limehouse, Mile End Old Town, Poplar, and Plumstead. The 161 deaths from measles were 74 below the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Holborn, Whitechapel, Limehouse, Mile End Old Town, Woolwich, and Plumstead sanitary areas. The 25 fatal cases of scarlet fever showed a decline of 46 from the corrected average number; the greatest proportional mortality from this disease occurred in Fulham, Stoke Newington, Bethnal Green, St. George-in-the-East, Limehouse, and Plumstead sanitary areas. The 93 deaths from diphtheria were 71 below the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in Fulham, Hampstead, Clerkenwell, Shoreditch, Bethnal Green, and Lambeth. The 167 fatal cases of whooping-cough were slightly in excess of the corrected average number; this disease showed the highest proportional fatality in Mile End Old Town, St. Saviour Southwark, Newington, Bermondsey, Lewisham, and Plumstead sanitary areas. The 43 deaths referred to "fever" exceeded by ten the average number in the corresponding periods of the ten preceding years; among the various sanitary areas the "fever" death-rate was highest in Stoke Newington, St. Giles, Strand, Whitechapel, Poplar, and Bermondsey. The 437 fatal cases of diarrhœa showed a decline of 318 from the corrected average number; this disease was proportionally most fatal in St. Luke, Shoreditch, St. George-in-the-East, Limehouse, Mile End Old Town, and Poplar sanitary areas. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during July was nearly 35 per cent. below the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 158 per 1000. The lowest rates of infant mortality were recorded in St. George Hanover-square, Hampstead, Stoke Newington, Strand, St. Olave Southwark, and Lee; and the highest rates in Westminster, Holborn, St. George-in-the-East, Limehouse, Mile End Old Town, and St. Saviour Southwark sanitary areas.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following qualified candidates for the Naval Medical Service have been appointed to be Surgeons in Her Majesty's Fleet:—George Ross, John Scarbrough Dudding, William Bastian, Charles Thomas Baxter, Robert William Basil Hall, Henry Cyril Adams, Llewellyn Lindop, Noel Hugh Harris, William Ernest Gribbell, Hardy Vesey Wells, John Marcus Hobson Conway, Robert Bernard Scribner, John Whelan, Arthur Izod Sheldon, John Verdon, and Cecil Rodney Rickard.

### IMPERIAL YEOMANRY.

4th Battalion: The appointment of R. Mervyn Wilson as Medical Officer, with the temporary rank of Captain, which was notified in the *London Gazette* of Feb. 2nd, 1900, is cancelled.

### ROYAL ARMY MEDICAL CORPS.

The undermentioned Majors to be Lieutenant-Colonels:—George Holden Sylvester, William John Macnamara, Daniel O'Sullivan, Edwin Oswald Milward, Charles Rolleston Woods, John Oldfield Greatrex Sandiford, Robert Lindsay Love, Henry Walker Murray, Michael William Kerin, Alfred Peterkin, Edward Lewis Maunsell, William Heffernan, Ronald William Edward Huntly Nicholson, James Grove White Crofts, William Dugdale, Delaware Lewis Irvine, Edward Russell Cree, and Denham Francis Franklin.

### INDIA AND THE INDIAN MEDICAL SERVICES.

The following appointments to the Indian Medical Service are submitted for Her Majesty's approval:—To be Lieutenants: James Drummond Graham, Cuthbert Allan Sprawson, Maxwell MacKelvie, William Lapsley, William Henry Cazaly, Percy Alfred Browne, Walter Valentine Coppinger, Alfred Spitteler, James Charles Stewart Oxley, Henry Richard Macknee, Leonard Joseph Montague Deas, William Mitchell Houston, William David Acheson Keys, George Joseph Grafton Young, James Good, Alexander Chalmers, William Gavin Hamilton, and Samuel Robert Godkin.

### ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain J. W. Ellis to be Surgeon-Major.

### VOLUNTEER MEDICAL STAFF CORPS.

The Manchester Companies: Robert William Beesley to be Surgeon-Lieutenant.

### VOLUNTEER CORPS.

*Artillery:* 1st Aberdeenshire: Henry McIlree Williamson Gray to be Surgeon-Lieutenant. *Royal Engineers* (Volunteers): 1st Hampshire: Surgeon-Lieutenant A. B. Wright resigns his commission. 1st Newcastle-on-Tyne: Surgeon-Captain H. H. Gourley, from the 4th Durham (Western

Division, Royal Garrison Artillery), to be Surgeon-Captain. *Rifle:* 1st Volunteer Battalion the Royal Warwickshire Regiment: Arthur Roscoe Badger to be Surgeon-Lieutenant. 4th Volunteer Battalion the Devonshire Regiment: Surgeon-Lieutenant F. B. Manning to be Surgeon-Captain. 2nd Volunteer Battalion the Princess of Wales's Own (Yorkshire Regiment); Surgeon-Captain S. H. Snell, from 1st Essex Volunteer Artillery, to be Surgeon-Captain. 5th Volunteer Battalion the Cheshire Regiment: Edward John Walter Carruthers to be Surgeon-Lieutenant.

### TRANSVAAL WAR NOTES.

The Southampton Town Council have decided to confer the freedom of the borough upon Mr. Robert E. Lauder, F.R.C.S., L.R.C.P. Edin., and Mr. W. Prior Purvis, M.D., B.Sc., M.S. Lond., F.R.C.S. Eng., L.R.C.P. Lond., of the Southampton Volunteer Ambulance Corps who have recently returned from South Africa.

Major Dodd, R.A.M.C., and Lieutenant Phipps, R.A.M.C., have left South Africa for England.

Major Caldwell, R.A.M.C., and Captain Moore, R.A.M.C., have arrived in the *Tagus*.

We understand that commissions in the Royal Army Medical Corps will be granted to those of the civilian surgeons serving in South Africa who may care to accept them.

In a passage in a private letter to the *Times* Special Correspondent dealing with De Wet's attack on Honing Spruit published in the *Times* of August 14th the writer pays what is evidently a well-deserved tribute to the services rendered by Mr. G. L. Cheatle, F.R.C.S., and concludes with the following words: "Imagine what Smith and I should have done with them (the wounded) if Cheatle had not happened to be on his way home by that train. He is a very gallant fellow and did well."

### HOW TO POPULARISE OUR ARMY.

We would direct the attention of our readers to an article under the above heading in the August number of the *Pall Mall Magazine*. It strikes us as being written from a common-sense point of view by one who has had some practical experience to guide him in what he has to say. To take a single point, soldiers' barrack-rooms are very badly lighted. We do not pretend to agree with all the author has advanced, nor, indeed are we concerned with several of the points discussed, but some of the remarks on soldiers' barrack-rooms, lavatories, cubicles, dining- and recreation rooms, and on hospital stoppages are of a practical character and well worth reading.

### DEATHS IN THE SERVICES.

Surgeon-General Daniel James O'Callaghan, on August 12th, aged 85 years. He joined the Honourable East India Company's service in January, 1842, was employed in the Field Hospital of the Army of the Sutlej with the 49th Bengal Native Infantry, and also in the Chinese war of 1860 (medal). He acted as surgeon in chief medical charge of Foot Artillery at the seige of Delhi, and was present at the storming and capture of the city (medal and clasp). He retired in 1872. Surgeon-General O'Callaghan, who was the father-in-law of Sir Henry Irving, commenced his public career in the Royal Navy.

The Edinburgh Company of the Volunteer Medical Staff Corps completed a successful month's training at Aldershot on August 11th and were dismissed. Owing to the large number of troops in camp the services of the company have been most useful, and it is to be regretted that more such units are not formed.

# Correspondence.

"Audi alteram partem."

## HALLUX RIGIDUS.

*To the Editors of* THE LANCET.

SIRS,—Mr. Warrington Haward, in a clinical lecture published in THE LANCET of July 28th, refers on p. 242 to a case of hallux rigidus. I should like to refer him to a note on this condition which was published in Vol. I. of the *British Medical Journal* for 1887, p. 726, giving what I believe to be the first account of the disease. Further experience while acting as resident medical officer at the General Post Office in London showed me that the condition was fairly common among the telegraph messengers and was due to the wearing for the greater part of the 24 hours of boots with very stiff "waists," thick soles, inelastic uppers, each boot often weighing one and a half pounds. The result in a growing boy was a permanent painful stiffness of the metatarso-phalangeal joint of one or both great toes. I have also found excision of the metatarsal head to be the only means of cure, but, contrary to Mr. Haward's experience, have found in at least two instances eburnation of the dorsal half of the metatarsal head. As bearing on the disability the condition may cause well into adult life I was called not long ago to see a man, aged 40 years, who presented well-marked hallux rigidus of the left side; so great was the difficulty in rising on to the toes of the left foot that one day in breasting a steep hill, the right leg leading as usual, he ruptured his *right* plantaris tendon with the classical symptoms. All effort in walking had for years been made with the right leg. Short of operation I found that a cure could be affected in recent cases by cutting transversely through the "waist" of the offending boot down to the welt. By restoring thus the possibility of flexion to the foot affected the painful rigidity of the great-toe joint rapidly passed off.

I am, Sirs, yours faithfully,
REGINALD H. LUCY, F.R.C.S. Eng.

Plymouth, August 9th, 1900.

## "PREPUTIAL CALCULI."

*To the Editors of* THE LANCET.

SIRS,—In reference to your annotation on this subject in THE LANCET of August 4th, I may say that I have in my possession a specimen consisting of 28 faceted fragments weighing nearly one ounce and an eighth which I removed from a Chinaman a few years ago. The fragments were admirably apposed, forming a roundish lump of the size of a large alley, which lay behind a phimosed prepuce. The external surface was a little rough; the colour was ash grey. The material turned out to be calcium carbonate, calcium phosphate, and organic matter. It had caused considerable irritation, ulceration, and suffering. After a small incision I was able to extract it piecemeal and the man made a rapid convalescence.

I am, Sirs, yours faithfully,
GERALD S. WALTON, M.B., C.M. EDIN.

Sutton, Surrey, August 8th, 1900.

## "THE TREATMENT OF CHRONIC GLAUCOMA."

*To the Editors of* THE LANCET.

SIRS,—In the account of the discussion, at the meeting of the British Medical Association, on Mr. Cross's paper on the Treatment of Chronic Glaucoma, published in THE LANCET of August 11th, the following remarks are attributed to me: "Mr. Bower was in favour of prolonged treatment with eserine and cocaine. His experience of iridectomy was that in many cases the disease progressed." As this is very far from what I really did say I trust you will allow me to correct what would otherwise give rise to an entirely erroneous impression.

It is true that I mentioned the case of a woman who had been under my care for at least six years where glaucoma had been kept in abeyance during the whole of that time by the use of myotics. She always refused operation, but said she would consent to iridectomy if the sight should get worse, which it has not done up to the present time. She had already lost one eye from glaucoma, which naturally made one not over-anxious to operate on the remaining eye if it could be avoided. I was careful, however, to state that such cases are rare and should never deter us from advising an operation in chronic glaucoma when once the diagnosis is established.

In reference to iridectomy, what I said was that it would be interesting to know what percentage of cases were permanently cured after operative measures, as my impression was that eventually after a longer or shorter period of time—it might be years—in the greater number of cases which might have been regarded as cured the ultimate end was gradual deterioration of vision terminating in blindness. In all but a few exceptional cases I invariably recommend

iridectomy in chronic glaucoma provided the central vision is fairly good and there is not too much contraction of the field, but one is sometimes, perhaps, inclined to rely for too long a time on myotics in the very early stage of the disease, lest after the performance of iridectomy with its possible resulting astigmatism the sight might be left rather worse than it was before the operation and so cause the patient to be disappointed with the result and dissatisfied with the surgeon.

Mr. Cross's suggestion to perform sclerotomy rather than iridectomy in the very early stage of the disease might, I think, in some cases be advisable, as there would probably be less disturbance of vision from that operation than where a large piece of iris had been removed, and iridectomy could always eventually be performed if necessary. I should not have troubled you with this letter were it not that the operative treatment of chronic glaucoma is not now, as far as I am aware, open to question, so that the remarks erroneously attributed to me are entirely contrary to what is now a well-established fact.

I am, Sirs, yours faithfully,

Gloucester, August 12th, 1900. E. DYKES BOWER.

## THE COVENTRY DISPENSARY.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of August 4th I notice a report of a discussion at the Deontological Congress in Paris where a Mr. Adolphe Smith is reported to have said that a combination of the local profession against certain "ostracised" practitioners in Wolverhampton and Coventry failed owing to the support these received from Birmingham consultants. I should like to know what are the facts which support this statement or whether there is any inaccuracy in the report. I have never heard of any "ostracised" practitioners in Wolverhampton nor do I think this term is rightly applied to the staff of the Coventry Dispensary. I have never been asked to support the profession in either town against any individuals nor do I know that a request of this kind has been brought before any of our medical societies by either of these towns. Such support was asked by another neighbouring town and at a meeting of the Birmingham and Midland Counties Branch of the British Medical Association it was agreed to, and I believe the boycott had the desired effect.

If I am not mistaken Mr. Adolphe Smith is the same gentleman who three years ago made certain statements about the profession in Birmingham which he failed to substantiate when challenged. So far as my knowledge goes his present allegations are equally baseless.

I am, Sirs, yours faithfully,

Llandrindod Wells, August 10th, 1900. ROBERT SAUNDBY.

*** We have every reason to believe that Mr. Adolphe Smith knows what he is talking about. Some three years ago Dr. Saundby wrote a letter in our columns containing offensive allusions to our Commissioner's work. If this letter is what he now refers to as a challenge it is well that he should understand that it was not answered either by our Commissioner or by ourselves because it was rude.—ED. L.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Three New Hospitals.*

THE Assistance Publique will be able before the end of the year to open three new hospitals for children built to replace the Trousseau Hospital which will be pulled down as soon as certain legal formalities have been complied with (*après désaffectation*). The buildings are almost complete and the children will be admitted as soon as the plaster is dry. The new hospitals are built of brick in accordance with all the most modern ideas and contain altogether 700 beds. Their names are as follows: the Herold in the Place de Danube, the Trousseau in the Rue Michel Bizot, and the Bretonneau in the Rue Carpeaux. Including the Hospital for Sick Children in the Rue de Sèvres, formerly called the Hôpital de l'Enfant-Jésus, Paris will have four hospitals for children at convenient distances apart, so that mothers will not have to go very far for consultation. The last-mentioned hospital has been considerably enlarged and last year some isolation wards were built which are looked upon as models of construction and fitting. Paris will henceforth be able to offer opportunities for the study of children's diseases such as few other towns in the world can afford.

*The Monument to Pelletier and Caventou.*

A monument in memory of Pelletier and Caventou, the two discoverers of quinine, has just been erected. It stands in the Boulevard Saint Michel at the corner of the Rue de l'Abbé de l'Epée, close to the School of Pharmacy, and was unveiled on August 7th in great state at 10 o'clock in the morning. M. Marty, a member of the Academy of Medicine, handed over the monument to the town of Paris and M. Edmond Lepelletier returned thanks in the name of the Municipality. The two chemists are represented as standing upon one pedestal. The expenses were defrayed by a subscription among the members of the Pharmaceutical Section of the Academy of Medicine and by the Syndicate of Pharmacists.

*The Relations between the Thyroid Gland, the Hair, and the Genital Organs.*

M. Gautier, who has been pursuing his researches upon organic arsenic, communicated his latest results to the Academy of Medicine at the meeting held on August 7th. Normal blood contains very little arsenic or iodine, but it is otherwise with menstrual blood, except the menstrual blood of anæmic patients. At every period the thyroid gland discharges nearly the whole of its arsenic. Iodine is four and half times more abundant in menstrual blood than in normal blood. Both elements have their origin in the thyroid gland which establishes a relation between this gland and the menses and is at the same time a confirmation of the relation anciently said to exist between the thyroid body and the genital organs. In the lower animals the arsenical nucleins of the thyroid increase the growth of the hair and this increase is specially marked between the rutting periods. In men these nucleins are devoted to the growth of the hair and beard, not having to be eliminated by the menses as in women. Women treated with the cacodylates show an increased growth of the hair and the menstrual flow becomes more abundant. In tuberculous patients the arsenic and iodine may disappear from the thyroid, and hence affections of the hair and skin in such patients can be improved by administering these elements. These facts explain the favourable influence of arsenic upon cutaneous affection and upon the growth of the hair. Replying to the objection of M. Fournier, who said that he had never seen a case of cure of prurigo gestationis, or for the matter of that of any skin disease by arsenic, M. Gautier said that he never used mineral arsenic but only arsenic in the form of the cacodylates.

August 14th.

## BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Statistics of Diabetes.*

DR. GEORG HEIMANN of Berlin has published in the *Deutsche Medicinische Wochenschrift* some interesting statistics of the frequency of diabetes in Prussia. The number of deaths from this disease in Prussia as given by the Royal Statistical Office was 12,929 during the period from 1877 to 1897 and of these 4889—37·8 per cent.—were deaths of females. On an average 378 persons died from diabetes annually from 1877 to 1886, of whom 237 were males and 141 were females. From 1887 to 1896 the average annual number of deaths was 796, 494 being males and 302 being females. In 1897 the deaths were 1186, 735 being males and 451 being females. In 1877, 1887, and 1897 the death-rates of males per 100,000 of the male population were 1·0, 2·4, and 4·7 respectively, the corresponding death-rates for females per 100,000 of the female population being 0·7, 1·6, and 2·8 respectively. The increase of mortality from diabetes is due probably to a better knowledge of the disease, the diagnosis being made now in a greater number of cases. There are certainly many more cases than are recorded in the official tables owing to the deficiency of death certificates in country places, and it is very significant that of 1186 deaths

in 1897 there were 823 reported from towns and 363 from the country. No figures are available showing how many patients actually suffer from diabetes; the Statistical Office is only able to record those under observation in hospitals, sanatoria, &c., as the number of patients treated at home is of course not known. In institutions of the above-mentioned kind 7285 cases of diabetes were admitted from 1877 to 1897, the annual totals rising steadily from 117 in 1877 to 895 in 1897. Of 1000 hospital patients there were 0·5 diabetic in 1877, 0·7 in 1887, and 1·4 in 1897. The proportion of males among the cases of diabetes for the 21 years from 1877 to 1897 was 73·6 per cent. Of all the diabetic patients in the hospitals 1410 (19·3 per cent.) died, the disease being more fatal in women with a death-rate of 22·6 per cent. than in men with a death-rate of 18·2 per cent. As regards age it is stated that persons under 30 years were relatively seldom affected (about 18 per cent.), those upwards of 40 years being the majority (70 per cent.). Of the hospital patients the youngest was six years and the oldest was 80 years of age. The death of one child aged three months was recorded. As regards the profession or occupation of the patients the greater number of them were engaged in trade or commerce and the disease occurred relatively often among the well-to-do. The complications recorded and the number of cases in which they presented themselves were as follows: tuberculosis in 56, Bright's disease in 21, cataract in three, carbuncle in 40, and gangrene in 101; 36 of the cases of gangrene died. Of the 895 hospital patients 165 died, 35 of them from coma. In the Prussian army from 1893 to 1897 there were 130 cases of diabetes with 27 deaths.

*Plague in Hamburg.*

It has been officially announced by the Hamburg authorities that a steward on board a steamer which recently arrived in that port was found to be suffering from plague and was removed to the Eppendorf Hospital, where he died. No other cases have hitherto appeared. The steamer has been disinfected and is in quarantine.

*The Military Expedition to China.*

The care of the health of troops embarked for China has been an object of great solicitude to the military authorities, and all the officers have received a small pamphlet containing hygienic rules to be observed on board ship and in the Far East. The pamphlet is written in a style intelligible to ordinary readers, and the officers have been ordered to give their men instruction in the subjects dealt with in it. This is the more necessary as the China expedition is the first in which German troops have been engaged on a large scale in a war out of Europe. The troops have been provided with different uniforms for the hot and cold season; the summer uniform consists of khaki and a straw hat, the winter uniform of stout cloth and furs. With a view to prevent scurvy and similar diseases great quantities of preserved vegetables and anti-scorbutics have been sent to China. Apparatus for the sterilisation of drinking-water by boiling and by bromine, as suggested by Dr. Schumberg, has also been provided. Army medical officers specially trained in bacteriological work have been sent with the army and it will be their duty not only to examine the food and the drinking-water, but also to investigate any conditions which might have a significance in connexion with an outbreak of disease. The army medical corps is, of course, much more numerous than in an European war, one army medical officer being sent for each 120 men. The special medical staff consists of a bearer company and of four field hospitals for 200 patients each. For the erection of stationary hospitals 127 tents and 15 barracks have been sent with all the necessary staff and material. Two hospital ships have been chartered from the North German Lloyd for the conveyance of sick and wounded soldiers to Europe.

August 13th.

# Obituary.

ERNEST ARTHUR TAYLOR STEELE, L.R.C.P. LOND., M.R.C.S. ENG.

MR. E. A. T. STEELE of Byford House, York-road, Southend, died there on July 25th after a painful illness of some 10 weeks' duration. He received his professional education at University College, Liverpool, where he had a highly successful career as a student, and in 1888 he took the diplomas of L.R.C.P. Lond. and M.R.C.S. Eng. After being house surgeon under Sir W. Mitchell Banks at the Liverpool Royal Infirmary he became medical officer at the Dispensary, Worksop. He then settled in Plaistow, Essex, where he soon showed his talent for surgery and gynæcology, and chiefly through his exertions St. Mary's Children's Hospital was gradually built up from a very small beginning to the successful institution it has now become. He also found time in the midst of a very busy practice to act as honorary medical officer to the Plaistow Maternity Charity and District Nurses' Home, and the loss of his ever ready help and skill was deeply felt when he was obliged in 1897 to relinquish his practice in Plaistow owing to failing health and seek less onerous work at Southend. Here he soon built up a practice and gained many friends. In spite of increasing weakness and pain he battled on bravely for three years more, working to the last and only giving up when he was no longer able to move about. All who were brought into contact with him recognised his talent and capacities and deplore his death at the early age of 34 years. He leaves a widow and one child. Two accounts of successful operations performed by him appeared in THE LANCET in 1899, one being for the removal of suppurating cysts of both ovaries and the other for strangulated inguinal hernia.

# Medical News.

VACCINATION AWARD.—Mr. J. R. White, M.B. T.C.D., L.R.C.S. Irel., of Kelvedon Hatch, Brentwood, has been awarded the vaccination grant for the sixth time.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—At the recent examination the following scholarships were awarded:—Lawrence scholarship and gold medal, C. J. Thomas; Brackenbury medical scholarship, A. T. Pridham; Brackenbury surgical scholarship, C. E. West; senior scholarship in anatomy, physiology, and chemistry, M. E. Waterfield; entrance scholarships—junior, I. D. Clements-Smith and K. S. Wise (equal), Jeaffreson exhibition, M. B. Reichwald, and Shuter scholarship, H. H. Dale; and Kirkes scholarship and gold medal, A. E. H. Thomas. The next examination for entrance scholarships will take place on Sept. 26th.

THE OFFICE OF CITY ANALYST, MANCHESTER.—Rates tend to rise and city councillors in their occasional attempts to reduce expenses are apt to lay hands where possible on the modest gains of the professional men employed in municipal work. It was therefore moved at the last meeting of the Manchester City Council "That a committee be appointed to inquire into the administration of the city analyst's department with a view to its reorganisation on a more economical basis." All personal feeling was disclaimed and it was acknowledged that Mr. Estcourt did his work well. He was appointed in 1873 at a salary of £150 a year, and in 1882 it was arranged that he was to have in addition a fee of 7*s.* 6*d.* per sample on all samples received for analysis beyond 200 per annum, and later still it was decided that on all samples beyond 800 per annum he should receive 5*s.* per sample. Last year these fees came to £470, and in addition to this the corporation paid Professor Delépine £436 in fees for bacteriological analysis. Fees were also paid by the waterworks department for analysing the town's water-supply. It was decided to appoint a special committee to inquire into the whole subject of the analytical work of the corporation, of the employment by the corporation of its own officials, and to consider the question of the appointment of a city bacteriologist. As Mr. Alderman McDougal held, there was no city analyst, except for matters under the Food and Drugs Act, and no city analyst department. Mr. Estcourt's appointment could only be terminated with the approval of the Local Government Board "and that would not be easily obtained." He further stated that while Manchester paid an average of 7*s.* 1*d.* per sample Salford paid 7*s.* 4*d.*, but Liverpool paid 13*s.*, and in some towns the fees averaged as high as a guinea per sample. It may be that the council, notwithstanding its anxiety to reduce the cost of applied science, had better bear the ills it has than fly to others that it knows not of.

# THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

## EXTRAORDINARY GENERAL MEETING HELD AT THE HOSPITAL, QUEEN SQUARE, W.C.,

### ON SATURDAY, AUGUST 11, 1900.

MR. PEARMAN—I beg to move that Mr. George Russell take the chair.

SIR GERALD FITZGERALD—I have much pleasure in seconding the resolution.

[Carried unanimously.]

MR. GEORGE RUSSELL took the chair.

THE CHAIRMAN—Ladies and Gentlemen, my first duty is to call upon the Secretary to read the notice convening the Meeting.

[The Secretary read the notice convening the Meeting.]

THE CHAIRMAN—Ladies and Gentlemen, my next duty is to read a letter from the Lord Chancellor, and nobody can be more sensible than I am how greatly it would have been to our advantage if the Lord Chancellor, who is a valued member of our Board of Management, had been able to preside, but on being applied to to take the chair he writes to Mr. Rawlings from the House of Lords as follows:—"Dear Sir, I am very sorry to say that I shall not be able to take the chair next Saturday. I am due to arrive at Homburg on Thursday." Then he concludes by saying that he had hoped it might be possible that his holidays would have been delayed for another week, in which case he would have come to the meeting and taken the chair with pleasure, but as it was he could not delay further as he was bound to be with his wife at Homburg. I think it only due to Lord Halsbury's great position in the world that his expression of good-will towards the hospital and readiness to serve it at this rather critical moment should be made known. I now begin to open the proceedings, and in the first place I have to call the attention of my hearers to the fact that by our Rule No. 6, Section 3, members and governors have a right to speak, but only governors are allowed to vote, and that by Rule 8 of the same section only governors who have been governors for the space of three months are allowed to vote. It will be observed that there is a slight distinction there—only governors to vote and speak, subscribers can speak but not vote. But under existing circumstances, though I have not power to do it myself as Chairman, I will take the indulgence of the meeting for any member of the medical staff who may happen to be here to-day in case he should wish, although not a governor, to be allowed to address the meeting. Of course he would not be able to vote even then. Members of the staff who are governors are disqualified from voting by Rule 10, Section 3, but in case any member of the medical staff should wish to be heard in his own behalf, or in behalf of his colleagues, I would appeal to the meeting to permit him to address it. I have no reason to believe that anybody wishes to intervene, but in case it turns out that a member of the medical staff should so wish to be heard, I will ask the indulgence of my hearers to give him an audience. Some apologies are necessary I feel to those who have been good enough, I fear at some inconvenience, to respond to this invitation for the period of the year at which the meeting is convened, but really the responsibility does not rest with us as a Board of Management, but with the medical staff. The statement to the governors dated May, 1900, was really only issued on June 16th. The Board's reply was issued on July 24th, and the fact that it was issued as soon as that shows that we have not been wasting our time, because the interval has been occupied by the inquiry conducted by the special committee which was appointed to look into the domestic condition and the administration of the hospital. We thought it our duty to hold that inquiry before we replied to the governors in order that we might have a definite answer to the allegation of mismanagement to place before the governors when we addressed them. That accounted for the time up to July 24th, and the letter of the medical staff in the *Times* of July 28th was the first statement by the staff that the differences between them and the Board of Management were irreconcilable. When that was publicly announced we felt that it was impossible for us to delay taking some practical notice of it. We should have felt that we were to blame and that the governors of the hospital to whom we are ultimately responsible would justly hold us to blame if we allowed any time to be wasted between that declaration of an irreconcilable difference of opinion and the summoning of a meeting. We were bound, we considered, in the interests of the hospital to take the very earliest opportunity open to us for calling the governors, or such of the governors as would consent to be called together, for the purpose of hearing this question argued out. The board meeting was summoned on the very day as that on which the declaration of the medical staff appeared in the *Times*, and it was summoned for the earliest day possible, and for the meeting of the governors again the earliest day possible, was decided upon at the board meeting. To-day, therefore, is the very first day in which, conformably with the rules of the hospital, this special meeting of the governors could have been called together. It will be observed by those ladies and gentlemen who looked into these proceedings in their earlier stages that two entirely distinct questions are submitted to it for decision. I will label them, for the sake of clearness, Question A and Question B. Question A is a question whether the rule of the hospital, No. 5 of Section 5, should be altered so as to allow the medical staff to sit on the Board of Management. Question B is a question whether there shall be a further inquiry into the actual condition and management of the hospital as it now is. We considered these two questions to be of very different importance, and for convenience' sake I will invert their order and deal with Question B first—the question whether it is necessary to hold a further inquiry into the actual condition, working, nursing, management and so forth of the hospital. I have had the honour of a seat on this board for exactly ten years, and during those ten years I have by no means considered my duty discharged by attendance at board meetings or meetings of the House Committee. I have made it during all those ten years a practice to visit systematically the wards of the hospital, and I think—there may be exceptions of course with regard to times when one is absent from London—that I have been almost always a weekly visitor to the hospital during all those ten years. I have cultivated what I think I may call friendly relations with our patients of all classes and conditions past and present. For I have made it a point, whenever circumstances permitted, to keep up some sort of knowledge of those patients who have left us in a more or less restored condition, partly with the view of helping them in the altered conditions of their subsequent life, and partly on account of the genuinely friendly feelings engendered by a constant intercourse with them during the time that they resided in our wards. In addition to that, I proposed the other day, as it is the wish of my colleagues, the appointment of a special sub-committee of inquiry into the internal condition of the hospital. That inquiry may really be called exhaustive. We examined with great care—and be it remembered that we had in the person of Mr. Pearman a gentleman on that committee well versed in the conduct of legal business—all the responsible authorities of the hospital from secretary-director and lady-superintendent down through the sisters, stewards and the cook—the latter a by no means unimportant element in such an inquiry as we were then conducting. We also paid surprise visits to the wards, the kitchen, the offices and the basement, and gave rather special attention to the actual condition of the food as it was sent up to the wards. The total result of our experience—in my case an experience prolonged for ten years—is that, in our opinion, no further inquiry is necessary. It would be ridiculous to say that the arrangements of any hospital were not susceptible of some improvement. I cannot conceive that anybody who has any experience of house-keeping on a large or small scale would maintain that it was possible to keep every detail of a very large establishment such as this in absolutely perfect and ideal order from week to week over a period of ten years, but such faults as we did discover may fairly be written down as infinitesimal, and as well within the power and the will of the Board to remedy the moment they are brought to the Board's notice. It is to be borne in mind that a further inquiry if conducted by a legal authority from outside would be a costly business, and during this process would more or less interfere with the ordinary work and every-day life of the hospital. But these considerations, although they are for the Governors to bear in mind, would not affect our view as to the desirability of holding an inquiry. If the governors think that further inquiry is necessary in the interests of the patients or for the satisfaction of their own minds on the subject, I am instructed by my colleagues, the Board, to mention that we should offer no kind of opposition, and we should stipulate only that the inquiry should be conducted by an impartial authority and by somebody well accustomed to the sifting of evidence. Granted those conditions, we should be ready to agree to render all the assistance in our power to make the inquiry exhaustive and complete, being well assured in our own consciences that this hospital has nothing to fear from the closest examination or the widest publicity. So much for Question B—the question as to whether further inquiry into the affairs of the hospital is necessary. I now come in the inverse order to Question A, and with regard to that the attitude of my colleagues who are on the Board of Management, and myself is extremely different from the attitude we take with reference to a further inquiry into the state of the hospital. We feel convinced that the demand of the medical staff for admission to the Board must be resisted. It is, as you know, at present forbidden by Rule 5 of Section 5. That rule was passed twenty years ago, and I am informed—I think it was before the time of my connection with the hospital—that Mr. Chandler, whose name must always be mentioned with gratitude and with honour within these walls as one of the founders of this institution, was a party to the passing of this rule by which the medical officers of this hospital were excluded from the Board of Management. The rule under which they are excluded from or rendered incapable of sitting on the Board of Management is, I am told, in force also at the London Hospital, at St. Bartholomew's, at the Middlesex, at the Brompton Consumption Hospital,[1] at the London Fever Hospital, and at the City of London Chest Hospital. It therefore cannot be argued that a rule obtaining in such hospitals as those is unique or even exceptional. The reasons on which the Board found themselves in their firm opposition to this demand may briefly be stated as follows: We consider that the functions of the medical staff which

[1] Dr. J. E. Pollock, in the *Times* of August 14th, points out that this is a mistake so far as the Brompton Consumption Hospital is concerned.—ED. L.

are well defined in the rules may call for the exercise of discipline on the part of the Board, and where that is the case it would be obviously—to put it in the very mildest way—a very inconvenient arrangement that gentlemen whose conduct might be called in question should be themselves the members of the tribunal to which that question would have to be submitted. Amongst matters possibly affecting the staff which might from time to time be brought by way of the exercise of discipline before the notice of the Board of Management, I may mention, just by way of illustration, the following: The question of regularity of attendance on patients according to the rules; the question of leave of absence and provision for professional substitutes during absence; the admission of patients according to the rules—that is the admission only of such patients as those who are suitable for treatment at this hospital. In passing, I may say that that point is liable perhaps to some amount of misconstruction. It may very properly be urged that a medical man is the best judge as to whether a patient's state is such as to make it desirable to admit him to the hospital or not. Yes, that is so, but we are hemmed in in one direction by a legal restriction. I believe I am right in saying—of course I speak in the presence of lawyers—that the matter is an exceedingly perilous one in connection with the powers of the Lunacy Commission to harbour in any building, public or private, any person of unsound mind unless the house in which he is harboured is a duly licensed house. Cases might arise where the person applying for admission here, or where friends applied for admission for him, was a person of unsound intellect. In that case by our absolute rule we are forbidden from admitting such a one into the hospital. Although his condition might be such as to justify a medical man in saying that he would be the better for the treatment provided here, we should be legally restricted from admitting such a one into our wards, and should be obliged to refer such a case through the relations to the authorities properly responsible for the custody of those mentally infirm. And then, again, there is the important question of complaints made by patients against the medical staff. I am not saying that such complaints are made—that is not my business at the present moment to say whether they are or are not made, but very obviously complaints might arise. There might be questions of neglect in which a patient might feel himself aggrieved and in which he would be fully justified in appealing to the Board of Management, and we feel that it would be wholly inconsistent with the notions of order and propriety that medical men whose conduct was called in question in such a matter as that should be judges in their own cause. It seems to me obvious that gentlemen whose conduct might be called in question cannot properly sit on the tribunal by which the charge has to be investigated. But, although we feel very strongly that this direct admission to membership of the Board would be an alteration fundamental and vital in the rules and constitution of the hospital which we cannot be parties to, we still feel very strongly, and I welcome this opportunity of publicly stating it, that there is the greatest value in a free interchange of opinion between the medical staff and the Board of Management. For that purpose, and to promote that free interchange of opinion, the Medical Committee exists. If I am rightly informed, every member of the staff is a member of the Medical Committee. Therefore, there can be no doubt that the sentiments, views, and opinions of the medical staff will be adequately represented by the Medical Committee, and that free communication between the Medical Committee representing the staff, and, indeed, consisting of the staff and the Board of Management, is by us both desired and encouraged. Be it borne in mind that no medical matter—no matter affecting the food, treatment, or nursing of the patients—is ever dealt with by the Board of Management without reference to the Medical Committee, and all the representations of the Medical Committee, whether invited or volunteered, are invariably regarded by the Board with a most careful courtesy and careful consideration. But the Board of course must reserve to itself the power of dealing in the long run on their own responsibility with cases as they arise, but there has been no instance, so far as I know of, when any recommendation of the Medical Committee has been disregarded or treated lightly. On the contrary, it has always been carefully weighed by us and decided upon its merits. If my own assurance on that point were regarded as insufficient, I could confidently refer the governors of the hospital to the statement made by the medical staff itself in their letters circulated through the governors of the hospital under the head of "Diet of Patients," where readers will see that recommendations by the medical staff have been, on the showing of the medical staff, sanctioned and adopted in every detail by the Board of Management. If the Medical Committee stands, so to say, on the one hand as representing the medical staff, so the Board of Management stands on the other side as representing the general body of the governors, and as it seems to me a very suitable medium of communication between the committee and the Board of Management is found in the person of the secretary-director. As a part, and a considerable part, of this recent dispute has fallen upon the secretary-director, I think it only due to him and due to the hospital to point out that in spite of all that has come and gone there seems to be no general hostility to the gentleman who now fills the office of secretary-director. I do not dispute, and I am sorry to say that I cannot well dispute, that there are not individual instances in which some ill-feeling towards Mr. Rawlings has been displayed; but taking the general tone of the medical staff it remains, I believe, on the whole courteous and amicable, and that that is so is evidenced by the fact that frequent letters pass even still between the Medical Committee and their secretary and Mr. Rawlings as representing the Board, and that those letters are still couched in language that is perfectly consistent with friendliness and courtesy. But that does not exhaust the possibilities of intercourse between the two authorities—between the Board of Management and the Medical Committee—and although, as I say, the fact that we have such an officer as the secretary-director and that he is so able and efficient seems to point to Mr. Rawlings as the most obvious channel of communication, still we have never dreamed of restricting the medical staff to communicating with us through that channel. We have always invited the freest possible expression of opinion, whether by letters or by personal interviews, and at one time the system of sending two delegates or representatives to the Medical Committee from the Board of Management seemed to be working well and likely to be attended with good results, and I, for my own part, very much regret the decision of the medical staff to discontinue that mode of communicating their views. I fully admit that there are cases in which direct communication face to face may be more satisfactory than any amount of correspondence through a third person. Points may be more easily explained face to face, and misconstruction or misapprehension may be more easily removed in a personal interview, than when the correspondence is conducted on paper through the secretary of the Medical Committee on the one side and the secretary of the hospital on the other. Therefore, we have all along welcomed, and shall continue to welcome, any suggestion on behalf of the medical staff for a system of personal communication between themselves and the Board short of their direct inclusion on the Board of Management. The demand for their direct representation on the Board of Management only became acute in the spring of 1899, and I would have my hearers to bear very carefully in mind, for it is important in reference to what comes later, that when in the spring of 1899 this scheme for direct representation on the Board of Management was very forcibly urged, it was not grounded on an allegation that the patients were suffering from neglect. No allegation of that kind was made, or hinted at, or suggested. The sole cause then assigned for this urgent demand for representation on the Board of Management was the fact that the Board had recently introduced the system of payments by out-patients towards the cost of their medicines, and this was an arrangement to which the staff on general considerations of the interests of the local profession, entertained an objection. I am bound on that point to say a word of justification for the course which the Board adopted. The income of this hospital does not increase by leaps and bounds. We are made custodians of the purse of the hospital, and it is quite obvious, and hardly needs saying, that we could wish it fuller than it is. The outgoings, the expenditure of the hospital in some departments has partly increased, and this is very largely due to alterations in the system of treatment. Of course I should be the last person in the world to canvass the wisdom or propriety of the changes in treatment which the medical staff think proper to introduce. They are probably the best judges in Europe of the cases which are brought under their care, and their views as to the right methods of treatment, diet, and the like are entitled to absolute respect; but in the exercise of their discretion they have of late years made such alterations in the nature of the diets as to very materially increase what may be called in homely phrase our housekeeping expenses. While our revenue shows no great signs of elasticity, our housekeeping expenditure does advance by leaps and bounds, and it occurred to those who have the interests of the hospital at heart that a very convenient and perfectly harmless way of meeting this increased expenditure would be not to compel but to invite payments from different patients for the medicine which they receive. It was never suggested that they should pay for the medical attendance that they receive. It was never suggested that they should pay for the benefit, or suppose themselves to be paying for the benefit, of the great medical skill and science which are brought to their assistance. All that was suggested was that patients not rich, and yet not abjectly poor, might welcome the opportunity of making an expenditure of sixpence or a shilling or so on medicine, which, if they were not patients here, they would have to buy at a chemist's shop, and we also felt that it would in many cases be a relief to the minds of those more respectable though not affluent persons if they felt that they were receiving their benefits absolutely without any return—that they would like to feel in fact that they were not paupers, but that they were making some small contribution to the expenses of the institution from which they were deriving unquestionable good. And it was therefore decided to offer them the opportunity—not to compel them—of contributing towards the expenses of the medicines which they here receive, and I may say that, although in the general interests of the profession the medical staff objected to the alteration, it has been found in practice to work well, and has produced without hardship to or pressure upon anyone an increase to the revenues of the hospital of between £800 and £900 in the year. That must be admitted I think to be a financial reform which was worth carrying out, and so far as I can see it involves no hardship to any living creature. It is important that it should be borne in mind that the class of patients has not altered, but is composed of just the same sort of people as it was before, but they are people who welcome the opportunity which you see was not previously afforded them of making some slight return to the hospital for the benefits which they are conscious of receiving from the hospital. The Board, in the financial interests of the hospital—for they only were at stake in this matter—felt themselves bound to maintain this change in the rules and to allow persons to contribute, but last year the Medical staff, in the exercise of their discretion, thought right to bring the

matter before the Hospital Sunday Fund with the view, as I understand, to the suspension or the refusal of the original grant. Then the matter remained for some time in abeyance and suddenly in the middle of June of this year a statement dated May, 1900, was sent out to the governors, and in order to show you how anxious we were that there should be no concealment about the matter and that every conceivable charge or allegation against us should be dragged into the light of day, I may mention this fact that where the medical staff were unable to find the addresses of the governors, which was the case in a certain number of instances, they merely forwarded a number of the copies of the memorial to the care of Mr. Rawlings or left them at the office with a request that they should be sent on and we, as far as our opportunities for finding the addresses of the governors sufficed, were careful to send every one of those memorials on to those to whom they were addressed, thus showing unmistakably that we had nothing to fear from the fullest investigation by yourselves, ladies and gentlemen, and by your brother and sister governors to whom we are responsible. I would now invite your attention to the statement circulated by the medical staff in the letter to the governors of the National Hospital, and you will observe that in that statement on its first page the claim to admission to the Board of Management is made to rest solely on the ground that the patients are suffering from evils of administration, the only cure for which would be to grant the medical staff direct representation on the Board of Management. That is the only ground on which the alteration in our rule is demanded. It is alleged that our patients are suffering from certain abuses which the presence of medical men on the Board would correct. Considering that this is the ground on which this all-important change is recommended to your consideration, it is necessary, I think, that the ground should be carefully examined. It appears to us that in advancing their claim to admission on the Board on this ground, that the patients are improperly or insufficiently attended, the medical staff put themselves in this position—they are gentlemen who, in the day by day performance of their duties must necessarily be acquainted with the work of the hospital. In the interests of the patients, no less than in that of the scientific reputation of the hospital, any shortcomings which they observe should have been made the subject of complaint or remonstrance to some person in authority. If it is true, as they say, that their patients were improperly fed, that their sheets were not sufficiently changed, that the nursing was insufficient, that the massage could not be adequately carried out, or if they observed, in a word, any other defect or abuse in the treatment of their patients, it would seem to me merely a matter of common sense to allege that they were bound in the interests of humanity and of the reputation of the hospital to report the circumstances directly to those in authority. But, as far as we can ascertain, and in truth I say we have ascertained it absolutely, the staff have never, down to the issue of their statement on June 16th this year, suggested that the domestic condition of the hospital was other than perfectly satisfactory. We infer, therefore, and we are driven to the inference, that the allegations and suggestions of mismanagement and insufficient or improper attendance cannot possibly be well founded. In fact, I have only to ask you to consider in what a very invidious light the staff are placing themselves, supposing that these allegations be proved to be well founded, for they would then be in the position of men who had deliberately allowed abuses and defects which came under their notice to remain unredressed during a very considerable period of time. I cannot for my own part believe that the medical staff of this hospital, whose personal and professional reputation is of the very highest character, would ever have sanctioned the withholding from persons in authority any of the grievances of patients if they had really found such grievances to exist. Assuming, however, just for argument's sake, what I do not believe, that the allegations made by the staff were well founded, I would say that it is obvious that gentlemen who never breathed a word of those evils to the secretary-director or to the Board, and have never taken the trouble even, as far as I can make out, to point out any of these abuses in the frequent letters which they have addressed to Mr. Rawlings, would not be a valuable accession to any Board of Management. It seems to me that the very fact, assuming it to be a fact, that they had allowed these evils to go unnoticed and unredressed, would be of itself a proof that they were not well qualified for a share in the practical administration and management of an institution which requires promptness and activity and business-like qualities in those who conduct its business. I feel that the fact, and I harp upon it because I feel that it is vital, that the medical staff have never made any representations about the patients being badly fed, or not kept clean, or badly nursed, is enough to dispose of the charges, but, if it were not enough, and supposing other testimony besides that of our own committee of inquiry were required, it is forthcoming in the evidence of Mr. Sidney Holland and Sir Henry Burdett. I do not suppose that there are any two gentlemen in England whose names are better known in connection with hospital work and hospital administration than those gentlemen; they have paid exhaustive visits to the hospital, and have declared themselves perfectly satisfied with what they saw here, and in proof of that statement I have only to refer you to what I daresay you have already seen—Sir Henry Burdett's letter in the *Times* of August 8th. Then it is to be borne in mind, and this is another proof, I think, that our internal condition is not unsatisfactory, that the doctors have continued to send patients for admission to the hospital, which surely they would not do in the case of a hospital as mismanaged as would appear from their statement to the governors this one is, and not only that, but have continued to communicate with the Board by letters addressed to the secretary-director, on all such matters touching payments to the hospital staff and other points of domestic administration, although the letter circulated no doubt would perhaps convey the impression that all communications had ceased. I now approach a subject which has been one of acute controversy during the last few weeks, and that is the Hospital Sunday Fund. Here I feel, and I am sorry to have to say it, though I must say it in the interests of truth, a very great cause of complaint against the medical staff exists. If we are correctly informed, the medical staff have used their best endeavours to secure the suspension of the usual grant from the Hospital Sunday Fund. This does not seem to be in the nature of legitimate warfare. The medical staff have a perfect right of course to request and even agitate for admission to the Board of Management, but pending the decision of that question by those who alone have power to decide it—that is the governors—it seems to me to be in the highest degree unfriendly and injurious to the hospital of which they are the officers that they should, either directly or indirectly, endeavour to procure the suspension or refusal of our usual grant from the Hospital Sunday Fund. I, for my own part, have reason to believe that that grant is only, in spite of the efforts made at the Mansion House, suspended and not permanently withheld, and I believe that the Hospital Sunday Fund authorities, when they realise the true position of matters as set forth on pages 8, 9, and 10 of the Board's reply to the letter of the medical staff, will reconsider the decision at which they lately arrived, and will renew the grant, which, as I say, I believe was actually stated to have been not refused but only temporarily withheld. Now I said at the very beginning that I should endeavour to keep quite distinct the two questions about representation of the medical staff on the Board of Management and the question of a further inquiry into the administration of the hospital. I refer to that question further, namely, the administration of the hospital, only to say this much: that should the governors decide and order it to be held, whatever its results, it would not affect the grounds on which we oppose the admission of the medical men to the Board of Management, and we could not ourselves be parties to referring to any outside authority—arbitrator or referee however distinguished—that question of the admission of the medical staff to the Board of Management. We hold that to be vital. We have expressed our opinion upon it again and again, and we ourselves, as I say, could not consistently with self-respect submit the decision of that to any outside authority. It remains, of course, in the hands of the governors, but we could not invite the opinion of an outside referee upon such a point as this. On the other hand, as to the internal administration of the hospital, and the comfort and care of the patients, we, as I said before, should welcome any inquiry by a properly qualified referee. In the medical staff's statement to the governors, as I said before, they base their demand for representation entirely and exclusively upon the alleged unsatisfactory condition of the hospital and it would seem that they did so because they thought that the governors would not be easily affected on any other argument, but having chosen their ground, we contend that the medical staff must be held to it and that the issue they raise must be the issue tried and decided upon. They must not be allowed to drop and ignore these charges and to argue questions of their admission to the Board on general grounds. In so far as I have now spoken, I have spoken after full consultation with gentlemen at least equally interested with myself in the hospital and with our legal advisers. I now wish to say that in my concluding remarks I am speaking entirely on my own responsibility without committing my colleagues on the Board of Management. A reason that weighs with me very heavily against the admission of doctors, physicians or surgeons to our Board of Management is this. They are specialists, they are as I said just now among the most eminent specialists in Europe, but the experience of life in various departments and vicissitudes of it has taught me this—that experts are not the best guides in the practical business of a large going concern. An expert in the subject in which he is an expert is an authority to be treated with the utmost deference, but in the general conduct of human life and of human interests, and more particularly in such business as the financial and administrative work of an institution like this, I for my own part never find that the expert's opinion is worth more than that of an ordinary man of the world. In truth, the very fact that he is an expert to some extent tends to narrow the range of his observation and to make points, in themselves comparatively small, loom very large in his view, and to destroy his general sense of the proportion and the relations of things. For my part, therefore, I discount altogether the argument that these medical and surgical gentlemen should be admitted to the Board of Management because they are experts in their profession. As experts in their profession we welcome them, are proud of them, and are thankful for the services they render to our patients, but in the general and financial control and administration of the hospital we think that a Board which includes the Lord Chancellor of England and the head of Coutts's bank is quite able to transact its own business without the assistance of even the most eminent men of science. And that brings me to my concluding remark; and here again I am not committing my colleagues, but I am speaking only of my own opinion and from my own experience. I do not propose at this late period of my speech, and in a mixed audience, to argue the rights and wrongs of the great subject of vivisection. I do not say whether the prejudice which exists against it is a well- or ill-founded prejudice. I only know that the prejudice does exist, and I am assured by those who have the best means of knowing, namely, by journalists and

pressmen, who can judge of the matter from the correspondence which pours in through the editorial letter-box, that the prejudice and feeling against vivisection is markedly on the increase. I am not arguing for it or against it—I am not saying whether I myself share or do not share in the prejudice against vivisection, but I recognise it is a great operative fact, and one which those who have the interests of this hospital at heart would be very foolish to disregard. It operates in various ways, but it operates in a real way among the working classes. Those who are familiar or conversant with the working classes must have heard it again and again alleged by artisans as a reason against subscribing to the Hospital Sunday Fund that in the hospitals experiments were performed on the poor for the benefit of the rich; and again I am not saying, of course, whether that is a well-founded or an ill-founded suspicion, but I recognise it as one that I have come across very often, but I take it into account as a fact. Then, in the higher and better educated and informed classes of society, I find exactly the same opinion, though perhaps not quite so bluntly expressed, operating with and determining men, and I have heard it again and again said, and I believe every one associated with the finances of this hospital has heard the same thing, "We are not willing to give our money to an institution where prominent vivisectors are on the staff." Now I have again and again had to point out that this is an unreasonable position, and I have again and again had to point out that we have no school or laboratory, or, as I believe the euphemism is, no physiological laboratory attached to this hospital, and that here the interests of humanity are at least as safe as they are in any other similar institution. I have again and again had to fight the battle of the hospital in that regard, but for all that, one's representations do not by any means always prevail, and there are notorious instances where large sums of money have been actually withheld from the hospital on account of this fear, reasonable or unreasonable, that the money might in some way be used directly or indirectly for what is called the promotion of research. At the risk of being wearisome I have to say that I have expressed no opinion as to the reasonableness of those fears or prejudice against vivisection. I have expressed strong opinions against the reasonableness of any fears with regard to the actual practice of this hospital. I have tried to reassure my friends by pointing to the simple fact that we have no physiological laboratory, but if this amount of prejudice exists, and if in addition to having associated with your medical staff gentlemen who are vivisectionists you have those same gentlemen included on your Board of Management, how very much stronger that prejudice might become, and how much larger would be the stoppage or withdrawal of financial support. For my part I desire here again as I did at the Conference with the Sunday Hospital authorities at the Mansion House, to affirm that with the most trifling exception we have been throughout on friendly terms with the staff of this hospital, that we desire to cultivate friendly terms with them, and that we have the strongest confidence in their humanity and in their uprightness as well as in their scientific skill. It was, indeed, at the instance curiously enough of one of the medical staff of this hospital—one of the most eminent members of that staff—that I was induced to join the Board, and I have always been very grateful to that eminent man of science for the opportunity he gave me of being associated with a work of philanthropy and mercy which has taught me many invaluable lessons, and in the fortunes of which I must always be most profoundly interested. It is essentially a work of Christian philanthropy, and it is in our judgment to be conducted in the spirit of its founders, and in the sole interests of suffering humanity. It was judged expedient by my colleagues on the Board that the resolution, the only one which is to be submitted on behalf of the Board, should be moved from the chair, and I therefore formally move on the part of the Board of Management the resolution which is printed on the red card in your hands, "That it is inexpedient to grant the demand of the medical and surgical staff for direct representation upon the Board." That is the resolution which I move, and it will be seconded by Mr. Hopwood of the Railway Department of the Board of Trade.

MR. HOPWOOD—Mr. Chairman, ladies and gentlemen, I was about to say, in common parlance, that I have much pleasure in seconding this resolution. It is, however, I fear, impossible to find any pleasure in matters connected with such a controversy as this. We know these cases. They appear with periodic recrudescence in almost every branch of philanthropic work. They are usually born in evil and nurtured in mischief, and the only result, as far as my experience of them goes, is that a little more misery and a little more distress rests at the doors of those who are seeking help and are in need. In fact, such controversies do the devil's work, but the question is how these cases, when they arise, are best met, and I say that they are best met by the application of good administration and of sound business principles. There is no distinction to be drawn between an undertaking of this kind and any other large commercial undertaking in the country. It matters not that this is a hospital. The same principles of business and of administration are equally to be applied to great concerns whether hospitals, banks, railways, or shipping companies. The governing body are trustees for the benevolent public and also for the suffering patients. What is the duty of trustees? The duty of trustees is to take the same care and have the same diligence with the matters entrusted to them, as trustees, as they would in connection with their own private affairs, and the question is, whether the governing body of this institution, acting as trustees, have displayed a good discretion in declining to entertain the application of the medical staff for representation upon their Board. In my judgment they used good discretion, and I hope they will maintain their position to the end. We hear, in these days, of strikes and lock-outs, but I have never yet heard that servants in an undertaking like, say, the London and North Western Railway have gone so far as to ask for direct representation on the Board of Directors for the purpose of repairing deficiencies in the management of the line. And what would be said by a man like our Sir John Blundell Maple if his servants waited upon him and threatened to bring about his ears those great premises in the Tottenham-court-road if he declined to put two of his cabinet-makers on his directorate? Directly you apply the ordinary principles of business life to this trouble you find the position of the medical staff is totally inadmissible, and it is because I feel that it is totally inadmissible, and because the directors—the governing body—of this institution are, in my judgment, doing their best, as trustees, to properly administer this hospital; and it is because they have apparently laid hold of the cardinal point—that hospitals are constructed for the benefit of the patients and not of the doctors—that I cordially second this resolution.

The CHAIRMAN—The resolution has now been proposed and seconded and I have to invite any governor or subscriber or any member of the medical staff to speak on it. I only have to ask that any lady or gentleman who speaks will be kind enough to give his or her name to the reporters so that it may get down on the shorthand notes.

MR. BOWER—Mr. Chairman, ladies and gentlemen, it is now about 30 or 40 years ago since I first became acquainted with this institution. At that time it was somewhat of a one-horse-power institution, but the enlargement of the hospital and the increase of the utility of the hospital during all those years, from the small beginning when Mr. Chandler founded it to its present state, has been due to the management of the Board aided by the secretary for the time being. Now, sir, we are asked to say that we ought to allow—and the claim is made as of right—the medical staff to be represented on the Board. Now Mr. Chairman, ladies and gentlemen, I have taken a great deal of trouble to read every paper that has been issued in connection with this subject, and I will tell you one fact that strikes me as the strongest proof of how wrong it would be to put them on the Board, and that is the way in which they began this controversy. Now how does it stand on that point? They get a document signed and dated. They do not issue it for a month; and how did they issue it—after communication with the Board of Management either directly or indirectly? No. They took upon themselves to send it broadcast to all the governors so that as much evil as could be done should be done. Now, if there is anything which makes me think that they ought not to come on to the Board of Management that, at any rate, is one reason. But then how have they dealt with this matter since? The Board undertook to have an inquiry and it was one of the first duties of the Board—if I may be allowed to say so—to say to the medical staff "Give us particulars of what your complaints are." That was done; but the medical staff refused to give any particulars in respect of which there had been failure in administration. Is that fair, is that the conduct which one ought to expect from gentlemen on such a staff, and ought they, therefore, to have any right to ask that they should be admitted, or some of them admitted, to the Board of the institution? Those are, it seems to me, the great points besides those which have been pointed out by the Chairman, points which, if I may say so, ought to determine this question. We do not as a rule go to professional men, whether they be eminent surgeons or eminent clergymen, and ask them to go on to a Board as men of business. I will stop there, because I think you will all understand what I mean without further observation.

DR. SEPTIMUS GIBBON—Mr. Chairman, ladies and gentlemen, I think I am older than the last subscriber. I think in the year 1858 I subscribed my first £5, and I have gone on ever since, and have induced my friends to put their money into the hospital. They have asked me what all this agitation is about, and I have said I could not tell them, but that I thought it was a bogus one, and that those who were responsible for it wanted to get free advertisements in the *Times* newspaper and in the medical journals. As to this resolution I quite agree, but there is one point which I shall submit to you, and that is that I think the medical staff, if they are governors, ought to be allowed to vote for representatives on the Board. As I understand the rules, your medical staff are precluded from voting in general meeting. I think that the right of voting might be conceded to them in that respect, as it has been to the medical staff who are governors in St. Bartholomew's Hospital and the London Hospital, and in some of the hospitals that are very well managed. I think if that were conceded to them, it would be a step in the right direction. I understand that at present the members of the medical staff of this hospital, although they were governors and subscribed their money, could not vote in any meeting. I think if the Board of Management would concede that point to them, it would put you right with the public, but certainly I do not approve of their going on the Board of Management, because medical men have not the time in the exigencies of medical practice and the details of medical practice—the details are very numerous and very onerous for men who are in active practice, and they could not give the time necessary for the work. Besides, as a rule, they are bad administrators, although I see there is a letter written by one of our medical staff in a medical paper to the following effect: "Now we ask the governors to consider frankly

to whom the success of administration is due. We have no wish to undervalue the services of the respectable gentlemen and so on. They are entitled to every recognition for the amount of labour they give to this philanthropic work, but after all, to speak plainly, they misconceive their position. In their relation to the hospital they are only hewers of wood and drawers of water. It is not they who built up its reputation. The Board of Management might easily be replaced by a dozen others; the staff could not be replaced. It is the finest medical staff in Europe," and so on. Well, they are not administrators. The success of this hospital is not due to them in the least. If it is due to any one it is due to our friend, Mr. Rawlings, who is the best administrator I have met with. There is only one gentleman in the city who comes up to him, and who is a large merchant. Certainly, Mr. Rawlings has conducted this hospital, because I have been well acquainted with it since its foundation—I attended its first meeting, and I gave my first £5 in the year 1857 or 1858—and I have watched it during its whole course, and I have been Medical Officer of Health for this district, and as far as I know in his administration Mr. Rawlings selects good people, good servants, and the matrons that he has had here have been really first-class. The organisation goes on as free from defects as it is possible to imagine. There are complaints about the quantity of milk, but I understand about 235 quarts of milk are supplied every day. That is the only point. I am a vivisectionist, and I am not an anti-vivisectionist. I think vivisection has done a great deal for medical science, but I do not approve of our secretary-director being vivisected, and gentlemen being allowed to plunge knives into his reputation. I think that is below contempt, and that personalities ought never to have been allowed.

The CHAIRMAN—Ladies and gentlemen, by the courtesy of the meeting perhaps I might be allowed to say one word in reference to something that fell from Dr. Gibbon with reference to the rules. The rule that he referred to was number 10, section 3, and I may, for the information of the meeting, perhaps, read it. "No person shall vote as a governor while he is a salaried officer of the institution, nor while he holds office on the medical staff." It is not part of my business to defend that rule. I do not know under what conditions or upon what arguments it was based, but I only read it out because I want to invite Dr. Gibbon's attention, and that of the governors and the public, to the fact that it is not confined exclusively to the medical staff, but covers all the officials of the hospital. A very curious instance has arisen with reference to the working of this rule. Owing to the munificence of our excellent chaplain we are indebted to him for the sum of £200 in one gift, and yet, by the operation of this rule, he is precluded from voting as a governor although he was a donor of £200 in one lump sum. I ought, perhaps, to say that my own opinions agree very much with those of Dr. Gibbon with reference to that rule.

MR. MELVILLE GREEN—Mr. Chairman, ladies and gentlemen, I desire to ask whether the medical staff have had notice that they would be heard to-day if they liked to attend this meeting, and that although they are not entitled to vote they would be invited to speak, because it seems to me that their staying away is unfortunate, though on the face of the rule which has just been read it seems to me it was not likely they would be here. I think it is unfortunate because the responsibility of this matter does rest with the whole body of governors. The action of the Board being challenged by the medical staff, the whole body of governors are responsible for the decision to which they may come, and I have seen these proceedings with very great regret because I do not see any way out of them which will be beneficial to the hospital. The motion before us seems to me to be one that if lost or if carried will alike be unfortunate, and if we could find some other way of getting the decision I think it would be a good thing. I do not know whether we could pass by this Question A just as you have done in your speech, and take up Question B and extend that to the entire question of the management of the hospital, and then obtain some small number of eminent men chosen chiefly from the boards of other hospitals to give us a report generally on the whole matter. We should, no doubt, have to meet in order to receive that report some day, but then we should have two advantages that we have not got to-day, we should have for either side a golden bridge. If such a body of men amongst their several recommendations were to say that it would not be desirable that the medical staff should be on the Board of Management, I think the medical staff would accept that—at all events for some time to come. If on the other hand they should say it was desirable, the Board might accept that likewise. If we decided to-day I know, of course, you have got a number of proxies and that the Board is practically going to carry this meeting with them. We are threatened by the staff with their wholesale resignation, though I am not frightened even by that, but it would be a great calamity. No man or body of men are indispensable, but it would be a great calamity for all that, and it would be a very great calamity that the whole of the staff should carry out their threat and retire. It would also be a great calamity, if we carried the motion the other way, that that should be followed, as it might, by the retirement of the Board, as it might be regarded by them as a vote of censure. I do not want to censure anybody, and I do not think the governors ought to censure anybody, but I think we ought to endeavour to find out whether this matter cannot be so arranged in the interests of this valuable institution as that it will result in promoting its prosperity and getting rid of this domestic squabble which is not, really and truly, so important as each side seems to imagine. I am like another gentleman who has already spoken on this matter to-day, because like him I have read every word that has been printed with reference to this controversy, and I have also read every annual report for many a long year; and what has most struck me is the exaggeration that has resulted from the fact that there has been a good deal of friction, and there has been a good deal of heat and, therefore, rather more temper than is desirable. That there is a great deal of exaggeration is the conclusion to which, I confess, I have come. It is not necessary to take up your time by pointing out what I think is exaggerated excepting this one thing. I think that the Board are greatly exaggerating the dangers of having two of the staff with them. If you have two men out of twelve—I think those are the numbers—or two out of ten, it is simply impossible that they can ever dominate the Board. The Board have exaggerated their own weakness. No people are less likely than the members of this Board to be "dominated" by a couple of doctors. In fact, I am sorry they use an expression of that kind because it seems to me that in so doing they have played into the hands of their adversaries. It suggests at once that if the Board feel themselves so weak as that they fear that they may be "dominated" over by a couple of doctors—nothing could be more natural than that they should be dominated by a secretary-director. I do not believe for a moment that the secretary-director does do so, but I must say, with reference to that gentleman, that I think perhaps we may have too much of a good thing in him. We have a secretary-director who is a man of zeal and devotion to the interests of the hospital, whom it would be impossible to replace and difficult to equal anywhere else. That is the conclusion I have gathered from what I have seen and noticed—namely, that we have a secretary-director with devotion and zeal, and that it has followed as a consequence that with his thirty-two years' experience the Board do not often overrule him in his *ex-parte* statements, but that they rather agree with him and allow their judgment to go with his judgment. I hope you quite see that I do not mean that you are led, in the sense of following the lead, but I think that something of that kind certainly does take place. Unquestionably, the secretary-director has not got as much tact as one would like him to have, otherwise the rupture between the staff and the secretary-director could not have reached the point it has reached. In fact there are one or two little things—I am not going to quote them—that show that, and it simply arises, I take it, from his exceeding devotion to the interests of the hospital, and from what naturally follows—the great confidence that is felt by the Board that what *he* thinks is right is right; and that very likely may be so. But we have this principle of government in this country of ours—that we do not like one-man authority. Now I think the doctors are undoubtedly in this position, whether by their fault or otherwise, that they do not communicate freely with the Board. They are not on cordial terms with the Board because they find, practically, that they have to convince the secretary-director before they can hope to convince the Board, and that, practically, the secretary-director is a sort of buffer between them and the Board. Now that is a bad thing. I am speaking as a man of business. I may be quite wrong, but that is how it strikes me as an outsider. If that is so it is a bad thing, and it is the reason probably that we have got into the position we are in, and which we must regret that an institution like this should have got into. I think there is a little misconception which I think the gentleman who seconded the motion has left on the minds of the meeting. I think he rather misapprehends the position of the medical staff in the hospital. He made some comparison of the medical staff with the men in the employment of Sir Blundell Maple, but I would venture to say that the men Sir Blundell Maple employs and the medical staff of this institution cannot be compared. A hospital of this kind may be defined as a means of applying the skill of the doctors by the hands of the nurses and by the pecuniary means found by the governors to the poor patients, and that is not a sort of definition that you could apply either to Maple and Co. or any other large business whatever. Not at all, it is not the kind of thing. This is an institution, as is also every hospital, which has one object to accomplish—namely, the good of the patients. That is the only object which anybody ought to have in view, and it is an object which is to be accomplished by the employment of skill and the expenditure of money. Skill cannot accomplish that object without money, and money cannot accomplish it without skill. But it is for them to co-operate, as they ought to co-operate, in seeking to accomplish that object. It is a great mistake to describe the staff as "servants" in the sense of being persons who are put under the control in the sense in which I think the word has been used, and in which Sir Blundell Maple's men are under his control. The medical staff of this hospital are co-operators, and it is in that light that their services should be looked at. Now there is a proposal to give them some influence in the management of this institution by putting them personally on the Board of Management. A proposal of that kind is not at all like a proposal to put the servants of a railway company on to the directorate of a railway. It is practically done as a matter of fact, I believe, in the majority, but certainly in a very large number, of hospitals where members of the medical staff are not only on the governing body—which they certainly ought to be—but they are on the committee itself—on the select body which does all the real work, and no such evils have, in fact, resulted such as are feared here. They do not "dominate"—the two or three members who are on the various hospitals—the rest of the Board, but I will tell you what they do. They produce a consciousness in their own minds that if anything goes wrong they, at all events, will be heard and understood amongst their colleagues, and the Board also be influenced by them. Now, it is very curious that the Board actually think that the influence of the medical staff, acting as a committee, is quite

right, but that as members of the Board it is quite wrong, for they say in few words they will entirely "dominate" all their colleagues. That is exactly what it is. A recognition that the sort of influence that a man exercises by sitting amongst his colleagues and talking freely, as their equal, to them upon all sorts of subjects which come before them, is different to that which a man exercises when he has to give his decision in reference to some serious complaint. I think those are the very words from the report which I quote—"serious complaint." It is plain that there was wanted here more linen and more washing before it was obtained. It came out only, as it were, by degrees; but it has been granted. Now, if two members of the staff had been upon the Board my opinion is that it would not have been necessary to make a "serious complaint," but it would have come about imperceptibly. Nobody would have known that anybody was exercising any influence with regard to it, but it would have come about. Therefore, I think, personally, if I have to vote to-day I must vote against the Board—not by way of censuring them, as a Board, because with everything that the Board has said I sympathise entirely as to the danger on the Board of the medical profession in neglecting to see that the interests of the individual patient is greater than either the interests of science or the interests of the medical profession. There is that real danger, and I sympathise with those who recognise its reality. That is to say, I am sympathising with both sides, and I am wishing that I was clever enough to suggest some way out of the difficulty that would not produce a collision. What occurs to me is that we might adjourn this question and that Question B should be determined as to whether there should not be some gentlemen nominated, not by the doctors, but by some outside people, to consider the whole subject, then when we have their report the governors would come together to consider what action should be taken upon it. That such an important question as this should be dealt with only by a circular is not very creditable. That is the suggestion I have got up to make—that is to say, to try and postpone the decision of this question until both sides see some way out of it which will be more to the benefit of this hospital than anything that can result from the passing of this resolution.

SIR HENRY BURDETT—Mr. Chairman, ladies and gentlemen, the last speaker has taken up the position which Lord Crewe took up with regard to the Liberal party. He proposes to sit on the fence because he seems to be under the impression that on whichever side of the fence he comes down he will get his feet in a mess. I did not intend to speak, but I rose because I wish to remove that misapprehension from the gentleman's mind, and from the mind of this meeting of governors.

MR. MELVILLE GREEN—There is no mess on either side of the fence.

SIR HENRY BURDETT—I did not say there was, but you said you sympathised with both parties.

MR. MELVILLE GREEN—To some extent, certainly, but I think I expressed myself quite clearly that I thought that the medical staff should be represented on the Board.

SIR HENRY BURDETT—This is only a matter of hospital politics, and must be dealt with entirely from the point of view of hospital politics. I gathered that your impression was that the general rule, and the only rule, which governs hospitals is that the medical staff should be represented on the Board of Management. I was rising to show that there were three distinct ways of representation of the medical staff in hospitals. The first way is that the whole of the honorary officers of any hospital shall be *ex-officio* members of the Committee of Management. The second way is that two representatives of the medical board shall be elected annually by their colleagues and shall be *ex-officio* members of the Committee of Management. The third way is that the medical staff recognising that their duties are professional and that as members of a staff of a great hospital they have duties to perform to the profession as well as to their patients, prefer to maintain their independence by having a Medical Committee of their own to whom the Board of Management refers all questions appertaining to medical matters in regard to hospital management, and they then collectively have the opportunity of expressing their opinion upon those affairs and giving their united counsel, or the counsel of the majority of the staff, for the guidance of the Board which invariably regards it as a decision binding upon the Committee of Management. Therefore, I wish to point out that it has been held, in my experience of more than thirty years, by the reputed leaders of the medical profession, and by men of the highest eminence, that the wiser course for the medical profession, and the sounder course, is that they should be self-contained and independent, and shall have their own Medical Committee. That is the plan which has been followed in the government of St. Thomas's Hospital, and it is the plan which has made the great London Hospital what it is; it is the plan which prevails at the Brompton Hospital, and it is to be found in other hospitals in London like the Middlesex Hospital, where it has worked with absolute efficiency, and where peace has invariably prevailed. In fact, I remember in my early days a very aggressive member of the medical profession saying that he believed that it was the only sound way, and the only sure way, of having a peaceful and efficient government in any great medical charity. Therefore, it is not a matter to-day for the governors to decide whether they will take this one course which is recommended by the staff as being the only course of medical representation, because, as I have explained to you, there are three courses, and there is certainly a difference of opinion in the medical profession to-day as to which is the best course for the whole body to follow. The staff have taken up one course; they have decided themselves that they wish to be represented by two members, but that is only the view that is now put forward at this time after many years by your staff in connection with this institution. Now I should like to say in reference to something which fell from one speaker that I do not think that the case of employés in Maple's and of the medical staff of a great hospital are analogous at all. You have on the medical staff gentlemen who give their services without payment, and on the other hand you have employés who work for a definite payment. I see that THE LANCET this week distinctly lays it down that the medical staff are the servants of the hospital to which they are attached; but having regard to the contracts in the War Office and the difficulties which have arisen — which are analogous — between the civil and the military authorities of that department which has cost this country so much anxiety, and so much expense, and so much tribulation, I do think before any hospital, which is free from the dual control and which is free from a conflict like that which exists between rival authorities or rival professions in the War Office, should be warned by that example, and should hesitate a very long time before they seek to imitate it. My own view of the matter is that Mr. Melville Green made a very good point in saying that it is not well and that it is not possible—I think there is a great deal in this—for the staff to work smoothly when their only means of communication, their only direct means of communication, with the Board is through the chief official, when that chief official is so able and so splendid a specimen of hospital officialdom as Mr. Rawlings is. I do think that, as far as that grievance is concerned, the Board should take steps to have it removed, and I believe that the rules of the hospital provide effectual means for its removal, for I think that under the regulations it is provided that the medical committee shall consist of two members of the Board of management. It does seem to me that under that rule instead of matters being referred to the secretary-director and then being brought to the Board—in which case, no doubt, it is necessary for the medical staff to first convince Mr. Rawlings and that unless they do convince him they will not get matters before the Board—the whole of these questions should be dealt with through the Medical Committee which does provide for the representation of the medical staff and does provide for what all the speakers who have spoken thought desirable, and what I am sure we all wish, and that is the personal intercommunication of the members of the medical staff with the Board of Management. If that was clearly worked out and in future communications made through the Medical Committee on all points and the Board were to express that wish I imagine that what Mr. Melville Green says, as far as any grievance or difficulty is concerned, would be effectively removed. It would be removed constitutionally and would be calculated certainly to obviate friction and promote harmony. There is another matter which I think is certainly worthy of consideration, and I was glad that Mr. Russell agreed that it was one which should be dealt with as far as he was concerned, and that was the fact that if any member of the medical staff, or any member of the medical profession, or any other officer, as an officer, has the means and interest to qualify himself as a governor, I certainly do think that whoever they may be that they ought to have full representation under the rules with regard to their subscriptions like anybody else. It is the usual practice which prevails in other hospitals, and I think that this discussion to-day will do a great deal of good by bringing out those points which no doubt may give rise to friction, which we all regret, and which we all hope to see speedily removed. But it is perfectly clear that if the medical staff are to be represented on the Board of Management they must qualify for such representation. I do not know whether it is your constitution or what the circumstances may be, but I believe that it is a fact that this hospital, which is certainly without doubt equal to any other—and anybody who has any interest in this matter or wishes to satisfy themselves to demonstration by actual observation of the fact should certainly come to the hospital and visit it—I say of this hospital that whoever visits it must certainly come to the conclusion when they have gone over its wards and have made themselves acquainted with them, and after they have satisfied themselves according to their knowledge of the actual position of affairs, they must say that it is a splendid hospital, and a credit to the great metropolis of the Empire. There is no doubt about that. In fact, I will go so far as to say this, that Mr. Holland and myself both felt—and we came here on one of the hottest of the hot days of last month—that it was so administered that every ward was probably as cool a place as there was in any building in London, and that from top to bottom there was a maximum of cleanliness and a maximum of loyalty on the part of the nursing staff—because we took great care to satisfy ourselves upon that—in combination with their food, and that generally looking at the hospital as an institution as it exists it is a worthy representation, both structurally and administratively, of the highest efficiency which our modern civilisation has produced with regard to hospitals. It would not be fair, and it would not be right, apart from all question of controversy that there should be the shadow of a shade of doubt left as to the efficiency and the worthiness and the usefulness of the National Hospital for the Paralysed. Now, sir, the medical staff are not governors, and it is a funny thing no doubt that throughout the whole history of the institution—I believe I am correct in saying—they have never subscribed or been instrumental in bringing in money to this institution. I believe that the whole monetary power behind the medical staff at the present time with regard to this hospital, spending many thousands a year as it does, is

represented by a subscription of one guinea per year. I make that remark without any reflection on the staff, but simply to show you as we are bringing out all our points of difference that there is a very marked difference in regard to the position occupied in reference to the upkeep of this institution and the position occupied by the medical staff of other institutions and other hospitals in London in reference to the provision of money for the upkeep of those institutions. And, sir, having regard to the remark which fell from you with reference to vivisection I should like to make this point, not only for this hospital but for all hospitals. It is a very remarkable circumstance that when you ask ordinary people to give you money for anything they have always got 200 reasons why they should keep their money in their pocket. That is the case with regard to the majority, but I do think it is a little strange when we are told, as you told us, that according to the correspondence in the newspapers there is so growing an opinion on this matter of vivisection that it should take the form of a statement by the working classes in London—though I do not accept that as an accurate statement, for I do not believe that the representatives of the working classes in London really do take that view, but it is evidently the belief that they do take it because I have often heard it before—that they do not subscribe to the hospital through the Sunday or Saturday funds because by doing so they may encourage vivisection. It is true that a certain association that has to do with certain representatives of the working classes has taken up that attitude, but it is not the general attitude of the working classes. And why do I say that? Because I say it is a very remarkable thing that they should criticise and be down on hospitals when the returns of our hospitals show that every year the number of people who want to get into the hospitals, and who want to be treated by the hospitals, is growing out of all proportion to the increase of the population. In fact, we have come to this condition of affairs that the hospitals are so popular as to be almost too popular, because the increasing number of people who seem to get into them, and seem to be treated in them every year, grows in greater proportion than the percentage of increase in the population of this metropolis. I am very sorry that it should be necessary that some decision should be come to on the points which we have under discussion, but I hope that that decision may lead to modifications—and I hope the Board will accept the modifications—which have been pointed out—that representation should be given to the staff, and a means of inter-communication, and that the only means of inter-communication should not be through the Board's officer, but that the question of that rule about the representation should be altered, and that there should be that representation which has been mentioned, so that we should have in future harmonious working in this institution under a system which at present exists in some of the highest and best administered hospitals in the country, and which I know, as a matter of fact, is a principle which is highly favoured, and has always been highly favoured, by some of the most representative members of the medical profession.

The CHAIRMAN—If no other good results flowed from this meeting which is being held, as I have said before, at a rather inconvenient period for you, we have at any rate had the immense advantage of Sir Henry Burdett's speech, which being duly reported ought to do something, and ought to do much, towards clearing away the misunderstanding which exists, and towards alleviating the disagreeable feeling which prevails on this matter. I am bound to say that personally, as far as I am concerned—I cannot speak for my colleagues—that all the points made by Sir Henry Burdett seemed to be sound and just—reserving only that rather abstract opinion about the state of public feeling with regard to vivisection. Sir Henry Burdett refers to a provision once obtaining in our rules by which two members of the Board of Management had seats on the Medical Committee. That system obtained long before I was connected with the hospital as far as I know, and it was disused, I understand from Mr. Rawlings, at the wish of the medical staff, but no part of that is within my own personal knowledge.

SIR HENRY BURDETT—May I say that I sent for a copy of the rules, and upon examination of the rules I see that that rule still stands.

The CHAIRMAN—I did not mean that the rule had been repealed, but that the practice has dropped into desuetude. I understand that no two members of the Board have attended for many years. Then with regard to the advantage of free intercourse and interchange of opinions between the medical staff and the Board. I think, as I said in my opening address, that we have always had a consistent and conscientious desire that there should be that kind of communication between the medical staff and the Board. Circumstances may arise in which written communication through a third person is not as convincing as intercourse and an interchange of views personally, and we have recommended a system of representation by delegates, namely, that the medical staff should send two delegates to discuss, whenever they wish, matters in which the medical staff are concerned. That system was in working order at one time, and has only been comparatively recently allowed to fall into desuetude, but we should very cordially welcome the reintroduction of that means for an interchange of views. With regard to the speech of Mr. Melville Green, I welcome, on behalf of my colleagues, his extremely conciliatory tone, and I feel with him self that it is a question in which feeling has been unnecessarily exaggerated on both sides. I agree with him that anything that tends to the re-adjustment of relations must be welcomed by those who have the true interests of the hospital at heart. Mr. Melville Green asked me whether it had been intimated to the medical men on their being invited to attend this meeting that they would be at liberty to speak. That, I think, is answered effectually by their own letter to the *Times* on August 6th, in which they say that they cannot attend on this occasion, but that they will be ready at a meeting summoned at the proper time to place fully before the governors every question, and if that were not enough I may remind Mr. Melville Green that four of the medical staff are governors, one by subscription, and three by complimentary election; and if any of those gentlemen had attended to-day, as they could have attended to-day, although by that rather curious rule that I have referred to they would have been restricted from voting, they would have had the right to speak. Another point, as suggested by one of my colleagues, is this, that it was not necessary if any of these practical grievances were brought forward by the staff that they should make a formal representation to Mr. Rawlings, because, as I am reminded, and as I understand, the slightest hint to the sisters in charge of the ward or to the lady-superintendent would have produced the desired result. With regard to the relations between the medical men and the nursing staff the Board never interfere; I mean there is free interchange of opinions between the medical men and the ladies who have charge of the patients in the several wards; and all the grievances or complaints or interests of those patients can be brought to the knowledge of the executive authority by the mere mention of the case to the sisters in charge. I think those are the only points in either of the two last very valuable speeches to which I need refer. But now I must speak in my capacity as Chairman, and I think that, considering that notice has been formally given by means of the advertisement in the *Times* agreeably to our rules with reference to the matters to be dealt with at this said general meeting, I am bound to invite a vote upon the only one of the two points at issue on which a resolution has at present been moved. That is entirely without prejudice to a second resolution being moved if anybody thinks fit to move it. The resolution which has been moved, seconded and supported is this: "That it is inexpedient to grant the demand of the medical and surgical staff for direct representation upon the Board." As I was the mover of that resolution it would not be fitting that I should put it to the meeting. I will therefore ask Mr. Bower to take a show of hands on the motion.

SIR HENRY BURDETT—May I ask whether that rule with reference to the representation of two members of the Board on the Medical Committee has not become inoperative because no members of the Board have been appointed of recent years.

The CHAIRMAN—Mr. Pearman is an older governor than myself. I will leave him to answer the question.

MR. PEARMAN—Perhaps, as I have been a member of the Board for some twenty-five years, I may be able to say something as to this. It was at one time the custom for two members of the Board to sit upon the Medical Committee, but the time came when the Medical Committee thought that the privacy of their discussion had been somewhat interfered with, and there were other reasons, which were best known to themselves, why they thought it was undesirable that members of the Board should, in fact, sit upon their committee; and the Board feeling that the Medical Committee could at all times communicate with them whenever they thought proper, either by the resolution of their committee or by delegates to any meeting of the Board, allowed the rule to fall into desuetude, and for some years—a great many years, I think, I am unable to name the number—no members of the Board have, in fact, had a seat upon the Medical Committee.

SIR HENRY BURDETT—But I think you said, sir, that you were prepared to revive the rule?

The CHAIRMAN—Certainly. I have no doubt—I am unable to speak for the Board as a whole—but I have no doubt if the Medical Committee desire members of the Board to sit on the committee two members of the Board would be appointed for that purpose, and that the Board would be quite ready to appoint two members to sit upon their committee, and to hear any complaint or suggestion that the committee might wish to make.

SIR HENRY BURDETT—It seems to me that that rule is a most important one. It has never been abrogated, but it has fallen into desuetude, and we are of opinion that if it had been acted upon we should never have been called together. We think, therefore, that it should be clearly understood, and that it should go out that the Board are willing that that rule should continue and again come into operation at once.

MR. PEARMAN—Of course I cannot pledge the Board, but I think there can be no doubt, sir, that if the Medical Committee wish it the Board would be very happy no doubt to appoint two of their members to sit upon the committee.

MR. MELVILLE GREEN—Will you put it further than that? Will you say that the Board will consider the matter and suggest it to the Medical Committee—that is to say, that this rule should be revived at the suggestion of the Board?

The CHAIRMAN—I will undertake on behalf of the Board to give that undertaking.

MR. BOWER—I have been asked to put the resolution that the Chairman has proposed. Those in favour of the resolution will kindly signify the same by holding up their hands. In favour 14. Against 2.

The CHAIRMAN—It is my duty, then, to declare that carried. Now I have to ask the indulgence of the meeting for Mr. Burford Rawlings who wants to speak.

MR. RAWLINGS—Mr. Chairman, ladies and gentlemen, I only wish to have the opportunity of saying a word or two in reference to one remark which fell from a gentleman who spoke—Mr. Melville Green

I think it was—about a want of tact on my part. I think I should like to say on that point with your permission that I am not conscious that I have ever been charged with want of tact. I know I have many shortcomings but I do not believe that is one of them. I may say that the origin and genesis of any feeling on the part of the staff arose out of my application of the rules of the hospital to a particular case. It was recommended for admission and it was ineligible.

The CHAIRMAN—Will you just state the case?

MR. RAWLINGS—It was a case where an idiot child that had been adjudged an idiot by the examining physician was brought to the Board room for me to see and I was asked by the steward whether it would be right to admit that child to the ward. The child was undoubtedly a most terrible idiot. If I were to enter into particulars it would take me a long time, but as far as is necessary to do so I may say that it was spitting all over the carpet of the Board-room during the few minutes its mother was with me, it was kicking at the furniture, and it tried to upset the ink; and, besides that, it was making a great many noises. The mother told me that was the condition of the child from morning to night, and almost from night to morning. It was proposed to send that child, contrary to our rules, into the children's ward; and I refused to sign the order for its admittance. The case was ultimately referred to the Board of Management, but I have simply to point out that in carrying that out I was obeying my rules—the rules under which I work—after the physician himself had noted the case as a case of idiocy, and therefore I was only putting this rule into operation.

MR. PEARMAN—Will you read the rule, Mr. Rawlings?

MR. RAWLINGS—The bye-law is this, on page 58 of the rules: "Persons labouring under or liable to attacks of epileptic mania or who are imbecile" are ineligible. No. 4: "All other persons of unsound mind, unless the examining physician is able to certify that the mental symptoms are temporary and due to some bodily condition which may be speedily removed by treatment, and will not render them a source of danger or serious discomfort to other inmates," are also ineligible. What I have to point out to you is that this child would have been a source of great discomfort to, and, in fact, it would have been a most terrible infliction on, the other children in the wards to have allowed that child to go there, but from that one instance I think all the trouble has arisen. I certainly know of no other case in which I have been in collision with the staff.

The CHAIRMAN—We have now disposed of the controversial part of our business and, as I said at the outset, the Board of Management do not wish to prejudice the discussion of the second question by indicating any opinion one way or another. We are confined by the terms of our notice to discuss the one resolution which has been disposed of. As to the second, whether it is desirable to hold a further inquiry into the condition of the hospital, I have no instructions to move a resolution upon that, but it is open to any governor to move such a resolution and failing the moving of such resolution the subject must be dropped.

MR. INNIS—May I ask you, sir, to give a statement as to the number of proxies that you hold on behalf of the Board?

MR. MELVILLE GREEN—The proxies were not counted.

MR. INNIS—I am quite aware of that; but Sir Henry Burdett, who has left the meeting, requested me to ask that.

The CHAIRMAN—I must ask the secretary to give the details.

The SECRETARY—At present the Board holds the proxies of 170 governors.

MR. MELVILLE GREEN—Is that the end of the business?

The CHAIRMAN—There is nothing else on the agenda.

MR. MELVILLE GREEN—Then, sir, as I have been the only opponent of the Board may I move a vote of thanks to the Chairman for his conduct in the chair, which I do very cordially indeed.

MR. BOWER—Might I suggest that the best thanks be not only given to the Chairman for his conduct in the chair but also to his colleagues on the Board for their past conduct in the management.

MR. MELVILLE GREEN—I think we had better put it as colourless as we can. We must be as colourless as possible. There can be only one opinion as to the way this meeting has been conducted, but if there is any difference of opinion about other things I do not think we ought to express it.

MR. INNIS—I shall have very great pleasure in seconding the resolution.

The resolution was carried *nem. con.*

The CHAIRMAN—Allow me to thank you, ladies and gentlemen. I make my acknowledgments to the governors, in the first place, for putting me in the chair, and in the second place for supporting me in it, and now for thanking me for my conduct in conducting the meeting. I understand Mr. Bower wishes to move something else.

MR. BOWER—I think, sir, after the expression of opinion from Mr. Green I will not do so.

# Parliamentary Intelligence.

*The Session from a Medical Point of View.*

THE session of Parliament which closed on Wednesday, August 8th, cannot be said to have yielded much in the way of legislation of special interest or value to the medical profession. Measures of this description were introduced in both Houses, but few of them made substantial progress and fewer still passed into law. The sum of the latter is represented by a Public Health Act for Ireland, an Act to prohibit the employment of children underground in mines, and an Act enabling county and town councils in Scotland to impose a rate to meet the expenses of the Inebriates Act of 1898. An important Bill was introduced in the House of Lords by the Government to amend and strengthen the administration of the Lunacy Laws. It was designed, among other things, to deal with such irregularities as have been exposed recently in St. Pancras and other metropolitan parishes in connection with the certification and accommodation of lunatics. The Bill made a quick and comparatively easy passage through the House of Lords, but it came to grief and was abandoned in the House of Commons in spite of the cordial recommendation which it received from the Lord Chancellor. Medical men set great store by the Companies Bill because it contained a clause saying that it shall be unlawful for a company to carry on the profession or business of a physician, surgeon, dentist, or midwife. This clause was intended to put down unqualified and fraudulent practice by registered companies who in the present state of the law defy the Medical Acts. At one time it constituted a Bill by itself, but last year at the instance of the Lord Chancellor it was put into the Companies Bill when that measure was before the House of Lords. In the session just concluded the Bill was introduced in the House of Commons and when it fell to be considered by one of the standing committees the Minister in charge of it, Mr. Ritchie, President of the Board of Trade, supported a motion for the omission of the clause. He did so on the ground, not that he objected to the proposed extension of the law, but that he considered the clause was not germane to the Bill. In the Standing Committee Mr. Ritchie was defeated, but when the Bill was considered in the whole House on report he carried his point and the clause disappeared from the Bill. Sir John Batty Tuke, representing medical opinion, expressed regret at the course adopted by the Government, and intimated that in another session he will bring forward proposals on the subject. Another disappointment was the loss of the Medical Acts Amendment Bill. This measure was introduced late in the session by Sir Richard Jebb, and though it was known to have the support of all the university representatives and of the President of the Privy Council it failed to pass—indeed, it got no further than the first reading. It is scarcely necessary to explain that the Bill was the handiwork of the General Medical Council and was designed to strengthen the disciplinary powers of that body and enable universities and medical corporations to withdraw their diplomas from men who have been removed from the Medical Register for misconduct. General Laurie introduced a Bill to entitle certain colonial medical practitioners to registration, but he made no progress with it. What suggested the Bill to General Laurie was the refusal of the War Office to accept the services in South Africa of Canadian surgeons on the ground that they were not registered. Another measure which proved abortive was the Medical Officers of Health and Sanitary Inspectors Bill. It was introduced by Dr. Farquharson and sought to improve the tenure of these important public officials and provide for them a system of superannuation allowance. No progress was made with it beyond the first-reading stage. Other Bills which failed to pass were the Petroleum Bill, to raise the statutory flash point of petroleum; the Dogs Regulation Bill, a measure introduced by the President of the Board of Agriculture as a substitute for the muzzling orders; the Factories and Workshops Bill; the Cremation Bill; and the Isolation Hospitals (Amendment) Bill. The Midwives Bill requires mention by itself. It was introduced early in the session by Mr. Tatton Egerton and coming on unexpectedly one Wednesday afternoon it received a second reading and was referred to the Standing Committee on Law. This Committee went through the clauses and made many amendments as well as several additions. The Bill came back to the House on March 27th but its report stage was not reached until after Whitsuntide and then only during the last hour of the last sitting allocated to Bills promoted by private Members. A motion was made for the rejection of the Bill and this motion was "talked out," the last speaker before Mr. Heywood Johnstone, one of the chief promoters, who appealed to the Government to take up the subject in another session. It is a safe conjecture that if in another session the Government do not take it up Mr. Heywood Johnstone and his friends will put forward another Bill of their own. There are two subjects upon which many medical men looked for legislation during the past session—one death certification and the other the use of preservatives and colouring matters in food. With regard to the former Mr. Chaplin has made a public declaration that he is inquiring into the subject with a view to legislative proposals, while with regard to the latter all that can be said is that Sir Herbert Maxwell's Committee has not yet reported, pending the conclusions of an experimental inquiry.

PRESENTATION TO A MEDICAL MAN.—Mr. R. Allan, M.D. Glasg., medical officer of health of the Burgh of Ardrossan, was on July 31st entertained to dinner in the Eglinton Arms Hotel on his having completed 25 years' medical practice in the burgh, the occasion being marked by the presentation to him of a massive piece of silver plate and a purse containing £140 as testimonials of the respect and confidence he had gained from all classes of the community.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADDISON, E. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of the Workhouse and the Coddenham Sanitary District of the Bosmere and Claydon Union, vice M. T. Kelly, resigned.

BATHURST, L., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Urban District of Ellesmere and the Civil Parishes of Ellesmere Rural, Welshampton, Cockshuff, and Hordley, in Ellesmere Rural District.

BATTEN, WILLIAM SMITH, M.R.C.S., L.S.A., has been re-appointed Medical Officer for the No. 2 District of the Calne Union.

BRANGAN, J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of the Kilskyre Dispensary District, vice T. Canton, deceased.

BRISCOE, WILLIAM THOMAS, A.B., M.D., M.C.H. Dubl., has been appointed Medical Officer to the Chippenham Isolation Hospital by the Chippenham Town Council.

CALNAN, P. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Surgeon to the Midland Railway Company for the Syston District of Leicester, vice W. C. Dalley, resigned.

CLARK, R. D., M.B., B.S. Aberd., has been appointed Assistant Medical Officer to the Walton Workhouse of the West Derby Union, vice E. J. Weightman, resigned.

DALLEY, H. P., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Surgeon to the Midland Railway Company for the Syston District of Leicester, vice W. C. Dalley, retired; also Medical Referee to the Prudential Assurance Company for the Syston District of Leicester, vice W. C. Dalley, retired.

HARDING, NORMAN E., M.B., Ch.B. Edin., has been appointed Civilian Medical Officer to Her Majesty's Forces in South Africa.

HUTCHINSON, C. G., L.R.C.P. Irel., M.R.C.S., has been appointed Medical Officer to the Bluecoat School, Birmingham.

JONES, J. H., M.B., M.S. Glasg., has been appointed Certifying Surgeon under the Factory Acts for the Maesteg District of Glamorganshire.

KING, A., M.B., C.M. Edin., D.P.H. Lond., has been appointed Medical Officer of Health for the Watford Urban District, vice D. H. Attfield.

LITTLER, R. M., F.R.C.S., D.P.H. Vict., has been appointed Certifying Surgeon under the Factory Acts for the Borough of Southport, Birkdale Urban District, and the civil parishes of Ainsdale and North Meols, in Ormskirk Rural District.

MACKENZIE, D. J., M.D. Aberd., has been re-appointed Medical Officer of Health by the Glossop Town Council.

RAMSDEN, H., M.D. Lond., D.P.H. Vict., has been appointed Medical Officer of Health for the Saddleworth Urban District, vice W. H. F. Ramsden, deceased.

REES, W. L., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Urban Districts of Aberdare and Mountain Ash.

ROBINSON, W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Preesall with Hackinsall Urban District.

SKIPWORTH, H., L.R.C.P. Irel., M.R.C.S., has been re-appointed Medical Officer of Health by the Quorn Urban District Council.

SYKES, WILLIAM, M.D., has been appointed Honorary Medical Officer to the Woking Victoria Cottage Hospital.

THOMAS, G. CREWDSON, M.B., C.M., M.R.C.P. Edin., has been appointed Registrar to the Chelsea Hospital for Women, Fulham-road, London.

THOW, AUGUSTUS VIVIAN, M.B., C.M. Aberd., has been appointed Surgeon to the Police at Devizes, vice J. Ambrose, resigned.

WILLIAMS, W. R. E., M.B., Ch.B Edin., has been appointed Assistant Medical Officer to the Infirmary of the West Derby Union, vice J. Hay, resigned.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

ASHANTI FIELD FORCE.—Experienced Dressers for six months in the Colony, with pay at the rate of £20 a month, and other money, &c., arrangements. Address to the Assistant Private Secretary, Colonial Office.

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (WESTERN BRANCH AND COTTAGE HOSPITAL), 113, Queen's-road, Brighton.—House Surgeon. Salary £120 per annum, with board and residence.

CANCER PAVILION AND HOME, Manchester.—Surgical Officer.—Applications to Mr. E. W. Marshall, 38, Barton Arcade, Manchester.

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the House.

CITY OF BOMBAY.—Executive Health Officer for five years, renewable conditionally. Monthly salary arranged.—Apply to the Municipal Commissioner for City of Bombay, care of Mr. John Lithiby, Local Government Board, Whitehall.

CITY OF LONDON LYING-IN HOSPITAL, City-road, E.C.—District Surgeons to the Hospital for the Eastern Division of Bethnal Green and for South Tottenham.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals for the Treatment of Cases of Infectious Diseases. Salary £150 per annum, with board, lodging, and attendance. Applications to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Salary commencing at £125 per annum with the usual allowances.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—In-door Dispenser and Assistant to the House Surgeon. Honorarium 20 guineas per annum, with board, lodging, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST SUFFOLK AND IPSWICH HOSPITAL, Thorofare, Ipswich.—Second House Surgeon, unmarried. Subject to annual re-election. Salary £70 per annum, with board, lodging, and washing.

GENERAL INFIRMARY, LEEDS.—A House Surgeon and a House Physician. The former appointed for 12 months and the latter for six months. Board, lodging, and washing provided.

GESTO HOSPITAL, Isle of Skye, N.B.—Resident Medical Officer. Salary £200 per annum, with free furnished house, garden, coals, light, and taxes. Apply to Mr. J. Simpson, Portree.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Anæsthetist for twelve months. Honorarium 10 guineas per annum. Applications to Mr. L. H. Glenton-Kerr, Secretary.

HEREFORD COUNTY AND CITY ASYLUM.—Locum Tenens Assistant Medical Officer for ten or twelve weeks about the end of August. £3 3s. a week, with board, lodging, washing, and attendance.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY, 74, King-street, South Shields.—Junior House Surgeon. Salary £75 per annum, with residence, board, and washing.

ISLAND OF GUERNSEY.—Medical Officer of Health. Salary £200 (British currency), with local travelling expenses. Applications to be addressed, "Board of Health," States Office, Guernsey.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per annum, with board and washing.

NORTHAMPTON GENERAL INFIRMARY.—Assistant House Surgeon, unmarried. Salary £75 per annum, with furnished apartments, board, attendance, and washing.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road.—Assistant Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon, unmarried. Salary £140 per annum, all found except board.

OWENS COLLEGE, Manchester.—Additional Demonstrator in Anatomy, for the Winter Session.

PARISH OF SLEAT.—Medical Officer and Public Vaccinator. Salary £100 per annum. Applications to the Chairman, F. C. Manse, Sleat, Broadford, N.B.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with board, lodging, and washing.

ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AT VENTNOR.—Clinical Assistant. Salary £40, with board and residence. Apply to the Secretary, London Office, 34, Craven-street, Strand, W.C.

ROYAL ORTHOPÆDIC HOSPITAL, 297, Oxford-street, London.—House Surgeon and Registrar for six months, unmarried. Salary at the rate of £100 per annum, with residence and partial board.

RUBERY-HILL ASYLUM, Barnt Green, Worcestershire.—Junior Assistant Medical Officer, unmarried.

ST. GEORGE'S AND ST. JAMES'S DISPENSARY, 60, King-street, Regent-street, W.—Locum Tenens for one week. Salary 4 guineas, and residence. Personal applications.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer, at the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £50, with furnished apartments, board, and washing. Applications to the Clerk to the Guardians, West Bar, Sheffield.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy as Certifying Surgeon under the Factory Acts at Edenbridge, in the county of Kent.

TOWNSHIP OF MANCHESTER.—Junior Resident Assistant Medical Officer at the Workhouse at Crumpsall for one year, unmarried. Salary £100, with furnished apartments, fire, light, washing, and attendance. Apply to the Clerk to the Guardians, Offices, New Bridge-street, Manchester.

UNIVERSITY OF GLASGOW.—Professor of Clinical Medicine.

UNIVERSITY COLLEGE, CARDIFF.—Demonstrator and Assistant Lecturer in Anatomy and Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120.

VICTORIA HOSPITAL FOR CHILDREN, Queen's-road, Chelsea.—Resident Medical Officer for six months. Honorarium £25, with board and lodging in the hospital.

VICTORIA HOSPITAL FOR CONSUMPTION, Craigleith, Edinburgh.—Resident Physician. Residence and board and nominal honorarium in lieu of conveyance. Also non-resident Clinical Assistant. Honorarium at the rate of £60 per annum. Both appointments for six months. Apply to the Hon. Secs., 1, North Charlotte-street, Edinburgh.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

ASHBY.—On August 7th, at Bilton Garth, Hampsthwaite, *viâ* Leeds, the wife of John Ashby, M.R.C.S., of a son.

BAKER.—On August 9th, at The Mount, Witley, Surrey, the wife of John Charles Baker, M.B., of a daughter.

CARGILL.—On August 9th, at Bickenhall Mansions, Gloucester-place, W., the wife of L. V. Cargill, F.R.C.S., of a daughter.

COOKE.—On August 11th, 1900, at Bridge-street, Cambridge, the wife of Arthur Cooke, F.R.C.S., of a daughter.

CORBIN.—On August 10th, at Moore House, Beckenham, Kent, the wife of E. R. St. Clair Corbin, M.B. Lond., M.R.C.S., of a daughter.

CORY.—On August 9th, at Tower House, Bournemouth, the wife of E. R. Haines Cory, M.R.C.S., L.R.C.P. Lond., of a son.

MEGGISON.—On August 11th, at Lewisham High-road, St. John's, S.E., the wife of T. C. Meggison, M.D., of a son.

NEALE.—On August 8th, at St. Margarets, Twickenham, the wife of Albert E. Neale, M.B., B.S., of a daughter.

STUART-LOW.—On August 12th, at Yealand, Herne-hill, S.E., the wife of William Stuart-Low, F.R.C.S. Eng., of a son.

WILLIAMS.—On August 13th, at Dunstaffnage, Brockley, S.E., the wife of Chisholm Williams, F.R.C.S. Edin., of a daughter.

## MARRIAGES.

AHRENS—WILKINSON.—On August 8th, at St. John's Church, Upper St. Leonards-on-Sea, Henry Augustus Ahrens, M.R.C.S., L.R.C.P., of Basingstoke, to Beatrice, daughter of the late George Goodley Wilkinson of Delamere-road, Wimbledon.

CLEVELAND—JACKSON.—On August 11th, at St. James's, Kidbrook, Arthur John Cleveland, M.D. Lond., M.R.C.P., youngest son of the late Henry Cleveland of Blackheath, to Evelyn Mary, elder daughter of Edward Jackson of Blackheath and Karachi, India.

SCORER—NORRIS.—On August 9th, at Holy Trinity, Bournemouth, by the Rev. C. P. Koelle, M.A., assisted by the Rev. Malcolm W. Brown, M.A., Frank Scorer, M.R.C.S., L.R.C.P., second son of Alfred Scorer of Upper Hamilton-terrace, London, to Violet Eleanor Norris, only daughter of Alfred Norris of Catford, Kent.

SYMONS—BENNETT.—On August 9th, at Salisbury Cathedral, Captain Frank Albert Symons, Royal Army Medical Corps, son of John H. Symons of Halifax, Nova Scotia, to Dorothy, second daughter of the late Edmund Grove Bennett, of The Close, Salisbury.

TAYLOR—SOUTHALL.—On August 10th, at the Friends' Meeting House, Bull-street, Birmingham, E. Claude Taylor, M.D., M.S., of Eland House, Hampstead, and Huldah R. Southall, daughter of Alfred Southall of Birmingham.

## DEATHS.

ANDERSON.—On August 9th, at New-cross-road, S.E., John Anderson, M.D., in his 82nd year.

BARKER.—On July 7th, 1900, at Kuching, Sarawak, Constance, the dearly beloved wife of A. J. G. Barker, Principal Medical Officer, Sarawak.

BLAKE.—On August 10th, suddenly, at his residence, Denbigh-road, Bayswater, Andrew Henry Blake, M.R.C.S., aged 60.

MALLETT.—On the 8th instant, at his residence, Newport House, Bolton, Frederic Blakesley Mallett, M.D., J.P., aged 59 years.

O'CALLAGHAN.—On August 12th, at Queen's Mansions, Surgeon-General Daniel James O'Callaghan, late of the H.E.I.'s Co.'s service, in his 85th year.

SIMPSON.—On August 11th, at Auchengrange, Lochwinnoch, Pierce Adolphus Simpson, M.A., M.D., Emeritus Professor of Forensic Medicine, Glasgow University, aged 63.

SMITH.—On August 12th, at Grafton-terrace, Cheltenham, Samuel Wagstaff Smith, M.D., late of Pershore, Worcestershire, in his 65th year.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE PROTECTION OF PARTURIENT WOMEN AND NEWLY-BORN CHILDREN.

*To the Editors of* THE LANCET.

SIRS,—At the quarterly meeting of the Medical Guild held at the Medical Common Room, 64, Bridge-street, Deansgate, Manchester, on July 26th last I had the honour of proposing that the council should be instructed to take into consideration the drawing up of a scheme for the "protection of parturient women and newly-born children with a view to legislation." This was carried and the council have appointed a sub-committee to deal with the question. As I am the honorary secretary of the committee I shall be glad to have any suggestions from any of your readers in order to make the scheme as satisfactory as possible to the profession at large and one which shall have its cordial support. The main idea is suggested in the title and this will be rigidly adhered to and differs from previous attempts at legislation whose object has been more or less for the registration and legal promotion of midwives. We contend that as far as possible the skill of those legally registered to practise medicine, surgery, and midwifery should be placed by the State at the disposal of every parturient woman—that public obstetricians should be appointed in all districts with a view to this, just as we have public vaccinators who are paid by the State, and as the public is protected by local corporate bodies by the compulsory notification of infectious diseases. I do not consider it necessary to enlarge upon the advantages to public health which such a scheme if properly carried out would be. So long as the committee receive as many suggestions as possible it is a matter of indifference whether they are addressed to me personally or appear in your columns with a view of giving rise to a discussion. The more the matter is discussed the more likely are we to arrive at a sound and lasting conclusion of this difficult question. On the other hand, if practitioners will not avail themselves of opportunities to express their views upon this subject either publicly or privately they will have no one to blame but themselves if legislation takes place in a manner contrary to their desires.

I am, Sirs, yours truly,

G. H. BROADBENT.

Ardwick-green, Manchester, August 11th, 1900.

## "A MAN WITH A QUIVERFUL."

UNDER the above heading the August number of the *Dublin Journal of Medical Science* mentions that a French Canadian living in a Rhode Island town was recently presented by his third wife with his forty-first child. His first wife gave birth to several pairs of twins, and his second presented him with three sets of triplets. Thirty-six of the children are living and many of them have families of their own. Eight of the grandchildren also are parents.

## A DISGUSTING THREAT.

*To the Editors of* THE LANCET.

SIRS,—I have had during the last week an anonymous letter which I know by the writing to be from a medical student who has only to take his final now. In it he says: "I will meet you one day," and here he threatens to scratch me with a hypodermic syringe containing syphilis bacteria. He puts it: "Not death but disease." Now I fully believe that this heathen is fool enough to try something on like this. Is it possible that the imbecile could have the power to get hold of stuff like this, and would a scratch be sufficient to inoculate anyone with such a disease? If so, it is high time that such things should be well looked after and put out of the way of such lunatics who aspire to the medical profession. I don't wish to harm the fellow (as I most certainly could do on production of the letter) for the sake of his father and mother.—I am, Sirs, yours faithfully,

August 14th, 1900. NEMO.

*** Successful inoculation under the circumstances described would be rather difficult and disinfecting measures applied immediately might nullify the poison. The threat is probably an idle one; but it is of such a heinous character that we advise our correspondent, having made quite certain that he knows the offender's identity, to communicate with someone having authority over him—either his parents or the police. No one should be allowed to write such letters with impunity. But just because the offence is so serious our correspondent must be particularly careful not to make his accusation on any but the most convincing evidence.—ED. L.

## A NOTE ON SOUND.

*To the Editors of* THE LANCET.

SIRS,—Walking with a lady, and in earnest conversation with her about our unhappy South African war, with a sudden gesture she said: "Doctor, I must go home quick, baby is crying." We were a mile from the house, out of sight of the house, but in 15 minutes we found that it was quite true. The baby—four months old—had been crying for a quarter of an hour. We have not lost our acute sense of sound. In this case thought and the sight of the dwelling seemed to

be out of the question, and only hearing could account for the call given. The wonderful weird quiet of a calm night on the South African veldt is so different, recognisable but indefinable, from the gentle murmur which awakes man and beast as the impact of daylight mobilises every atom on the face of the land. The vulture perhaps sees the dying beast lying on the open veldt; probably smells it as putrefaction sets in; but the heavy breathing and the groan of a dying animal are in all likelihood sufficient to fetch him many miles from his haunts, to hover over his prey till the end has come. The vulture is a coward and does not approach the house in which dying or dead lie.

I am, Sirs, yours faithfully,

J. H. NANKIVELL, M.R.C.S.,
House Surgeon, Butterworth Hospital.

Cape Colony, July 14th, 1900.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, August 16th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. Shade. | Min. Temp | Wet Bulb. | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 10 | 29·86 | N.W. | 0·13 | 95 | 65 | 55 | 55 | 57 | Overcast |
| ,, 11 | 30·32 | S.W. | ... | 108 | 76 | 53 | 57 | 60 | Hazy |
| ,, 12 | 30·34 | S.W. | ... | 111 | 83 | 58 | 63 | 68 | Bright |
| ,, 13 | 30·37 | W. | ... | 119 | 88 | 60 | 63 | 67 | Hazy |
| ,, 14 | 30·35 | N. | ... | 119 | 85 | 62 | 62 | 67 | Hazy |
| ,, 15 | 30·30 | S.E. | ... | 115 | 74 | 60 | 61 | 65 | Cloudy |
| ,, 16 | 30·12 | E. | ... | 116 | 76 | 60 | 62 | 66 | Bright |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (20th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (21st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (22nd).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

**THURSDAY (23rd).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY (24th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

**SATURDAY (25th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (20th).**—WEST LONDON POST GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. McAdam Eccles: The Application of Splints to the Upper Extremity.

**THURSDAY (23rd).**—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Mr. McAdam Eccles: The Application of Splints to the Lower Extremity.

## EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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**During the week marked copies of the following newspapers have been received:** *Aberdeen Journal, Nottingham Guardian, Daily Mail (London), Cheltenham Examiner, Times of India, Pioneer Mail, Scotsman, Builder, Architect, Liverpool Daily Post, Glasgow Herald, Sheffield Independent, Birmingham Gazette, Sussex Daily News, Yorkshire Post, Leicester Post, Bradford Observer, Manchester Guardian, Sanitary Record, Hertfordshire Mercury, Local Government Chronicle, Reading Mercury, Mining Journal, City Press, Essex Weekly News, Newcastle Journal, Surrey Advertiser, Daily Messenger (Paris), Hampshire Independent, Bristol Times, Aldershot News, Belper Chronicle, Pudsey District Advertiser, Building News, African Review, Alliance News, Coventry Times, Poole Herald, Canterbury Times, Draper's Record, Midland Daily Telegraph, Warwick Times, Ayrshire Post, Caithness Courier, Surrey Comet Citizen, &c., &c.*

## Communications, Letters, &c., have been received from—

A.—Dr. A. Anderson, Sheffield; Mr. J. W. Arrowsmith, Bristol; Messrs. Allen and Hanburys, Lond.

B.—Dr. J. L. Bond, Ukiah, Cal., U.S.A.; Mr. L. Browne, Lond.; Messrs. Bedford and Co., Lond.; T. B. Browne, Ltd., Lond.; Mr. G. F. Blake, Dublin; Messrs. H. P. Bulmer and Co., Hereford; Mr. R. Baker, Lond.; Messrs. Bates, Hendy, and Co., Lond.; British Medical Association, Victorian Branch, Hon. Secretary of; Mr. A. Black, Lond.; Sir J. Burdon-Sanderson, Oxford; Mr. R. E. Bluett, New Barnet; Mr. J. T. Blease, Altrincham; Mr. G. H. Broadbent, Manchester; Señor Mendez Bejarano, Lond.

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Q.—Queen's College, Galway, Registrar of.

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Y.—Yorkshire College, Leeds.

## Letters, each with enclosure, are also acknowledged from—

A.—Mr. R. R. Anderson, Fern Hill; Aberystwyth Corporation, Clerk of; A. W. D.; A. H.; A. I.

B.—Mr. A. Brook Batley, Leyton; Mr. W. H. Bishop, Wylam-on-Tyne; Bristol Royal Infirmary, Secretary of; B. B.; Bedford and County Hospital; Messrs J. N. Bishop and Sons, Lond.; Birkenhead Borough Hospital, Secretary of; Messrs. T. D. Bostel and Sons, Lond.; Mr. E. Blatchley, Lond.; Mr. B. Byrne, Lond.; Bexhill Publishing Co., Bexhill-on-Sea; Mr. B. Brown, Huddersfield; Barnwood House Hospital, Gloucester; B. F.; Mr. A. J. Barker, Sarawak, Singapore; Dr. J. C. Baker, Witley; Messrs. Burroughs Wellcome and Co., Lond.

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# An Address

ON

# THE CELLULAR PATHOLOGY OF TO-DAY.

*Delivered in the Grande Salle of the Sorbonne, Paris, to the Thirteenth International Medical Congress, August 6th, 1900;*

BY SIR J. BURDON-SANDERSON, BART., M.D., F.R.C.P., F.R.S.,

REGIUS PROFESSOR OF MEDICINE IN THE UNIVERSITY OF OXFORD.

GENTLEMEN,—May I be permitted first of all to express to you my high appreciation of the honour you have conferred on me by inviting me to address you on so important an occasion. I desire at the same time to thank our French colleagues on my own behalf and on that of the English members of the Congress for their friendly welcome.

Forty-seven years ago, after graduating in Edinburgh, I repaired to Paris for the purpose of completing my medical education. At that time Paris afforded facilities for clinical study which were not to be had in England. To myself it was an additional inducement that there were in Paris well-organised laboratories for practical instruction in chemistry, histology, and physiology. Moreover, the period was one of great activity and progress. Claude Bernard had recently achieved his greatest discoveries, those relating to the functions of the liver, the pancreas, and the processes of digestion. Brown-Séquard had just demonstrated the functions of the vaso-motor nerves and was already engaged in his investigations of the functions of the spinal cord. It was to Paris that every student repaired who desired to become acquainted with the most recent advances in physiology.[1]

The progress of pathology at the time we are considering was no less remarkable than that of physiology. It was then that the "cellular pathology"—the doctrine which has so powerfully influenced the progress of scientific medicine—was originated by Virchow. Nearly 20 years had elapsed since the discoveries of Schwann and the promulgation of the "doctrine of the cell." The science of histology had been developed by Charles Robin in France, by Bowman in England, by Henle and above all by Kölliker in Germany. Of these remarkable men one only is still with us. To Kölliker we can to-day address our congratulations on a life-work of unparalleled fruitfulness. It was from Kölliker's university, Würzburg, that the "cellular pathology" emanated. The book which bore this title was not published until Virchow had migrated to Berlin (in 1856), but since 1847, when the first volume of the "Archiv" appeared, the doctrine had been step by step set forth. A few years later (1862) von Recklinghausen made the capital discovery that the colourless corpuscle of the blood was not, as had been previously thought, a vesicle containing a nucleus, but rather an organism full of life and movement which possessed the wonderful faculty of incorporating minute particles suspended in its liquid environment. Five years later (1867) another pupil of Virchow, Cohnheim, made the further discovery that pus can be formed by the emigration from the blood-vessels of these same corpuscles, but it was not until after Cohnheim's death that the key to the mystery which he had in vain sought to penetrate was discovered by Leber[2] in the analogy of the phenomenon in question to that to which the botanist Pfeffer had given the name of "chemotropism."

I have adverted to these discoveries relating to the functions of the cell for the purpose of setting forth the relations between the cellular pathology of to-day and the cellular pathology as originated by Virchow in the "fifties." There can be no doubt that the tendency of pathological research has undergone a marked change since that time. Formerly the histological characters of morbid processes—of inflammation, of tuberculosis, and of other organic diseases—were the subjects of special interest. Now it is the microbe. It would, however, be a mistake to suppose that the new science of microbiology has hindered the progress of histology. On the contrary, histological research has never been pursued with more zeal and success than during what may be called the bacteriological period (1880 to the present time). I need only refer to the discovery of karyokinesis (1873–82) and to the wonderful advances in the microscopical study of the nervous system which we owe to Golgi, to Cajal, and to the army of artists in histology who are now working in the same field.

There are at the present moment few who doubt the value of bacteriological diagnosis or of serum therapeutics. These are the practical, life-saving results of bacteriological research. But it is not in these directions that microbiology is at present exercising its chief influence on the science of medicine; it is rather that it has given us a new and more comprehensive idea of the physiological functions of the cell and consequently of cellular pathology. Pathology is no less fundamentally cellular than it was when Virchow so designated it in the title of his book. But the word "cellular" has now a wider signification, for it comprises not merely histological changes, but the chemical reactions which subsist between the cell and its environment. Formerly we regarded each kind of cell as having a single special function proper to itself, but the progress of investigation has taught us that each species of cell possesses a great variety of chemical functions and that it may act on the medium which it inhabits and be acted upon by it in a variety of ways. Thus, for example, we think of the colourless corpuscles of the blood (or, as we now call them, leucocytes) not merely as agents in the process of suppuration or as typical examples of contractile protoplasm, but rather as living structures possessing chemical functions indispensable to the life of the organism. Similarly we have come to regard the blood disc, which formerly we thought of merely as a carrier of hæmoglobin, as a living cell possessed of chemical susceptibilities which render it the most delicate reagent we can employ for the detection of abnormal conditions in the blood.

The tendency of recent research is to show that the reactions to which I have referred as chemical functions of the cell (action of the cell on its environment—action of the environment on the cell) are the work of ferments—intrinsic or extrinsic—which are products of the evolution of the living cell and therefore to which we may apply the term "enzymes"[3] devised for them by the great physiologist whose loss we at this moment so bitterly deplore. Can we go a step further and accept the suggestion which presents itself that *all* the functions of the cell are due to the agency of enzymes? The question is one which we are bound to answer with great reserve. The utmost that can be said is, that if we exclude from consideration the functions which Bichat designated as functions of animal life—in other words, the functions proper to the nervous system and under its immediate control—we may as regards organic functions accept the suggestion as probably true. Recent researches have plainly indicated that in the case of the disease-producing micro-organisms, the specific functions which for years we regarded as proper to, and inseparable from the cell, belong essentially to the enzymes which they contain. It has been further shown that similar statements can be made as regards ferment-processes which differ widely from each other and no less widely from those induced by bacteria. Thus, if I may be allowed to quote the striking language employed by M. Duclaux[4]: "There are ferments which by slipping a molecule of water into the midst of a complex molecule divide it into two or three more simple ones, as an iron wedge splits a block of wood, and others which can reconstitute the block by re-uniting its dissociated elements. Again, there are enzymes which conduct oxygen to the bodies on which they exert their action," and others "which break up a chemical compound as the explosion of a shell shatters a wall." So that in the domain of microbiology the enzyme may in a certain sense be said to have "dethroned the cell." For if, as M. Duclaux continues, we can extract from the

[1] In 1852–3 the number of English students in Paris was considerable. I worked in the laboratory of the distinguished chemist Gerhardt and subsequently in that of Wurtz and Verdeil, at the same time following the demonstrations of Bernard. The day was divided between hospital attendance before, and laboratory work after, breakfast.

[2] Leber: Die Enstehung der Entzündung, &c., Leipsic, 1891.

[3] The word "enzyme" was introduced by Kühne in 1874. It has been adopted as a general term for soluble ferments which originate from cells by Professor J. R. Green in his important work on Fermentation. For this purpose it is much to be preferred to the word "diastase," which is used by Duclaux and other French writers in the same general sense.

[4] M. Duclaux is the accomplished Director of the Pasteur Institute. The passage quoted is in the final chapter of the second volume of his comprehensive treatise on "Microbiology."

cell a substance which breathes for it, another which digests for it, another which elaborates the simple from the complex, and finally another which reconstitutes the complex from the simple, the cell can no longer be considered as *one*, but rather as a complicated machine, the working of which is for the most part dependent on enzymes, which, however numerous and varied may be the processes in which they are engaged, all follow and obey the universal law of adaptation and all contribute to the welfare and protection of the organism.

Admitting that we may provisionally delegate the function of the cell to its enzymes the question may still be asked whether by doing so we acquire a better understanding of organic life. The answer may, I think, be easily given. The only way in which we can explain a vital phenomenon is by determining its non-vital conditions. The essence of physiological experimentation consists in the elimination of the mystery of life.[5] As regards each chemical function of the cell, taken separately, the first step towards this result is to reproduce *in vitro* what one has observed *in vivo*. Even though it may be impossible to state the nature of the process in chemical language, it is a great advantage to be able to study its relation to external conditions which have nothing to do with its vital origin. In illustration of this we may take a physiological process in relation to the nature of which the vitalistic idea has held its ground with great pertinacity—the alcoholic fermentation. It was not until 70 years had elapsed since the discovery of the yeast-plant, that Buchner, by employing more effectual methods than had been devised by his predecessors was at last able to prove that the alcohol-producing enzyme can be separated from the zymogenetic cell—i.e., that the chemical process which has been the source of so much good and evil to the human race may be brought about without the direct intervention of the living protoplasm. Another instance of nearly equal interest is that of the recent discovery and investigation *in vitro* by M. G. Bertrand[6] of the ferments on which certain plant-cells depend for the power which they possess of quasi-respiratory oxidation and the experimental proof which he has given that this is effected by the agency of an oxidising enzyme. It cannot be said that in either of these instances the way in which the enzyme acts can be *explained*.[7] In each case a process hitherto regarded as vital has been shown to be chemical, but the mode of action of the enzyme cannot as yet be stated in chemical language, so that the value of the discovery lies in the biological importance of the process and the new power which the physiologist has gained of subjecting it to exact investigation. In futherance of that investigation all that chemistry can do at present is to furnish us with efficient technical methods, but eventually—in the course of the next century—there can be no doubt that the purely chemical problems relating to the action of ferments which in the course of the next few years the biologist will one after another submit to the chemist will receive their answers. In the meantime let us avoid skating on thin ice. The value of the generalisation that each chemical function of the cell is the work of an enzyme, however admissible it may seem, depends on the number and importance of the phenomena to the elucidation of which it has been successfully applied. So long, for example, as a process of such fundamental importance as that by which the plant cell with the aid of sunlight is capable of elaborating carbohydrate out of material derived from the atmosphere has not been shown to be zymotic, we must carefully guard against giving the theory anything like the authority of a biological law.

May I now, by way of sequel to the general considerations relating to the chemical functions of cells which have occupied our attention, say something of their bearing on what may be called the "cellular pathology" of to-day, the relation of which to that of 40 years ago I have already indicated. The examples to which I referred just now related to the physiology of the plant cell. Our pathological problems relate to the constituent cells of our own bodies, the chemical functions of which present much greater difficulties to the investigator. It is not difficult to understand why more progress has been made in the investigation of isolated cells, such as coloured and colourless blood corpuscles and the nucleated cells which constitute the adenoid tissues, than in those relating to the constituent cells of organs. From the study of the cells of adenoid tissues we have learned that the nucleus not only governs the development of the cell but that it has chemical endowments which distinguish it from the protoplasm which surrounds it. I need only mention in this connexion the researches made by my friend Sir L. Brunton more than 30 years ago in Professor Kühne's laboratory, the subsequent work of Miescher the discoverer of nucleine, and the much more extended investigations of Professor Kossel of Marburg, which have given us such exact information as to the products of decomposition of nuclear substance.

As regards the coloured corpuscles, important discoveries have been made during the last few years in two directions. They have been studied first in relation to their physical properties, and particularly in relation to their osmotic relations to organic and inorganic substances in solution. I need only remind you of the work done by Professor Hamburger of Utrecht and by Dr. Hedin of Lund in Sweden. Still more interesting results have been obtained by investigations conducted in France and Germany relating to the physiological and chemical conditions which, on the one hand, render them capable of resisting the "globulolytic" action of the blood plasma, or on the other hand, compel them to yield to that action.

As the subject of hæmolysis at the present moment is receiving much attention, both here and elsewhere, I may be permitted to devote a few moments to its discussion. The fact that the blood discs are in general destroyed when they are introduced into the circulation of an animal of a different species has been long familiar to us. A few years ago it was demonstrated by Buchner that the hæmolytic power has its seat in the plasma and consequently in the serum. Still later, M. Bordet of the Pasteur Institute made a remarkable discovery that the hæmolytic process now in question is identical with the well-known "bacteriolysis" which takes place when pathogenic micro-organisms are acted on by the serum of an immunised animal. By a numerous series of observations *in vitro* and *in vivo* he showed that the lytic substance in the serum which acts on the vibrio of cholera and that which acts on the blood discs are identical, provided that the serum also contains a *tertium quid*—a certain substance which has a specific antagonistic relation to the *materies morbi* in the one case, to the "alien" blood-disc in the other. In other words the intruding blood-disc acts, and is acted upon, exactly as if it were an infective agent. To this specific body M. Bordet gave the name of "*sensibiliser*" because it renders the blood-disc or the specific micro-organism susceptible to the attack of the normally present hæmolytic ferment. The "*sensibiliser*" serves, so to speak, as a key, by the application of which the ferment is enabled to penetrate into the interior of the blood-disc so as to act on its susceptible constituents. And inasmuch as it appears to be proved that every blood-disc is liable to be affected by the presence of a plurality of substances possessed of the specific *intromittent* function, it seems as if one must admit that it must possess a corresponding number of specific susceptibilities; for if there are several keys, each differing from all the rest, there must be as many locks to which they severally fit.[8]

It is apparent that these beautiful researches have a special interest in relation to the occurrence of hæmolysis as a symptom—i.e., to the solution of the blood-discs which occurs in a variety of morbid states—but it is by the help which they are likely to afford us in our efforts to understand the origin and essence of disorders of nutrition, that the facts which have been disclosed relating to the chemical physiology of the blood-cells are most likely to be of service.

[5] That is, so much of the mystery as depends on vital conditions. Many physical and chemical processes—e.g., the production of muscular force and, as will be seen further on, the assimilation of carbon by plants, remain mysterious even after the vital element has been eliminated. The physiologist, however, has done his part and can hand over the unsolved problem to the chemist or physicist, as the case may be, with the assurance that eventually the explanation will be got at.

[6] Comptes Rendus, vols. cxxi. and cxxiii., 1895-96.

[7] In physiology and pathology we use the words "explained" and "understand" in a much stricter sense than that in which they are used by some popular writers on biology. To prove that what happens is in accordance with the general law of adaptation is not to explain it.

[8] Those who were present at the lecture given by Professor Ehrlich at the Royal Society last spring will notice that Bordet's "hæmolytic substance," or alexine, corresponds to Ehrlich's "complement" and Bordet's "*sensibiliser*" to Ehrlich's "immune body." The language differs but the experimental data are in agreement. It is proved that two substances are concerned—viz., a hæmolytic substance or "alexine" normally contained in the liquor sanguinis, which cannot, however, exercise its hæmolytic action unless the key to the lock—the *sensibiliser*—be present. M. Bordet's principal results were published in 1898. A second paper appeared this year.

In the action of the liquor sanguinis on alien blood-discs we have an exemplification of the way in which ferments may play a part as the instruments by which the constituent cells of different organs may influence each other for good or evil without coming into contact. When we turn from the blood-discs and leucocytes to the constituent cells of organs, it is obvious that the difficulties of investigation are infinitely greater. The suggestion which naturally presents itself is that the actions on each other of the constituent cells of different organs within the body of the same individual, are brought about in a similar way to those which we have learnt to recognise in the actions of indigenous blood-corpuscles on aliens; that is to say, that among the metabolic products which each species of cell throws into the blood-stream or lymph-stream there are specific substances which are analogous to M. Bordet's "*sensibilisers*" in so far that by their presence or absence the prosperity or decadence—the functional activity or the contrary—of other cells is directly affected. Vague as such language appears it may serve to indicate the lines along which we must work in our efforts to solve some of the most important problems of cell-pathology. In all dystrophic conditions—e.g., in the functional disorder of muscle and of liver-cell which renders these structures incapable of holding carbohydrate in reserve—in the autotoxy which manifests itself in the graver form of diabetes—in the "acid intoxication" which is associated with acute disintegration of the liver—in morbid conditions attributable to "internal secretions"—in all of these instances we have to do with disorders of the chemical functions of cells. In all our endeavours to ascertain the immediate and determining causes of these disorders we may with no less advantage at the present time than formerly allow ourselves to be guided by the principles and methods of the cellular pathology as Virchow taught them nearly half a century ago. The principles remain unchanged; as regards the methods, we have only to add to those we then learned the newer ones which the progress of knowledge has placed within our reach.

# ON THE PATHOLOGY AND THERAPEUTICS OF SCURVY.

BY A. E. WRIGHT, M.D. DUB.,

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I PROPOSE here to place on record the results of a series of examinations of the blood, instituted with the view of testing the correctness of the inferences with regard to the nature of scurvy which were set forth by me in a paper on the Pathology and Therapeutics of Scurvy, printed in the Army Medical Report for the year 1895 (published in March, 1897). The line of thought which runs through the paper in question was briefly as follows.

The scorbutic condition is a pathological condition which is induced by a dietary consisting of meat and cereals to the exclusion of green vegetables, tubers, and fruits. Inasmuch as the food-stuffs which are excluded from the dietary in question are food-stuffs which contain an excess of bases over mineral acids, while the food-stuffs (meat and cereals) which remain are food-stuffs which contain a large excess of mineral acids over bases, it is obvious that the scorbutic condition is one which supervenes upon the ingestion of a considerable excess of mineral acids over bases. It would, in view of this consideration, seem probable that scurvy is a condition of acid intoxication, very similar to the acid intoxication which can be experimentally produced in herbivora by the ingestion of a surplus of mineral acids. The theory that scurvy is essentially a condition of acid intoxication would appear to be in harmony with the circumstance that the rapidity with which the scorbutic condition supervenes depends, apparently, upon the degree to which the mineral acids are in excess in the dietary. The condition is apparently more rapidly superinduced by a dietary of corned meat (i.e., meat which has been rendered hyperacid by the removal in the process of corning of the alkaline salts of the blood and lymph) than by a dietary of fresh meat (i.e., meat which still contains these alkaline salts). Similarly infantile scurvy would seem to be generally dependent upon the substitution of more acid food-stuffs (preparations of cereals sold under the designation of "infant foods") for the less acid food-stuff, milk. Justification for the identification of scurvy with a condition of acid intoxication would appear to be afforded also by the consideration that the scorbutic condition is remedied or alleviated by the addition to the scorbutic dietary of any one of a whole series of different substances—tubers, green vegetables, decoctions of leaves and growing shoots, blood (used for this purpose by the Laps), fruits, and fruit juices—substances which have apparently in common only the circumstance that they all contain an excess of bases over mineral acids. It was pointed out in the conclusion of the paper whose argument has just been summarised that, given the correctness of the above view of the origin and nature of scurvy, the proper prophylaxis and treatment of the condition would consist in the administration of salts of oxidisable organic acids, inasmuch as such treatment would lead by the most direct means to the retention or restoration of the normal alkalinity of the blood.

Enough will now have been said to place the reader in possession of the ideas which dictated the line of inquiry and the therapeutic measures which were adopted in the following cases of scurvy which came under observation in the wards of the Royal Victoria Hospital, Netley.

The question of the presence or absence of a condition of acid intoxication was in each case investigated by the method of hæmalkalimetry. The hæmalkalimetrical method employed was the method which was described by me in a previous communication to THE LANCET.[1] As estimated by that method, the alkalinity of the normal blood is represented by the formula $\frac{N}{35}$. In other words, the alkalinity of the blood is under ordinary conditions of health such that the addition of one volume of a normal acid, 35 times diluted, to an equal volume of serum, just suffices to deprive that serum of its power of blueing sensitive litmus paper.

The particulars of the cases of scurvy which were examined are as follows.

CASE 1.—Private A. Patient was examined on May 1st, 1897, when considerable subcutaneous ecchymoses were found interspersed with smaller purpuric spots on the legs and arms. There was general yellowish discolouration of the skin and brawny discolouration and œdematous effusion of the right foot and ankle. There was no noticeable sponginess of the gums. The alkalinity of the blood was $\frac{N}{100}$. On the 10th three three-gramme (45-grain) doses of acetate of potash were prescribed. There was some resultant diarrhœa. On the 12th the alkalinity of the blood was $\frac{N}{100}$. In lieu of previous treatment two grammes (30 grains) daily of acetate of soda were prescribed. On the 14th the alkalinity of the blood was $\frac{N}{70}$. The same treatment was continued. On the 18th the alkalinity of the blood was $\frac{N}{70}$ and the treatment was persisted in. On the 21st the alkalinity of the blood was $\frac{N}{70}$ and four grammes (60 grains) daily of tartrate of soda were prescribed. On the 24th the alkalinity of the blood was $\frac{N}{55}$ and the treatment was continued. On the 26th the alkalinity of the blood was $\frac{N}{45}$. The patient, who had previously, on a regimen of lime juice, had several recurrences of the purpuric eruption and of the swelling in the foot, became perfectly well.

CASE 2.—The patient, a sergeant, developed typhoid fever on the transport returning from South Africa. On June 12th, 1900, his condition was as follows. There was a characteristic earthy yellow complexion; the gums were spongy, deeply ulcerated, and covered with blood; and the mouth, in spite of treatment with antiseptic washes, was so sore that the patient could hardly speak or drink. The alkalinity of the blood was $\frac{N}{100}$. Four grammes of lactate of soda daily were prescribed. On the 17th the complexion and condition

[1] THE LANCET, Sept. 18th, 1897, p. 719.

of the mouth were found to be much more satisfactory. The patient could speak and swallow without pain. The alkalinity of the blood was $\frac{N}{35}$. The patient afterwards succumbed to typhoid fever.

CASE 3.—The patient, seen for the first time on May 5th, 1900, was a private soldier and was one of the beleaguered garrison at Ladysmith. He had a history of dysentery, complicated by frequent epistaxis. Since the raising of the siege his dietary had consisted exclusively of milk. The patient was seen to be in a very precarious condition. He was extraordinarily emaciated and was too feeble to raise his head from the bed. His complexion was of a dark greenish-yellow colour, like that of a corpse which had been buried. His mouth was very foul, the gums being covered with blood-stained sordes. A thin bloody fluid oozed at times from the nostrils. He had frequent serous motions, especially at night, the calls being so often repeated and so sudden as to prevent sleep. The alkalinity of the blood was $\frac{N}{200}$. One gramme of bicarbonate of soda three times a day was prescribed. On the 7th the blood coagulation time (estimated at the standard temperature of 18·5° C., in coagulation tubes of the standard calibre of 0·25 millimetre), was seven minutes. The quantitative estimation of calcium salts in the blood (estimated by mixing in capillary tubes one volume of pure neutral oxalate of soda solution with an equal volume of blood) showed that the minimum addition of oxalate of soda which sufficed to keep the blood liquid was 1 in 800. The treatment was continued. On the 9th five grammes of lactate of soda were prescribed. On the 10th the lactate of soda was reduced to 2·5 grammes daily. On the 11th the alkalinity of the blood was $\frac{N}{40}$. After this the patient improved in an extraordinarily rapid manner, his complexion becoming healthy and his dysenteric symptoms amending. He left the hospital about eight weeks afterwards looking robust and well nourished, every trace of scurvy having passed away.

CASE 4.—The patient, who also was seen for the first time on May 5th, 1900, had arrived by the same transport as the patient in Case 3. He had been in Ladysmith during the siege. The patient was found to be in an extremely emaciated and very precarious condition. There was the characteristic yellowish-green complexion noticed in the last case and the body was covered with the remains of a (? purpuric) eruption. There was a large sore under the tongue. There were frequent dysenteric stools associated with great pain. The alkalinity of the blood was $\frac{N}{150}$. Two grammes of citrate of potash daily were prescribed. On the 7th the blood coagulation time was eight minutes. The quantitative estimation of lime salts in blood showed that an addition of 1 in 600 of oxalate of soda was the minimum addition which sufficed to keep the blood liquid. The alkalinity of the blood was $\frac{N}{55}$. The same treatment was continued on the 8th and on the 9th five grammes of lactate of soda were ordered. On the 10th the lactate of soda was reduced to 2·5 grammes daily. On the 11th the alkalinity of the blood was $\frac{N}{35}$. The patient made a good but gradual recovery. He is now well nourished and has a clear healthy complexion, but he still suffers periodically from severe intestinal pain.

CASE 5.—The patient was a private soldier who arrived from Ladysmith by the same transport as the patients in Case 3 and Case 4. The diagnosis was dysentery complicated with phthisis. There was no history of bleeding or of purpuric eruption. He was not so reduced as the last two patients, being strong enough to sit up in bed. There was no sponginess of the gums, but the characteristic yellowish discolouration of the skin was present. There were large cavities in both lungs. The alkalinity of the blood on May 5th, 1900, was $\frac{N}{80}$. Three grammes of sodium bicarbonate daily were prescribed. On the 9th five grammes of lactate of soda were given, the dose being reduced on the 10th and following days to 2·5 grammes daily. On the 12th the alkalinity of the blood was $\frac{N}{35}$. The patient died on the 16th. The necropsy showed widespread destructive changes in the lungs and extensive ulceration of the intestine.

CASE 6.—The patient, seen first on June 17th, 1900, was a private soldier, aged 22 years, who had been one of the beleaguered garrison of Ladysmith and had suffered from enteric fever during the siege. He was found to be in a most extreme condition of emaciation, being reduced to skin and bone. Both buttocks were the seat of enormous bed-sores. At times he appeared to be almost exanimate, the whites of the eyes being alone visible. A fluctuating abscess of the size of a small orange occupied the left side of the cheek over the jaw. Watery blood oozed from the gums and a quantity of yellow serous discharge came from the nose. In spite of hot bottles and thick blankets the patient felt stone cold. His feet were considerably swollen and were covered with extensive ecchymoses; there were ecchymoses also on the legs and arms. The patient at times yelled with the pain of the bed-sores and of the frequent cramps in his legs. His intelligence was disordered and he begged for his legs to be cut off. His motions were passed under him in bed. The alkalinity of the blood was $\frac{N}{110}$. Four grammes daily of lactate of soda were prescribed. There was no noticeable change in his condition on the 18th, his mind still rambling. The treatment was continued. On the 20th his condition had much improved; he felt warm and the œdema of the feet had somewhat subsided. He said that the cramps were less frequent and that the bed-sores were not so painful. The abscess in the cheek had burst into the mouth. The alkalinity of the blood was $\frac{N}{35}$. The treatment was continued. On the 22nd the patient declared himself much better and asked to be allowed to smoke. On the 24th his temperature rose, the curve assuming a characteristic septic type, and the bed-sores were found to have assumed a gangrenous appearance. He succumbed on the 28th. The necropsy disclosed a certain amount of thickening, pigmentation, and congestion of the intestine. There was no effusion into the serous membranes. A colourless gelatinous substance occupied the medulla of the long bones. In spite of frequent examination directed to this point no trace of rigor mortis was detected.

CASE 7.—The patient was a private soldier and was also one of the beleaguered garrison of Ladysmith. He was brought into hospital from the transport on June 18th, 1900, in an extremely emaciated and moribund condition. The whole front of the body, from the neck to the umbilicus, was occupied with an extensive blood extravasation. In places where the epidermis had peeled off the surface resembled that of dried raw meat, and there were copious ecchymoses over the limbs and other parts of the body. Five grammes of lactate of soda were administered in milk. He succumbed a few hours after admission. Beyond the appearances described above and a complete absence of rigor mortis nothing characteristic was discovered at the necropsy. The alkalinity of the blood which was taken from the heart 22 hours after death[2] was $\frac{N}{100}$.

The fact that in all these cases the alkalinity of the blood was so strikingly reduced, and the fact that in every case (with the exception of the last where there is reason to suppose that the drug was not absorbed) a very striking amelioration of the condition followed upon the exhibition of lactate of soda and other similar substances, seems to me to establish beyond doubt that scurvy is—as was suggested in the paper referred to above—a condition of acid intoxication.

The following subsidiary points would appear to be deserving of notice:—1. Cases 3, 4, and 5, in which dysenteric symptoms were prominent, were well marked off from cases of ordinary dysentery, not only by their characteristic clinical features, but also by the fact that the alkalinity of their blood was diminished. The alkalinity of the blood in the uncomplicated cases of dysentery was not found to differ from the normal. 2. It was found that there was neither a notable reduction of blood coagulability nor a diminution of the lime salts of the blood in Cases 3 and 4, where these points were specially investigated. Nor were there in any of the three cases which succumbed any effusions into the serous cavities such as are described in the older records

[2] Observations made specially to determine whether any alteration of alkalinity occurs after death appear to show that there is in the case of blood taken from the heart only a very slight diminution of alkalinity within 24 hours after death.

as constituting a characteristic feature in pronounced cases of "sea scurvy."[3] 3. Case 2 would seem to be of interest as showing that the scorbutic condition may supervene and complicate the course of a specific fever. This point would seem to deserve attention, not only in connexion with the fact that a patient admitted for specific fever may previously have been subsisting on a scorbutic dietary—as will not unfrequently be the case in soldiers on active service—but also in connexion with the circumstance that a scorbutic condition may be induced during the course of a fever by the restriction of the patient to a dietary consisting of "acid food stuffs."[4] 4. A comparison of the course of events in Case 1 with the course of events in Cases 3, 4, 5, and 6 (all of which were much more severe) would seem to indicate that the desired increase of alkalinity can be more rapidly achieved by the administration of lactate of soda than by the administration of the salts of the less easily oxidizable organic acids. This is in conformity with what might *a priori* have been expected.

In conclusion, I desire to express my best thanks to Colonel W. E. Webb, R.A.M.C., and to Mr. F. J. O. Stephenson and Mr. F. J. Pearson, civil surgeons, for the facilities which they placed at my disposal in connexion with the study of these cases.

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## EYE DISEASE IN EGYPT.

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IN native Egyptian life there are a marked amalgamation and close intercourse between the different social grades which are in strong contrast to the general custom of other civilised countries, and the town populations also merge intimately with those of the country. These factors, together with the general manner of living and the climatic conditions, cause the type and frequency of eye disease to be very evenly distributed amongst all ranks and classes.

The sequence of cases on which these remarks are founded forms only a very small proportion of the total number of similar ones which passed through my hands whilst in Egypt, yet it may be considered a fully representative one, as it is a series of hospital in-patients possessing accurate statistical record and is sufficiently ample to serve as a basis of comparison. Out-patients of the hospital and cases in private practice are not included here, as their statistics cannot be so fully complete. Although my work extended over a longer period than that covered by these cases (Jan. 1st, 1891, to Dec. 31st, 1898) exactly compiled statistics are only available for that time. In preference to selecting any one year for observation the cases have been aggregated together so that an average ratio may be deduced, and although this is perhaps fairer, yet it may be pointed out that the opportunities for such study at first were very meagre in comparison with what obtained later, when the department comprised 60 beds, of which 40 were for males and 20 for females. When the various cases were classified many of the patients were found to have suffered from a variety of eye affections, and frequently each eye was also differently affected—e.g., leucoma centrale, trichiasis, trachoma, and dacryocystitis formed no uncommon combination. On this account all the cases were arranged according to the principal condition treated, and in this connexion visual impairment was given precedence over other forms of disease. The most active period of work during the year extended from May to October inclusive, when the average shade temperature is 84·2° F. (29° C.), as shown by the records of 20 years. The acuter forms of eye disease are then most rife and the infective cases assume a more intensely aggressive character. In the other period, from November to April, the average temperature is 53·6° F. (12° C.). The light coming into the wards was not obscured in any way, as ordinary large paper shades over the eyes, when necessary, afforded quite efficient shelter and rest from the glare, whilst the patients benefited in their bodies by the general light which is always so essential for their rapid recovery and well-being. The only marked relief from the constant pressure of admissions to the beds occurred in the month of Ramadan, when Mahomedan canonical law forbids the introduction of anything into the stomach by way of the throat from the time of the rising to the setting of the sun, and even collyria are included in this prohibition, from their being able to reach the throat by way of the lacrymal passages. No efforts were made, except in extreme cases, to overcome this prejudice, as it gave an opportunity of affording a well-merited rest to the native nursing staff.

During this period of eight years there was a total of 5358 cases, making a yearly average of 669. They are grouped in the table appended to this article according to the site involved by the principal disease. The operations numbered 7081, averaging 885 yearly; they also are arranged in accordance with their site, which is simpler but does not always coincide with the condition which they relieved. It was a continual source of regret that owing to the constant pressure of work imposed by the adequate treatment of the patients but scant attention could at times be afforded for the proper pathological investigation of many of the interesting cases.

The conjunctival cases numbered 742, forming 13·84 per cent. of the whole series; amongst them were 77 instances of intensely *acute catarrhal conjunctivitis*, which had always some iritis associated with it. The onset was invariably sudden, and although attempts were made frequently to discriminate the exciting cause they were never entirely successful except in proving the absence of gonococci. The treatment varied somewhat in accordance with the extent to which the tissues were involved, but principal reliance was placed on solutions of cyanide of mercury, varying in strength from 1 in 50 to 1 in 2000; the progress of recovery was usually uninterrupted. *Acute purulent conjunctivitis* was represented by 177 cases. The majority were in all probability cases of a later and neglected stage of the acute catarrhal inflammation; nearly one-third of them presented some serious destructive process of the globe. The gonococcus was found in only a very limited number. The treatment followed was almost identical with that of the acute catarrhal cases. In *granular conjunctivitis* or *trachoma* only those patients whose cases were very aggravated were ever admitted into the hospital; they numbered 297, but were sufficient fully to establish the certain and rapid results obtained by the use of perchloride of mercury in solution, as compared with the effects of other agents which were carefully tried from time to time. The perchloride was usually painted on to the affected areas of the conjunctiva each day in strengths varying from 1 in 25 to 1 in 400. Expression of the contents of the granules was sometimes combined with local applications and may have facilitated the progress of cure, but operative measures alone were found insufficient. Instances of deformity and lack of success attending excision of the conjunctival fornix by others were sufficiently numerous to prevent that procedure being adopted. The presence of some trachoma on the lids when operation on the globe happened to become compulsory was never found to interfere with the success of the result. Research as to the bacterial origin of trachoma carried out by competent authorities[1] did not yield anything of a decisive nature. Only the worst sufferers from *ophthalmia neonatorum* ever found their way to the wards as there were special means of dealing with them elsewhere. In the treatment of these cases solutions of cyanide of mercury were preferred to other remedies. *Phlyctenular conjunctivitis* was ordinarily frequent and it occurred at all seasons of the year; it occasionally assumed a giant form, and 28 cases required special treatment as in-patients. The three major inflammations of the conjunctiva, acute catarrhal, purulent, and granular, with their attendant and resultant sequelæ, may be regarded as the principal cause of impairment of the eyes so commonly met with amongst the native Egyptians who form the bulk of the population;

[3] The absence of any features pointing to a notable reduction of blood coagulability and the presence of lime salts in the blood in normal quantities in the two cases examined are possibly associated with the fact that the patients who were under observation had, so far as was known, been continuously upon a diet of milk, which though it would do nothing to correct the condition of diminished blood alkalinity would probably efficiently correct any tendency to diminished coagulability.

[4] It need hardly be pointed out that a condition of diminished alkalinity, even when it is not sufficiently pronounced to induce the characteristic symptoms of scurvy, may not be without influence in the course of a specific fever.

[1] Dr. John Eyre, and also Mr. Arnold Lawson, in Royal London Ophthalmic Hospital Report, vol. xiv., part 3.

the Arab desert tribes are comparatively immune. The infection can be traced almost invariably to direct manual contact; finger-tips and thumbs are the ordinary means amongst the lower Egyptian classes of removing surplus discharge from the eyes, and the subsequent handling of articles used in daily work readily transmits this in some form to the hands of others, whence it can be unconsciously introduced to the eye by the not unusual vigorous rubbing of the palpebral fissure. The habit of only using the back of the wrist or hand for rubbing the eye at such times would seem to avoid this possible risk of inoculation by contamination which the matutinal use of cleansing lotions as practised by some does not obviate. It is a popular theory, amongst visitors to Egypt more especially, that flies are the source of this infection, but large experience convinces me that this is erroneous. Flies (*musca domestica*) are ever attracted by a gleaming sticky surface, especially if it is also an odorous one, and as it is the custom never to wash the native babies until two years after their birth the flies naturally swarm about the faces of these infants, drawn there simply by the glutinous discharge about the eyes and by the smell of other filth. Although flies alighting on infective matter are capable of carrying it to some other suitable nidus they seldom, if ever, enter the conjunctival sac of normal eyes, which is further protected by its inherent properties which are known to be naturally germicidal.[2]

A great deal of injury to eyes, and sometimes destruction, is wrought, amongst the poorer classes more especially, by the very prevalent use of locally made nostrums in the form of various dry powders, which are termed "*sheeshm*." They are principally composed of some harmless base, such as sugar, with the addition of powdered alum, ginger, cayenne pepper, and sometimes even slaked lime. The comparatively frequent occurrence of *symblepharon* (28 eyes in 16 cases) is thus attributable; the escharotic action of the "*sheeshm*," which is always used dry, denudes the opposing bulbar and palpebral surfaces, and the ensuing œdematous congestion maintains the parts at rest sufficiently long for cohesion to become fully established. There were 177 instances of *pterygium* in 97 individuals. The method of dealing with it will be referred to later.

Those suffering from corneal affections, of whom there were 1838, comprised 34·3 per cent. of the total cases. There were very few amongst them with *foreign bodies*, and three-fourths of these were due to "*sheeshm*" impacted on the corneal surface and obscuring vision; this was often relieved by use of the curette. There were 77 with various forms of *keratitis*, being 11·9 per cent. of the corneal cases, and of these the interstitial type of inflammation constituted fully the half. There were 130 cases of *ulcer* of various species, forming 7 per cent. Corneæ which had become *staphylomatous* were also numerous, and of the 75 cases 48 were found to be operable. The greater bulk of the corneal cases, 58·3 per cent., were entered as *leucoma*: these were of every degree and with varying complications. *Necrosis corneæ* accounted for eight cases; they were a sequela of acute purulent conjunctivitis and occurred usually in people very much debilitated. There was a series of 97 cases classed as *vascular cornea*, but these only formed one-third of the actual number which often accompanied graver maladies. In these there were distinctly separate blood-vessels, varying in number, which passed on to the cornea from every point of its periphery and ramified superficially over its surface anastomosing with each other by a network of fine branches. They were unconnected with any ulcerative condition and there was often no active process of inflammation or cicatrisation present. It seemed to be a varicose condition remaining after previous vascular new formation and congestion, the result at times of some contiguous chronic inflammation, but occasionally due to the irritation caused by trichiasis and still more frequently to that produced by the prevalent habit of systematically using "*sheeshm*." *Trauma* of the cornea as well as of other parts of the eye was of common occurrence. It was but seldom due to accident; it was occasionally self-inflicted with the object of escaping military service or of acquiring rights to the enjoyment of a pension, but usually it was caused by malicious violence by those who were addicted to, and were depraved by, the use of "*hashish*." *Epithelial xerosis* was not at all uncommon and its occurrence was not limited to any one season of the year; it was more frequently seen on the cornea than on the bulbar conjunctiva but sometimes it stretched across the limbus, and was rarely met with on the palpebral conjunctiva. It sometimes occupied quite a large area of the cornea and interfered with vision; skilled observation often showed that these patches had covered the same area for long periods without spreading further. Successful cultivations could always be obtained on suitable artificial media, but the production of the growth elsewhere on living tissue, and also its original cause, remained unsolved problems. Scraping and the use of antiseptics failed as modes of treatment, but the application of the actual cautery at a dull heat was always permanently successful, although the tissues seemed to resent its use more than is customary, as evidenced by the reaction produced.

There was a small series of cases of great interest in which there was a distinct extraneous growth of the cornea occurring in one or both eyes. It was always well defined and of a firm gelatinous consistence, pale yellowish pink in colour and semi-translucent, and with a few distinct blood-vessels joining its two corners at the periphery of the cornea. It was usually situated on the upper segment of the cornea, to which it was always attached by the whole of its base. In shape it was uniformly flattened, varying in thickness from one to two millimetres; its line of demarcation from clear corneal tissue was sharply defined, its surface as well as that of the cornea was always intact, and there was no evidence of any inflammatory process. When situated opposite the palpebral aperture the centre of the growth was more prominent than the edges and the colour was of a more vivid red. Such growths varied somewhat in size, at times occupying the upper third of the cornea, and were of exceedingly slow growth and quite painless; they were known by the laity as "*benza-hayra*," and as there was a superstitious reverence attached to them they came under the surgeon's care, as a rule, only when they encroached on the line of vision. They were easily removed in the form of a thick pellicle by the careful use of an angular keratome, and were always found to have an intimate vascular relation to the surface of the cornea which remained unaltered, with the exception of a slight diffuse opacity marking the site. There were eight of these tumours in this total series of patients, but I also met with them outside the hospital, as they were not confined to any particular rank of life nor were they peculiar to any occupation. Although I made every endeavour to obtain pathological scrutiny of their nature something unfortunately in each instance happened to mar the accuracy of the report; the only point which I was able to establish was the absence of tubercle.

As the poorer classes are mostly illiterate, errors of refraction seldom came under notice in hospital, yet needless to say there were numerous cases elsewhere. The majority of these were myopic, usually with astigmatism superadded, and they were often further complicated by irregularity of the corneal surface without opacity, the result generally of inflammation during early childhood. Whilst completing the examination of some cases for a medical colleague I found several patients with apparently healthy eyes but whose refraction, tested objectively with a mydriatic, showed errors of medium degree, both simple and compound; they themselves were quite illiterate, as were also their progenitors for generations. Arabic letters and numerals did not lend themselves to the subjective testing of vision, nor were the illiterate figures (E) of Snellen found to be applicable, but by the omission of the central short bar in the latter a type was produced which, arranged in series, was readily intelligible to the bulk of the patients.

Eyelid cases amounted to 1511, which was 28·2 per cent. of the total; two-thirds of these patients suffered from misdirected eyelashes, which included *districhiasis* and *trichiasis* both partial and total. The cases were as a rule so infinitely varied and complex that the simple term "trichiasis" was applied to them all as the only way of avoiding unnecessary minutiæ and consequent confusion. Some of the cases were undoubtedly congenital, but most of them bore distinct evidence of a previous inflammatory process, and it might be presumed that the resulting cicatricial formation was the principal cause later of the distorted position of the eyelashes. Total trichiasis occurred

[2] Contribution to the Bacteriology of the Normal Conjunctival Sac, by Dr. John Eyre, Annals of Ophthalmology, October, 1897.

in 1172 cases; *ectropion* was not uncommon, and *tumours*, both benign and malignant, were not rare.

The diseases of the fundus were usually those of major import. There was a marked preponderance of *optic atrophy*, both partial and complete, which could seldom be ascribed to local causes; when partial, it often indicated the existence of ataxia hitherto unnoticed. Very few of the cases of optic atrophy were the result of *glaucoma*. This latter supplied 261 cases, being 4·8 per cent. of the full series. Only 10 of them had reached the complete and final stage.

There were 63 cases (1·1 per cent.) of *panophthalmitis suppurativa*, which was often a sequela of purulent conjunctivitis, but not unfrequently also idiopathic. As a general rule the implicated organ was removed, but sometimes this was inadvisable owing to the surrounding tissues being much involved or to the general condition of the patient being too unsatisfactory. Evisceration by irrigation was then accomplished and the condition was quieted by suitable fomentations; no bad results were ever subsequently noted in these cases although the scleral envelope remained.

*Disorganised eyes* were peculiarly frequent. In the last statistical year (1898) there were 89 cases with one eye disorganised in a total of 686 admissions; this may be taken as a fair basis and in the gross total of 5358 patients would yield an average of 712 cases (13·28 per cent.), each having a wholly disorganised eye; there were only four instances of *sympathetic iritis* in this number. It will be readily seen that this is a very small proportion in comparison with what might have been expected in these 712 cases, which might, in accordance with views widely held, be considered as essentially predisposed towards its occurrence. There is a strong Mahomedan belief that the loss of any member of the body and consequent deformity in this world will preclude admission to the enjoyment of the after-life, and it was deemed expedient to conform to this general feeling as much as possible so as to avoid prejudicing opinion against the eye-work as a whole. It was under these circumstances that I was able to realise that the occurrence of sympathetic iritis is apparently a very greatly over-rated element of danger and that expectant treatment need not be insisted on, as it can be suitably encountered should it occur. Of the large number of eyes (an average of 712) already referred to as "disorganised" by previous inflammatory changes only 139 were removed by operation. The principle which eventually guided me in the treatment of all these cases was never to remove an eye which possessed any perception of light or where there was any possibility of such restoration, provided there were no signs of inflammation present to make its removal an urgent matter; also never to insist on the removal of any simply disorganised eye unless the patient voluntarily expressed such a wish, because the operation, although its technique is so simple, is sometimes, though only very occasionally, followed by extreme collapse which it is difficult to foresee or even to understand.

There were 28 cases of direct *trauma of the globe*, 22 of these being rupture caused by violence; in seven of these latter symptoms of sympathetic iritis had supervened on admission to hospital.

Cases classed under affections of the iris formed 3·3 per cent. of the gross total, and nearly half of them were *iritis* of varying form.

Disturbance of the *lacrymal apparatus* formed 1·8 per cent. of the whole series; two-thirds of them presented inflammation of the sac which was occasionally bilateral, when there was frequently a fistula established as well. There were two cases of complete obliteration of the nasal portion of the passage, and they were restored by a means of operation which ultimately became the assured groundwork for treating all cases of severe stenosis of the lacrymal duct. There were a few cases of a peculiar inflammatory induration of the skin and subjacent tissue occurring in young people, sometimes extensively, over the inner half of the rim of the orbit, and only occasionally associated with lacrymal stenosis; in most of these cases the surface had already become ulcerated, but this never extended beyond the palpebral area. It was readily submissive to treatment by simple curetting, attention to the lumen of the lacrymal duct, and suitable internal remedies.

Alterations in the lens were diagnosed in 325 of the cases (6·06 per cent.), 223 of these were due to *senile cataract* which not unfrequently had other local conditions also requiring operation; marked differences in the densities of the nucleus and periphery of the lens (Morgagnian) were unusually common. There were 33 cases of *lamellar cataract*. They occurred in young people between four years and 27 years old; they were almost without exception entirely devoid of any trace of constitutional disease, but some of them were the subjects of anæmia which was then often extreme and could usually be ascribed to the presence of bilharzia hæmatobia. The history of the cases was in many instances strikingly similar and could not be disproved by any cross-questioning. The simple narrative was that the patient had gone to bed at night with the eyes quite normal, but on waking in the morning vision was no longer possible and the eyes presented the condition noticed on admission. Other than this unvarying and peculiar history no abnormality was ever discerned, either at the time of operation or subsequently. Cataract was familiar to the people and was termed "*moya bayda*" (= white water), they thus distinguished it from glaucoma which they called "*moya zarqa*" (= blue water).

Changes in the equilibrium of the external muscles of the eye were extremely common; the condition of strabismus was so universally distributed amongst all classes that it scarcely provoked comment, nor was it even held to militate against the personal appearance; it was only when some particular paralysis or paresis supervened and caused diplopia that resort to treatment was deemed advisable.

The operative procedures required in this series of 5358 cases amounted, exclusively of minor ones, to a total of 7081, which was a yearly average of 885; for simplicity they were classified according to the site of operation, and a few of them demand special reference.

In cases of pterygium the extraneous tissue was made tense by raising it on a tenotomy hook, and with an angular keratome it was then carefully dissected off from the surface of the cornea. Its base was excised with scissors from over the sclera, and the process of repair was only aided by sutures when the resultant gap was of considerable extent; this occurred in 77 out of 117 operations. In symblepharon a similar procedure was followed, care also being taken, as in the preceding operation, to remove all débris thoroughly from the corneal superficies, and so avoid the subsequent formation of dense cicatricial opacities. The difficulty of maintaining the separation of the opposing denuded surfaces was overcome by everting the eyelid, and retaining it in that position by fine wire sutures of silver to neighbouring parts of the face, until healing of the bulbar surface was complete. Mention has already been made of the employment of the actual cautery at a dull heat in cases of epithelial xerosis; none of the many other methods tried was of any avail. The sub-conjunctival injection of a solution of cyanide of mercury, 1 in 1000, as practised by Darier and others, proved a most efficient remedy in obstinate cases of keratitis, uveitis, and also in some affections of the fundus, such as optic neuritis, partial optic atrophy, retinitis, &c.

In all cases of corneal abscess requiring operative interference the actual cautery was employed in preference to Saemisch's more radical method, as it was equally efficient and practically produced no marked deformity. The cautery was used in all other infective processes of the cornea, such as serpiginous and allied ulcers, epithelial xerosis, &c. When "*sheeshm*," as already mentioned, had become impacted it could usually be removed in great part by scraping, as could also the raised dense nebulæ which were met with occasionally, thus restoring a useful and clear cornea. Staphylomata were usually opaque in part, and if not extending beyond the corneal area they could frequently be reduced in form by suitable partial excision and suture; a more sightly appearance was thus produced which could be further enhanced by tattooing, and occasionally made useful by the performance of a visual iridectomy. No untoward incident occurred in the 48 cases thus treated. The most satisfactory way of abolishing the condition referred to as "vascular cornea" was by gently slitting the larger trunks of the vessels longitudinally, as they ramified on the cornea, thus converting them into open canals; it was readily done by a small Graefe's knife with the aid of a large magnifying lens, and the insignificant scratches thus made were treated as simple abrasions until healed. The almost imperceptible striæ marking the site of the obliterated vessels ultimately disappeared under appropriate treatment. Dividing the vessels transversely near the limbus as subsequently suggested by Schmidt-Rimpler, is not nearly so

certain and efficient, because a process of repair by anastomosis can be so readily established; the same remark applies to the operation of peritomy whether by excision or by the cautery. The above slitting of the vessels was done in 334 instances.

Blepharophimosis was a condition which often required relief, and in 159 cases a simple canthectomy was sufficient, but in 460 a more complete canthoplasty was necessary; after division of the canthus, the bulbar conjunctiva was undermined and attached to the respective prolonged margins of the lids, which were then kept apart during healing by withdrawal of the upper lid towards the eyebrow by means of a fine silver-wire suture. Ectropion, operated on 84 times, was overcome in 22 examples by shortening the length of the lower eyelid at its outer end and forming a new canthus there; there were 27 instances of ectropion due to hypertrophy of the conjunctiva in the upper fornix, occurring in neglected cases of ophthalmia neonatorum. Successful results were obtained by introducing thick silver-wire splints into the substance of the lid, thus controlling the deformity whilst appropriate treatment was being employed for subduing the inflammation.

For the purposes of operation the condition of trichiasis and that of districhiasis were divided into "total" and "partial"; the latter term included those cases in which the distorted eyelashes were single and separate or were in small isolated groups. The most certain method with them was to cut down on the eyelash from the skin surface, excise it completely, and close the wound afterwards with a fine suture. In treating "total" trichiasis the best results were obtained by regarding the tarsal cartilage as a mal-curved long bone and bisecting it on its inner surface above the level of the roots of the eyelashes, then everting this lower portion and retaining it in its altered position until sufficient union had taken place, which was usually in six days. This operation was not only speedy, but its results were eminently satisfactory both to the surgeon and the patient; there was no external deformity produced or indication of operation, the eyelashes had assumed a normal relation to the cornea and globe of the eye, and the conjunctival surface of the lid presented a smooth and level surface on which the white cicatricial mark alone indicated operative interference. There were a few patients whose general weakness made it incumbent for an extremely rapid but efficient operation to be done, and where personal appearance was immaterial, in such cases one deep incision was made along the whole length of the free border of the eyelid, and the roots of the eyelashes thus exposed were destroyed by use of the actual cautery. Many cases of interstitial xerosis of the cornea associated with total trichiasis showed marked improvement after the latter had been cured by operation; in one case of simple interstitial xerosis the eyelids were stitched together, but the improvement obtained was not sufficiently marked to encourage repetition.

In cases of glaucoma iridectomy was performed in preference to sclerotomy. With regard to all operations involving the iris there was very little local irritation subsequently, and this was ascribed to the minutely careful toilet of the injured parts which was made before applying the dressing.

There were two cases of lacrymal obstruction in which the lacrymal duct and its osseous wall were completely obliterated; these were fully restored by the drilling of a fresh passage. This served as a useful basis subsequently in rapidly and efficiently combating other hitherto obstinate cases where there was partial bony obstruction. Eventually, by noting in each case of lacrymal stenosis the extent and degree and also the position of the narrowing of the lumen in the lacrymal duct, much information was gained which had hitherto escaped notice, it being found that the strictures varied greatly in every way. Those which were indurated, cicatricial, or osseous were enlarged sufficiently by drilling, and styles were then introduced until the wall of the widened passage had again been covered by epithelium. When chronic inflammatory congestion and consequent new formation of tissue was the cause, constant pressure by suitably adapted styles of lead wire produced sufficient effect when accompanied by the use of astringent lotions and other applications. In every case where the lacrymal passages were implicated, attention was first directed to the conditions of its effluent portion, and when this was properly restored other abnormal conditions quickly submitted to the usual methods of treatment, as obtained elsewhere in the body. Fistulæ of the lacrymal sac thus readily yielded to scraping, cauterisation, or fuller reparation, as each case might require. Tumours involving the lacrymal passages were met with; they were sometimes far advanced in growth and so involved that operation was not always possible.

In the preparation of cases for removal of cataract, besides the proper regulation of the bowels and the general cleanliness of the patient the local surroundings of the eye were carefully attended to; the eyebrow was shaved and the eyelashes cut off closely, the parts were then washed and a dressing with a mercurial ointment was applied for 48 hours. At the time of operation the instruments were sterilised by boiling and were placed in a 4 per cent. boric solution. With lamellar cataract the attempt was made, and nearly always successfully, to remove the whole of the lens matter at one sitting. The pupil of the eye having been dilated, the lens capsule was incised and the substance of the lens was disintegrated with a linear cataract knife, which when withdrawn enlarged the point of entrance sufficiently to allow of the ready introduction of a narrow curette for the complete removal of the lens matter; the lens capsule, often also opaque, was sometimes extracted by forceps. By following this method, irritation and inflammatory reaction were reduced to a minimum, as was also the risk of extraneous infection by repeated operations. In some instances where the patients approached the age of 20 years or exceeded it, the lens was so dense that it had to be removed by the ordinary method of linear incision; this was done on 37 occasions.

In the operation for senile cataract the lens was removed through a linear incision situated well forward from the limbus and usually in the upper segment of the cornea; this incision seemed to heal more readily than when placed further back and it also decreased the proneness to the iris prolapsing. Iridectomy was not performed in 96 of the operations (28·7 per cent.), which numbered 330; as there are many factors bearing on this part of the technique, the decision was always relegated to the actual time of operation and it was only performed when seemingly unavoidable. There was occasionally some loss of vitreous, but in no way did this seem to diminish the ultimate acuity of vision. Experience proved that covering the operated eye and leaving the other one free was sufficient; the dressing used was a small sterilised one of dry absorbent wool with a small piece of vaselined gauze on its surface next the skin.

*Condensed Statistics of In-patients, Eye-section, Kasr-el-Aini Hospital, Cairo, Egypt, from Jan. 1st, 1891, to Dec. 31st, 1898, classified according to the Principal Diseases for which they were Admitted, and the Operations according to the Area of Tissue in which they were Performed.*

| Diseases. | | | Tissue involved. | Operations. | | |
|---|---|---|---|---|---|---|
| Percentage of total. | Yearly average. | Total. | | Total. | Yearly average. | Percentage of total. |
| 13·8 | 92·7 | 742 | Conjunctiva. | 273 | 34·0 | 3·8 |
| 34·4 | 229·7 | 1838 | Cornea. | 519 | 64·8 | 7·3 |
| 28·2 | 188·7 | 1511 | Eyelids. | 3040 | 380·0 | 42·9 |
| 1·9 | 13·1 | 105 | Fundus. | — | — | — |
| 9·8 | 66·0 | 528 | Globe. | 187 | 23·3 | 2·6 |
| 3·3 | 22·1 | 177 | Iris. | 2348 | 293·5 | 33·1 |
| 1·8 | 12·1 | 97 | Lacrymal apparatus. | 163 | 21·0 | 2·3 |
| 6·06 | 40·6 | 325 | Lens. | 513 | 64·1 | 7·2 |
| 0·14 | 1·0 | 8 | Ocular muscles. | 18 | 2·2 | 0·25 |
| 0·42 | 2·8 | 23 | Orbit. | 12 | 1·5 | 0·16 |
| 0·07 | 0·5 | 4 | Sclerotic. | 3 | 0·3 | 0·04 |
| 100·0 | 669·7 | 5358 | *Gross total.* | 7081 | 885·1 | 100·0 |

(*N.B.—Fractions are not fully extended.*)

It was covered by a piece of muslin the edges of which were fastened by flexile collodion to the skin around the orbit; this remained untouched for from four to six days, when it was replaced by a similar dressing applied daily under a bandage. Ordinary diet was given. Although every effort was made to insist on the recumbent posture being maintained it was

obeyed in comparatively few instances, and yet the satisfactory progress of the cases was unimpaired. The patients, whenever possible, were detained in hospital until a complete result had been obtained, because the bulk of them, being illiterate and not ambitious to work more than was necessary, were apt to be content only with a degree of vision which would enable them to walk about readily alone. There were 40 operations on secondary capsules.

Two cases of detachment of the retina were operated on by posterior puncture with an entirely successful result.

With regard to tumours of the orbit, it was occasionally found difficult to obtain consent for their complete removal in those cases where the growth had not yet involved the globe; consequently they sometimes attained most unusual proportions before the necessary assent was expressed, and by then the operation was often no longer useful and sometimes was even impossible.

Harley-street, W.

## THE PATHOGENY OF GOUT.[1]

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IN this effort to elucidate one of the most obscure problems in medicine I begin by declaring that my position is that of the clinical investigator, and that much of my past study respecting gout has been directed to prove what are the exact manifestations of this malady as distinguished from other morbid states often confounded with it. As we shall find, the secret of its precise pathogeny has not yet been wrested from nature by the most skilful masters of chemistry or physiology, although some of our best conceptions of it have issued from these sources. The clinician has much to do in pursuing this inquiry.

In one of the best modern text-books on medicine, that of Professor Osler of Baltimore, it is declared that "the nature of gout is unknown." Is it too much to expect that after our deliberations to-day we shall be able to refute this opinion as well as that of M. Rendu who remarks: "Il est encore impossible de formuler une pathogénie définitive comme de donner une définition exacte et complète de la goutte"?

Without undue presumption I may venture to claim for my countrymen, and especially for the veteran Alfred Garrod, still enthusiastic in the pursuit of knowledge, a creditable share in the elucidation of this recondite subject. I may add that while my country has long been, and still is, a classical soil for gout, there is happily less of it in the acute form than there was a century ago.

In entering on a study of the question before us it appears to be the safest course to state the fundamental facts respecting gout upon which all observers are agreed. We recognise, therefore, in gouty persons a special diathetic habit or proclivity, more marked in some countries and races of men than in others—one which, like other diatheses, may be inherited and transmitted and may also gradually be acquired and modified. Next, we recognise a peculiar condition of the blood which is abnormal in respect of the presence of uric acid (urichæmia); and, lastly, we find in various localities of the body deposits of urate of soda. In any patient presenting truly gouty symptoms we expect to meet with at least the first and second of these conditions. In many cases, however, we can find no ante-mortem evidence of uratic deposit, nor, indeed, do we always find this post mortem. It is further certain that persons may be gouty in various degrees, presenting all varieties from the acute to the chronic forms, including the phases of irregular or incomplete gout.

The primary cause of gout doubtless lies in some constitutional defect of nutrition which permits the development sooner or later of its symptoms. With Noël Guenneau de Mussy I would say that this defect is the veritable disorder —"un trouble profond, primordial, qui a sa racine dans l'ensemble de la constitution et dans la race elle-même." It is in this direction that we have to push our inquiry. The tissues and their intimate modes of nutrition differ in the gouty from those not similarly impressed.[2] What is the nature of this difference?

Many of the most thoughtful students of gout have long been impressed with the fact that gout as a morbid state is not expressed or fully explained by the mere aberrant relations of uric acid in the body. Urichæmia of one variety is certainly a factor in the case, but it is itself the result of an antecedent faulty nutritive metabolism ("le trouble primordial").

In recent years much labour has been expended in the effort to determine the site or sites of production of uric acid in the body but at the present moment the best physiological authorities are not agreed upon this matter. The true solution of this question in regard to gout is probably only to be found by a study of the metabolic processes in the human subject, inasmuch as the origin of uric acid may possibly differ in different animals, and it may conceivably own special and abnormal sources in the gouty subject. Herein lies one of the great difficulties of the problem. Time forbids me to enumerate the different views which are held regarding the sites of formation of uric acid. It will suffice to state that the latest researches point to the kidneys as the organs in which it is alone produced from a conjugation of urea and glycocine, and this view has the support of Garrod, Latham, and Luff, who also maintain that uric acid is never present in normal blood but is always excreted by the kidneys which produce it. Charcot and Murchison regarded the liver as the principal seat of uric acid formation, but the latest researches tend to show that in gouty conditions the liver does no more than supply by undue stimulation an excess of urea and glycocine as antecedents for conversion by the kidneys into uric acid. Garrod and Luff believe that the source of uric acid is the same in the gouty as in healthy persons, but regard the kidneys as inadequate in the former to excrete it. This inadequacy is probably one of the peculiarities of the tissues of the gouty individual. Ebstein presumes as part of the abnormality in these persons a wider field for uric acid production and believes that gouty subjects may form it in muscles and bone-marrow as well as in the kidneys. We wait for proof of these assertions from the eminent professor at this sitting. So far as we know, this renal inadequacy to excrete uric acid normally from time to time is not manifested by any alteration of tissue recognisable by the microscope. It is quite apart from any degree of interstitial nephritis which is apt to supervene in the later stages of gout.

Kolisch of Vienna will tell us to-day that some antecedents or allies of uric acid constitute the *materia peccans* of gout and that certain alloxur bases induce a form of renal degeneration which precedes the development of gout. I think, on the contrary, that the fact of urichæmia in gout is proved and I deny that any recognisable degree of renal degeneration exists in the majority of patients who suffer from regular gout, at all events in the early course of the disease.

So far, then, as gout depends on urichæmia we have to consider whether its manifestations are associated with (*a*) an over-production or (*b*) a diminished excretion of uric acid.

We know that over-production of this acid occurs in some other diseases without including any gouty symptoms, as, for example, in anæmia and leukæmia, and it has been proved that a diminished excretion of it is the rule in gout. Further, it is known that agents which diminish excretion of uric acid tend to induce gouty symptoms in predisposed persons. The latest researches indicate that consequent on renal inability to excrete the uric acid formed in those organs absorption of it into the blood takes place, with liability to gout. Other varieties of urichæmia appear to depend on the transformation of nuclein derived from leucocytes or on the production of uric acid in areas outside the kidneys, and these urichæmic states in no degree determine gout, renal function being adequate. I accept the teaching of Garrod, Roberts, and Luff respecting the condition of the blood in gouty urichæmia. Uric acid is present in the form of a soluble, but unstable, gelatinous quadriurate of sodium. This is non-toxic and gives no evidence of its presence in the system, but it is readily converted by sodium carbonate in the blood into the bi-urate which is a

[1] A paper read in the Section of Internal Pathology at the Thirteenth International Medical Congress, Paris, on August 6th, 1900. The conclusions were published in our issue of August 11th.

[2] Hence may we not affirm with Jaccoud, "Au fond, la goutte est toujours une maladie chronique"?

crystalline and noxious salt. The precipitation of insoluble bi-urate of sodium from the gelatinous quadriurate is apt to occur whenever the blood is surcharged with the latter, and this appears to be coincident with a specific gouty crisis and a localised attack. The crystals thus formed are irritating to any tissue in which they may be deposited.

The greater frequency of gout in persons who take little exercise and habitually consume strong food and liquors in excess of their physiological requirement is to be attributed partly, if not entirely, to the disordered hepatic metabolism thereby induced. Whether uric acid is formed in the liver and other tissues in persons of a gouty habit is, as we have seen, not yet determined. I am disposed to regard with favour the hypothesis of Ebstein that amongst the peculiarities of the gouty subject there may be a tendency to form uric acid in abnormal situations, and to agree further with him in the view that this peculiarity of tissue may be transmitted to the progeny in varying degree, sometimes, perhaps, in a latent condition, but yet capable of being roused into activity by habits of life provocative of gout.

We are here, however, in a region of conjecture, and the nearest point of certainty we can reach for the present is to regard this humoral part of the pathogeny of gout as dependent on a special mode of tissue metabolism inherent in the subject of it, implanted in varying degrees and capable of transmission. This view receives support from our knowledge of cases of what is termed "poor gout," in which we find that the disease is well marked although the patient leads the most prudent and abstemious life. The intimate metabolic fault is present and gouty developments occur without any direct provocation from without. The patient inherits the peculiar defect of his tissues, a degradation, as it were, from the normal condition, constituting, as suggested by Gull, a reversion to a lower animal type of metabolism, a peculiarity, possibly, as Sir William Roberts thought, of a vestigial nature. With Bouchard we may regard it as a "ralentissement diathésique de la nutrition." In the realm of pathology there are doubtless other tendencies and states which are developed and transmitted in like fashion.

The foregoing conceptions are supported by the doctrines applicable to other diathetic conditions. Up to this point, however, the theory laid down is founded on a basic tissue-defect, leading to a purely humoral pathogeny for gout.

This I regard as incomplete and inadequate to explain all the phenomena of gout. We have yet to discuss the relation of urichæmia to the different symptoms of the malady, and in particular the specific determination of urate of sodium to the joints, especially in the earlier stages and the classical form. In my opinion another element has to be considered which materially influences the character of the disease. This is the nervous element and to this we must now direct our attention. I am entirely in agreement with the doctrine of the Parisian school in respect of the arthritic diathesis.[3] This was the original conception, I believe, of Féréol,[4] adopted by Pidoux, G. de Mussy, Charcot, and others, and it is now accepted by some British authorities. The subjects of this basic habit of body are especially prone to suffer from rheumatic and gouty disorders. Under provocation, whether from the *materia peccans* of rheumatism or the urichæmia of gout, the specific manifestations of these states are mainly directed to the articular system. I take note at this point of nervous or neuro-trophic influence, and, encouraged by the analogy of other arthropathic conditions, venture to agree with those who predicate the existence of a nutrient centre for joints situated probably in the medulla oblongata. There are good reasons for the belief that derangement of this trophic centre induces marked changes in joints such as occur, for example, in rheumatoid arthritis or in locomotor ataxia. I believe, then, that the second factor in the pathogeny of gout is a disordered condition or neurosis of this centre whereby the manifestations of the urichæmia are specially determined to the articulations. I also believe that this peculiar neurosis influences the features of rheumatic fever, an infective disorder affecting persons of arthritic habit. In cases of abarticular gout we have to deal with the chronic and irregular phases of the disease and are then in the presence of a gouty cachexia pervading the whole system. ("Totum corpus est podagra.") No careful clinical student of gout can fail to recognise the nervous element in the disorder. The onset of a paroxysm is often due to such influence. The condition of urichæmia grows up, as it were, to saturation. A nerve storm is aroused by mental influences or arises either out of shock, depression, or excitement, and forthwith the crisis occurs and the attack is localised.[5]

Twenty years ago I ventured to submit the opinion that the peculiarities of the gouty habit were altogether the outcome of a central tropho-neurosis. My friend, the late Professor Ball of this school, in reviewing my theory reproached me with "seeking to localise at too limited a point the primordial lesions of a malady essentially general, one which is, and always will be, typical of one of the best diathetic conditions." I now confess that his criticism was just, and an extended study of the subject disposes me to limit the influence of the nervous system more particularly to the phenomena of paroxysms, metastases, and the determination of the sites of uratic deposit. I hold firmly to the idea that none of these occur casually or indiscriminately, but that local conditions of tissues are assigned, under neuro-trophic influences, for gouty manifestations. There must be some directing and determining force in the case. I cannot conceive of such a specific process occurring independently of nervous influence.

Let me remind you that this part of our inquiry is altogether outside the scope of experiment in chemical or physiological laboratories. The clinician has alone to find the key which will disclose this mystery.

I claim therefore for gout a dual pathogeny and speak of it as a neuro-humoral disease. This conception is not new. It was certainly adduced by Sydenham in the quaint terminology of the seventeenth century. Cullen of Edinburgh discarded the humoral side and exclusively developed the theory of the nervous origin of gout. By so doing he long prevented the study of the subject on profitable lines of inquiry. Garrod and the majority of modern investigators have, with rare skill and intuition, developed the humoral theory, and much, if not altogether, discarded the nervous element in the pathogeny of gout. For an adequate explanation of this malady we have to include both the hæmic and the neural elements which present themselves, and this was the doctrine of Laycock, taught 40 years ago in Edinburgh. Time forbids me to enter on multitudinous details of interest and importance in relation to the disease as a whole. I would add that we have to conceive of the gouty habit and tendency as originating and transmitted in varying degrees, as blended sometimes with, and modifying, other diathetic states. Yet it is always specific and ready to assert itself. Some persons are not, and cannot become, gouty, just as some are not, and cannot become, scrofulous.

I believe that the tendency to gout may be originated in persons not disposed to it by habits of life which are known to provoke it, together with excessive nervous exhaustion; and if these conditions fail to induce overt gout in certain individuals they may be potential to influence and modify the trophic processes in their progeny so as to induce gouty manifestations. Unless the descendants of such parents lead very different lives from those of their progenitors they are hardly likely to escape the worst effects of their inheritance, and even when such children lead lives of temperance and activity there may often appear in them the signs of irregular or incomplete gout.

Respecting uratic deposit as a permanent indication of past gout in any part I would express my belief that this is not always to be found. It is most likely to remain in non-vascular tissues, such as cartilage, but even from this and other textures I believe it may be removed in course of time, provided the patient ceases to suffer from repeated attacks. It is also certain that deposits may be formed in abundance without any painful paroxysms of gout. My experience further shows that patients with a tendency to excessive deposits do not always have, as has been alleged, obviously damaged kidneys. There may be only slightly marked interstitial changes. The special features which entail incapacity and inadequacy in the tissues of the gouty subject are, as I have already stated in respect of the kidneys, incapable of detection by histological methods.[6] We only recognise them by the symptoms they induce, and

[3] I also accept the teaching of M. Bouchard respecting the different diatheses.

[4] Some attribute this to Bazin.

[5] "A slight excess of any kind, whether in diet or exercise, will excite the disease in those predisposed to it. When the train is laid an additional glass of claret may have acted as the match, but in all such cases the explosion would have equally taken place had instead of claret some other exciting cause fired it." (On Diet and Regimen, Dr. Paris. London: 1837.)

[6] The same is the case in diabetes mellitus where no histological faults have as yet been discovered but in which a grave metabolic defect exists.

we know that the peculiar metabolism of such persons is morbidly sensitive to impregnation of the system by agents such as iron, lead, or alcohol.

To sum up my conceptions respecting the pathogeny of gout I will venture to affirm:—

That gout as a morbid condition depends on an inherent vice of nutrition, which is manifested by an imperfect metabolism in various organs or parts of the body, presumably in the kidneys and probably in the liver.

That this trophic disorder or inadequacy ("ralentissement de nutrition") leads to the formation of uric acid, probably in excess, and to the periodic retention of it in the blood (gouty urichæmia).

That histology throws no light upon the intimate nature of this defect, which thus relates to cellular potentiality, possibly under neuro-trophic influence, and not, so far as we know, to structural alteration.

That this textural disability, or a tendency to it, may be primarily acquired and also transmitted as a fault, thereby inducing from time to time urichæmia with gouty manifestations in the descendants.

That in most instances, under conditions which provoke it, and in some cases independently of these, attacks of gout may grow up and come to a crisis. Such crises are attended by an alteration in the solubility of the uratic salt in the blood, whereby irritating crystals of biurate of sodium are produced and precipitated in various parts of the body.

That a paroxysm of gout, the sites of its occurrence, and its metastases are determined by nervous influences, probably dominated from a bulbar centre, and that the local attacks alight either in the joints or in textures which have been weakened or rendered vulnerable by impaired nutrition owing to past injury or over-use.

That this central neurosis is an essential and transmissible feature in the pathogeny of gout and pertains to the arthritic diathesis generally.

That the urichæmia of gout is peculiar and unlike that which is induced by other morbid conditions, but that the occurrence of urichæmia in the gouty is by itself inadequate to induce attacks of gout.

That uratic deposits in any part of the body may be removed in course of time but are apt to be permanent in the least vascular tissues.

That uratic deposits may occur to an enormous extent in gouty persons without the occurrence of any pain or paroxysms.

That the clinical features of gout indicate that both hæmic changes (due to inherent morbid tissue metabolism) and a neuro-trophic disturbance act as pathogenic factors, and that consequently gout is to be regarded as a neuro-humoral malady.

## DIPHTHERIA IN THE HORSE.

BY LOUIS COBBETT, M.D. CAMB., F.R.C.S. ENG.

(*From the Pathological Laboratory, Cambridge.*)

ON May 22nd, 1900, Dr. A. Mearns Fraser, the medical officer of health of Portsmouth, sent to this laboratory a culture of a bacillus which he had obtained from the nasal discharge of a pony and which had appeared to him to be identical with the bacillus of diphtheria. The history was as follows. A little girl having fallen ill of diphtheria Dr. Fraser, while seeking the source of the infection, found that a pony belonging to the child's father was ill with a purulent and slight sanguineous discharge from its nose. Subsequently the animal suffered from enlargement of the glands under the tongue and laryngeal obstruction, with difficulty of breathing and retraction of the abdominal wall, and a bacillus obtained from the nasal mucus having been pronounced morphologically indistinguishable from the diphtheria bacillus the animal was killed.

The bacillus which I isolated from the culture sent to me had the usual appearance and habit of growth of the bacillus diphtheriæ. It belonged to the short variety. It did not liquefy gelatin, it formed acid in media containing glucose, it clouded beef broth and subsequently cleared it, and, like many diphtheria bacilli freshly isolated from man, it formed only a scanty film on the surface. It was pathogenic to guinea-pigs, causing local hæmorrhagic œdema and the general symptoms which are seen in these animals when they are inoculated with the bacillus diphtheriæ. It formed a powerful toxin, the filtrate from broth cultures causing a little œdema at the seat of inoculation, followed in about 10 days by falling out of the hair in the neighbourhood, widespread hæmorrhagic œdema and necrosis of the tissues immediately affected, or death, occurring sometimes within 24 hours, according to the quantity of poison injected. The effect of injecting large doses of living culture, or even 100 fatal doses of filtrate was completely neutralised by diphtheria antitoxin.

The following experiments were made.

TABLE I.—*Living Broth Culture 24 Hours old.*

| Weight of guinea-pig in grammes. | Quantity of: Culture in cubic centimetres. | Quantity of: Antitoxin in cubic centimetres. | Result. |
|---|---|---|---|
| 290 | 0·1 | 0 0 | Œdematous swelling about the seat of inoculation. Death on the sixth day. |
| 280 | 1·0 | 0 01 = 5·5 units. | Remained well. |

TABLE II.—*Filtrate of a Broth Culture Five Days old.*

| Weight of guinea-pig in grammes. | Quantity of: Culture in cubic centimetres. | Quantity of: Antitoxin in cubic centimetres. | Result. |
|---|---|---|---|
| 340 | 0·1 | 0 | Small œdematous swelling. Recovered. |
| 360 | 0·5 | 0 | Small swelling following by loss of hair about the seat of inoculation. Recovered. |
| 380 | 1·0 | 0 | Œdematous swelling. Necrosis. Recovered. |
| 320 | 5 0 | 0·01 = 5·5 units | Remained well. |

TABLE III.—*Filtrate of a Broth Culture 11 Days old.*

| Weight of guinea-pig in grammes. | Quantity of: Culture in cubic centimetres. | Quantity of: Antitoxin in cubic centimetres. | Result. |
|---|---|---|---|
| 415 | 0·05 | 0 | Œdematous swelling. Death on the third day. |
| 405 | 0·1 | 0 | Œdematous swelling. Death on the third day. |
| 400 | 0·5 | 0 | Œdematous swelling. Death on the second day. |
| 390 | 1·0 | 0 | Death in 24 hours. |
| 375 | 2·5 | 0 | Death in 24 hours. |
| 375 | 5·0 | 0 01 = 5·5 units. | Remained well. |

It will be noticed that the filtrate which was used on June 6th was much less deadly than that which was used on June 26th. The reason, no doubt, is partly that that used on the last occasion was obtained from a culture which had been grown for 11 days, while that first used was obtained from one which had been grown for six days only. But there is also another reason: in the interval the culture had been daily re-sown on beef broth, and had thereby become accustomed to this medium and had come to form a denser pellicle on the surface of the liquid than before. Consequently it is probable that its power of producing toxin had considerably increased.

These experiments put it beyond doubt that the bacillus obtained by Dr. Fraser from the pony was a true diphtheria

bacillus; and I think we may conclude—though at present there is but a single observation—that the horse is liable to nasal and laryngeal diphtheria. The discovery is of practical importance, since it points out a hitherto unsuspected channel by means of which the infection may be carried to man. It is of scientific importance also, because it has a direct bearing on the question of the origin of antitoxin. As is well known the serum of normal man, both adult and infant,[1] and that of the horse which has never been immunised with the diphtheria bacillus or its products, have often the power of neutralising diphtheria toxin[2]; and it has been shown, in the case of the horse at least, that this protective serum unites with toxoids as well as with toxin proper, just as does the serum of an immunised animal—that, in a word, it contains true antitoxin.[3] The diphtheria antitoxin found in man is probably due, as A. Wassermann has suggested, to some previous attack of diphtheria, possibly unrecognised, while that found by Fischl and Wunsheim in the placental blood of infants may have been derived from mothers who had had the disease. Now that the horse has been found to suffer naturally from diphtheria the presence of diphtheria antitoxin occurring naturally in this animal is easily explained.

Professor Ehrlich,[4] however, has suggested another explanation of the natural occurrence of diphtheria antitoxin in man and horses which brings this fact into harmony with his most interesting *Seitenkette* theory of the origin of antitoxin. His argument may be shortly stated as follows: Foodstuffs must of necessity have a chemical affinity for some part of the substance of the cells which they nourish. He assumes that the molecules of the cells have "side-chains," and that the molecules of the food have "haptophoric" groups of atoms, by means of which they bind themselves to these side-chains of the cell molecule. The bacterial poisons and certain other poisons, such as venom, ricin, abrin, &c., also have "haptophoric" groups of atoms in their molecules which enable them to bind themselves to the molecular side-chains of the cells which they destroy. Now the living cells do not possess special kinds of molecular side-chains merely that they may be susceptible to the action of certain poisons; but it happens that the binding groups of each of these poisons are identical with the binding groups of some particular food-stuff, so that the poison is able to act by seizing on to a side-chain hung out, so to speak, to catch food. Experiment has shown that the injection of these toxins, or even of their binding groups alone (toxoids) into animals causes the appearance in their serum of a specific antitoxin; and that the injection of certain food-stuffs also, such as globulin, peptone, &c., produces specific anti-bodies (precipitins) strictly analogous to the antitoxins, in the serum of the animals injected.[5] From this it may be inferred that the injection of a food-stuff which has binding groups identical with those of a certain poison ought to produce the same anti-body as the injection of the poison itself. Thus Ehrlich suggests that diphtheria antitoxin in apparently normal animals is present as a consequence of the assimilation of some food-stuff which has the same binding groups as diphtheria toxin.

I do not wish to enter into any general discussion of, much less to attack, the *Seitenkette* hypothesis, which knits together, and is supported by, so many observations; but I must point out that the fact that the horse may suffer from diphtheria suggests a much easier explanation of the occurrence of diphtheria antitoxin in this animal than that put forward by Ehrlich. Moreover, the fact that all horses do not possess this natural antitoxin is more consonant with the view that it is present in those which have accidentally contracted the disease than with that which attributes it to the assimilation of a certain food, seeing that the food of all horses is so nearly alike. It is hardly necessary to mention that up to the present time no food-stuff has been found the injection of which will lead to the appearance of diphtheria antitoxin, and, so far as I can ascertain, no normal animal, with the exceptions already mentioned, possesses an antitoxin of any kind in its blood.

The fact that diphtheria antitoxin is present in many horses[6] in this country and on the continents of Europe and America suggests that diphtheria is a common disease among these animals; and this is in accordance with the well-known susceptibility of some of them to the action of diphtheria toxin. It is therefore possible that the horse may be found to play a not inconsiderable part in the transmission of diphtheria.

Cambridge.

[1] A. Wassermann: Deutsche Medicinische Wochenschrift, Leipsic, 1894, Band v., V.B., s. 120, and Zeitschrift für Hygiene, Leipsic, Band xix., s. 408. Orlowski: Deutsche Medicinische Wochenschrift Leipsic, 1895, s. 400. Fischl and Wunscheim: Prager Medicinische Wochenschrift, 1895, Heft 45 and Heft 51, and Zeitschrift für Heilkunde, Berlin, Band xvi., Heft 5 and Heft 6.

[2] Roux and Martin: Annales de l'Institut Pasteur, Paris, 1894, viii., p. 616. Meade Bolton: Journal of Experimental Medicine, New York, 1896, vol. i., p. 543. Cobbett: Journal of Pathology and Bacteriology, London, vol. iii., p. 323. THE LANCET, August 5th, 1899, p. 332. Centralblatt für Bakteriologie und Parasitenkunde, Jena, 1. Abtheilung, xxvi., s. 548.

[3] Cobbett: THE LANCET; Centralblatt für Bakteriologie und Parasitenkunde, loc. cit.

[4] Croonian Lecture, March, 1900; Proceedings of the Royal Society, London, vol. lxvi., p. 424.

[5] Myers: THE LANCET, July 14th, 1900, p. 98.

[6] Dr. Meade Bolton found it in three horses out of 12 examined by him in Philadelphia. I found it in nine out of 13. Of these 10 came from London and eight of these possessed an antitoxic serum, while the other three lived in Cambridge, and the serum of one only had an antitoxic action. Thus in a limited experience it was present in 80 per cent. of London horses and in only 33 per cent. of Cambridge horses. This corresponds with the much greater frequency of diphtheria in London than in Cambridge. Of course if I had examined another Cambridge horse and found antitoxin the percentage of those containing an antitoxic serum would have jumped to 50. One must, therefore, not attach much importance to this ratio. Moreover, in Meade Bolton's experience antitoxin was present in only 25 per cent. of Philadelphia horses, and diphtheria is twice as common in that town as it is in London.

# THE INCREASE AND DISTRIBUTION OF CANCER IN EASTERN ESSEX.[1]

BY GEORGE MELMOTH SCOTT, B.A., M.B., B.C. CANTAB.

SOME 1000 deaths from cancer occurred within the two unions of Chelmsford and Maldon in Eastern Essex between the years 1871–1898 inclusive. This period contained two complete intercensal periods of 10 years each (1871–1880 and 1881–1890) and an incomplete period of eight years (1890–1898). In order to compare the mortality of one period with another it was necessary to calculate this last incomplete period to 10 years—i.e., the figures shown are ten-eighths of the figures of those obtained from the registers. These figures are shown in Table I.:—

TABLE I.—*Total Number of Deaths in each Decade.*

| — | 1871–1880. | | | 1881–1890. | | | 1891–1900. | | |
|---|---|---|---|---|---|---|---|---|---|
| | Total deaths | Proportion of males to females. | Deaths per 1000. | Total deaths. | Proportion of males to females. | Deaths per 1000 | Total deaths. | Proportion of males to females. | Deaths per 1000. |
| Persons ... | 274 | — | 4·78 | 355 | — | 6·23 | 447·5 | — | 7·73 |
| Males ... ... | 93 | 51·38 | 3·22 | 135 | 61·36 | 4·74 | 203·75 | 83·59 | 7·05 |
| Females ... | 181 | 100 | 6·36 | 220 | 100 | 7·73 | 243·75 | 100 | 8·41 |

From this we see that the number of deaths per decade increased from 6·36 in the first, to 7·73 in the second, and 8·41 in the third. At first sight this would appear to be conclusive evidence of an increase but further investigation throws doubt upon it, for the same table shows that the increase is largely in the male population, while the female death-rate is much more nearly stationary. Thus to every 100 women dying from cancer in the first decade 51 men died; in the second decade 61 men died to every 100 women; and in the third 83 men to 100 women. A further analysis of the deaths among men is shown in Table II. Here the cases in which the cancer occurred in the lip, the tongue, the throat, the penis, and the testis, easily accessible parts, are separated from those in which it occurred in more deeply-seated organs. Perhaps the same results given in ratio will be more easily grasped and expressed in that way we may state that while in the three decades accessible cancer increased in the ratios of 1·0, 1·6, and 2·4. less accessible cancer increased in the ratios 1·0, 2·2, and 3·5—that is to say, the increase was much more marked in

[1] Abstract of a paper read before the section of State Medicine of the British Medical Association at Ipswich on August 2nd, 1900.

those parts of the body where it could be diagnosed by increased knowledge and skill on the part of the medical men certifying. Furthermore, only of recent years has the Registrar-General inquired as to the nature of the "tumours" and "growths."

On the whole, then, our figures tend to show that there has been some actual increase in the number of deaths due to cancer in the past 30 years, but my own impression is that the increase has been much more marked in the professional skill of the medical men certifying. The object was to test Mr. Alfred Havilland's theory by applying it to this part of the country. This theory postulates that (1) in the counties having a high mortality from cancer we find that the tributaries of the large rivers rise from soft marshes or other easily-disintegrated rocks and these fall into sheltered valleys through which the main rivers flow; (2) that these rivers invariably flood their adjacent districts during the rainy season and have generally their waters coloured by the suspension of alluvial matter; and (3) that the districts "characterised by the tertiary and more recent clays and other retentive soils have a very high mortality from cancer." In order to test the soundness of the theory we must first get a clear conception of the contour, geology, &c., of the district which we are investigating. This consists of the two unions of Chelmsford and Maldon, the former of which lies to the west of the latter, the two together forming a tract of country extending inland some 25 miles from east to west, while from north to south the distance is roughly from 10 to 15 miles. The district forms an irregular parallelogram, being bounded on the east by the North Sea, on the south by the river Crouch, and on the west by a line running north and south some six miles to the west of Chelmsford. The northern boundary is more irregular. The area of the whole is 175,231 acres. (In future I shall refer to the two unions together as the "area") In one respect the physical features of the two unions differ markedly, for while the Chelmsford Union is entirely inland and is watered by small rivers only the Maldon Union is cut in two from east to west by the great salt-water estuary of the Blackwater, and is bounded on the south by the very similar estuary of the Crouch. The country lying on each side of these estuaries, and the seashore lying between their mouths, is extremely flat, the water being kept out by sea walls, and the fields intersected with small creeks and ditches, while, as the map shows, in many places there are "saltings"—i.e., land which grows a rough species of grass, although covered with salt water at high tides. This part of the country used formerly to be the home of malaria. The geology of the whole district might fairly be summed up in the one word "clay." Excepting along the course of the rivers and on the seacoast, where there is a deposit of alluvium, the geological map is coloured one uniform tint over the whole area. In the higher parts of the south-western division the clay is capped with beds of Bagshot gravel and sand, while small deposits of a similar character are scattered irregularly and sparsely over a large part of the rest of the area. From this short description it may be gathered that we have to deal with a district in parts of which, at all events, one would presume a very high cancer mortality, if Mr. Havilland's theory be correct. I shall now proceed to put this presumption to the test.

TABLE II.—*Cancer in Accessible and in Inaccessible Parts of the Body.*

| — | 1871–1880. | | | | 1881–1890. | | | | 1891–1898. | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Males. | | Females. | | Males. | | Females. | | Males. | | Females. | |
| | No. | Proportion, total = 100. | No. | Proportion, total = 100. | No. | Proportion, total = 100. | No. | Proportion, total = 100. | No. | Proportion, total = 100. | No. | Proportion, total = 100. |
| External organs. | 10 | 3·6 | 80 | 29·2 | 16 | 4·4 | 100 | 27·7 | 24 | 5·3 | 87 | 19·4 |
| All other organs. | 46 | 16·8 | 64 | 23·4 | 101 | 28·0 | 84 | 23·3 | 162 | 36·1 | 129 | 28·8 |
| Not stated. | 34 | 12·4 | 39 | 14·2 | 22 | 6·1 | 37 | 10·2 | 16 | 3·5 | 30 | 6·7 |

The report of the Registrar-General for the period 1881–1890 shows that the cancer death-rate for Essex is by no means high, although the soil of the county is largely clay, and although it bounds large estuaries and contains considerable tracts of low-lying land. Yet there are 32 counties in England and Wales with a higher mortality from cancer, as against 13 with a lower. This alone would tend to show that the geographical peculiarities of the county are not such as to promote the disease, and Table III. emphasises the point, for there we see that not only is the cancer death-rate of Essex below that for England, but the rate for these two unions with their large amount of foreshore is below that of the county as a whole, and yet, further, the rate for the Maldon Union, which is bounded by two large estuaries and contains large marshes and saltings, is below that for the drier union of Chelmsford.

TABLE III.—*Death-rates per 1,000,000 calculated to Standard Population—1881–1890.*

| Areas. | Ages and proportion of persons. | | | | | | Totals. |
|---|---|---|---|---|---|---|---|
| | 25– | 35– | 45– | 55– | 65– | 75– | |
| England ... ... ... | 189 | 665 | 1311 | 1644 | 1393 | 524 | 5746 |
| Essex ... ... ... ... | 169 | 521 | 1140 | 1578 | 1410 | 619 | 5437 |
| The two Unions ... | 147 | 608 | 959 | 1231 | 1236 | 642 | 4823 |
| Chelmsford Union ... | 208 | 603 | 1089 | 1204 | 1306 | 695 | 5105 |
| Maldon Union ... | 54 | 613 | 781 | 1266 | 1137 | 566 | 4417 |

If now we divide up our area into smaller units we arrive at some interesting results. In order to eliminate error as far as possible the whole area has been divided into parishes and groups of parishes in such a way that the population in each group shall not be less than 1000 and the death-rate has been estimated from the returns for the years 1871–1898. Time will only allow me to give an outline of the results. The highest mortality (8·9 to 8·02 per 1000 per decade) occurs in the Waltham and Purleigh groups. Of these, Great Waltham is situated in the extreme north-west part of our area. The soil consists entirely of clay, which rises in one part to a height of 230 feet above mean sea-level, and is nowhere less than 130 feet. It may be considered a fairly elevated parish. Through it runs the Chelmer, which is here little more than a brook, but such as it is the houses are mostly aggregated in its vicinity. The floods in this and other parts are seldom serious, as the rainfall rarely exceeds 25 inches per annum. The Purleigh group also lies fairly high, a large part of the surface being above the 100 feet contour, while it rises in one part to 170 feet. The village of Purleigh comprises by far the largest collection of houses within the group and is situated on a sharp slope. The low-lying part of the parish is liable to be flooded when Purleigh Wash is swollen by very heavy rains, but there are few houses in the vicinity. The lowest mortality occurs in the groups of Tollesbury and Wickham Bishops. Tollesbury (with the lowest death-rate of all) is extremely flat, the village being situated at an elevation of 85 feet only. The outline of the parish is roughly triangular, two sides of the triangle being formed by muddy foreshore, creeks, and saltings; more than half the parish is under water at high tide; there are no fresh-water streams. In contrast with the above is the Wickham Bishops group. Here the largest collection of houses is the village of Wickham itself, situated on a patch of gravel at an elevation of 230 feet, the village church forming a conspicuous landmark. Although the (fresh water) river Blackwater, which is liable to floods, bounds the group on one side, yet there are very few houses in the vicinity of the water. But the most striking differences in cancer mortality under closely similar circumstances are shown in the contiguous groups of Burnham and Southminster. Both include saltings and a large extent of marsh land; one has a long frontage to a tidal river, the other a (shorter) frontage to the low seashore. In both the majority of the inhabitants live in small towns. And yet, although Burnham town is on the banks of the river and Southminster town is situated at a distance from the water the former has a low mortality and the latter a high.

These six instances serve to illustrate the results shown throughout the entire area—viz., that in this part of Essex cancer death-rate bears no evident relation to the variations in the physical features of the country.

Assuming the truth of Mr. Havilland's theory we should expect, if anywhere, to find a high cancer mortality along the course of our rivers, for although they cannot be said to

be subject to very frequent flood or yet to run through very sheltered valleys, yet they rise from, and run through, retentive soil and overflow their banks whenever the rainfall is especially heavy. The facts of the case, however, tend to point to an opposite conclusion for those groups which lie on the banks and shores of our rivers and estuaries have with only one exception a death-rate below the average of the whole area.

Taking first the river Crouch we have already seen that in the Burnham group, situated at the mouth of the estuary, the mortality is low (4·24 per 1000). The groups to the west of this latter are those of Latchingdon, Stow Maries, and Runwell, with death-rates of 4·96, 4·71, and 3·96 per 1000 respectively, all of which are decidedly below the average of 6·70 per 1000. The proximity of the river Crouch, therefore, cannot adversely affect the cancer mortality in its neighbourhood. And the same conditions obtain with respect to the river Blackwater, the north bank of which is formed from east to west by the groups of Tollesbury (a small slip of Tolleshunt d'Arcy), Goldhanger, Langford (Hatfield), Boreham, and Springfield. These have mortality rates of 3·41, 4·99, 5·56, 7·86, and 4·54 per 1000, all of which are below the average, with the exception of that for Boreham. On the south bank of the river lie the groups of Bradwell, St. Lawrence, Latchingdon, Maldon, Woodham Walter, and Little Baddon, with death-rates of 6·64, 5·43, 4·96, 6·14, 4·70, and 6·26 per 1000, all of which, again, are below the average of the whole area, although somewhat higher than the rates which obtain along the north bank of the river.

If, then, we may attach any weight to the results of this inquiry we must look for the causes of cancer in some other direction than in an alluvial and clayey soil, subject to floods, for, to sum up, (1) the disease is less common within the county of Essex, with its clay soil and numerous estuaries, than it is in England as a whole; (2) although the unions of Chelmsford and Maldon contain an excessive proportion of marshy land and estuary yet their death-rate is below that of the county; (3) those parts of the two unions which include the greatest extent of muddy foreshore, creek, and saltings have a mortality below that of the two unions taken together; and (4) the disease is not especially prevalent in those places which are situated on the banks of the fresh-water rivers.

Witham, Essex.

# THE MICROSCOPIC APPEARANCES OF THE MOTOR GANGLION CELLS IN FIVE CASES OF PERIPHERAL NEURITIS.

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*(From Dr. J. Lindsay Steven's Wards in the Glasgow Royal Infirmary.)*

THERE now seems to be little doubt that motor ganglion cells undergo certain histological changes as a result of injury to their peripheral terminations. The investigations of Nissl, Marinesco, Lugaro, Van Gehuchten, and others have established this as being beyond dispute. Nissl tells us that after injury to a nerve chromatolytic changes appear in the ganglion cells within 24 hours and that by the end of from seven to 14 days these changes have become very marked. They reach a maximum from the twentieth to the thirtieth day and remain stationary at that for some time. In many of the cells recovery takes place, due either to regeneration of the nerve or to the tonic or trophic influence of adjacent or other ganglion cells, so that at the end of about from two to three months it is difficult to recognise these cells as having at any time been abnormal. Certain cells, or groups of cells, however, do not recover, but, on the other hand, undergo complete atrophy and disappear. It seems established, then, that even as by Waller's law degeneration of a nerve-cell causes degeneration in its nerve-fibre, so injury to the nerve-fibre causes corresponding changes in the nerve-cell. This leads to the discussion as to whether the poisons causing peripheral neuritis affect directly the peripheral nerve-fibres or act by first poisoning its nerve-cell—whether, in other words, the peripheral part of the neuron displays a certain independence in presence of certain morbid processes or that a degeneration of nerves means a primary lesion, or at least some primary dynamic trouble in the cell, seeing that the cell constitutes the central part of the neuron. The question is difficult and it has led to much dispute. The truth would seem to be that the trophic function does not reside in one single part of the neuron but that the vitality of the whole depends on the vitality of each constituent part. The poison in peripheral neuritis being in the circulation will reach the whole neuron, and while it affects the vitality of the whole it is in its most outlying part—the distal end of the axon—that the histological changes are first recognised. That it is the peripheral part of the neuron which is chiefly or wholly so affected has been demonstrated in numerous cases of peripheral neuritis, for it has been shown in these cases that the proximal portions of the nerve, the nerve-roots, and in some cases the ganglion cells themselves, have remained apparently unaltered.[1] The onset, moreover, of the paralysis in the extremities of the limbs points to the conclusion that it is not only the terminals of the neurons but the terminals of the longest neurons that first show disintegration and are first to lose the power of conduction. It is not, however, the purpose of this paper to discuss in detail the pathology of peripheral neuritis, but rather to furnish an account of the microscopic examination of five cases of that disease, contrasting the appearances they present with those already referred to as having been produced experimentally in animals.

The spinal cord was examined in all the cases, but only in the last three could the medulla and pons be obtained. The cords and medullas were fixed and hardened in formol (10 per cent.), embedded in celloidin, and stained with (*a*) theonin, and (*b*) hæmatoxylin and eosin. The nerves examined were the median and radial in the arms, the anterior and posterior tibials in the legs, and in two cases the right vagus at the level of the clavicle. The terminal fibres of these nerves were chosen by preference for examination and many terminals in each nerve were examined. They were fixed and stained in osmic acid (1 per cent.) and the individual fibres carefully separated from each other in xylol. The anterior roots, which were fixed along with the spinal cords in formol, did not stain so as to show their myelin, but in the roots of the first three cases the axis cylinders and cone-like framework of the myelin could be made out to be intact, and I take it, therefore, that these roots had undergone little degenerative changes. Of the anterior roots in the other two cases I can give no opinion.

CASE 1. *Alcoholic neuritis affecting the lower limbs and associated with tuberculous pleurisy and peritonitis.*—A man, aged 30 years, a clerk, was admitted into the Glasgow Royal Infirmary on April 21st, 1899. The patient dated his illness from a sudden attack of breathlessness about six weeks before admission. He was going up stairs at the time and it was with considerable difficulty that he could get to his room. Since then he had been more or less constantly confined to his bed, the dyspnœa being at times very troublesome. Excess in alcohol for many years was freely admitted. On admission the patient was seen to be very ill. There was evidence of a large quantity of fluid in the left pleural cavity. There was double foot-drop and very little voluntary movement even in the flexor muscles of the feet and legs. Tactile sensation, as far could be made out, was not involved, but the muscles of the feet and legs were painful on pressure. A bed-sore was present over the left trochanter. Dyspnœa was urgent. He died on the 27th.

At the necropsy the left pleural cavity was found to contain a large quantity of blood-stained fluid. Both surfaces of the pleura were studded with tubercles. The left lung was completely collapsed but otherwise healthy. The right lung was œdematous but free from tuberculous disease. The heart muscle was soft and pale. The omentum was much thickened and infiltrated with tubercles. The peritoneum was also studded all over with numerous small tubercles. The liver, spleen, kidneys, and alimentary tract appeared to be healthy, but there was evidence of atheromatous changes in the vessels. Microscopic examination of the nerves in the feet showed a well-marked parenchymatous neuritis. Scarcely a normal fibre could be found, and in many of the fibres the coagulated myelin had entirely disappeared, leaving nothing but the sheath and its nuclei.

[1] Allbutt's System of Medicine, vol. vi., pp. 685 and 715.

The cord was examined at 19 different levels—viz., seven cervical, six dorsal, five lumbar, and one sacral. In the last of these (the upper sacral segment) the appearances were most interesting. Scarcely one single normal cell could be found and yet in none had the changes caused a complete disintegration of the cell structure. There were examples of all the different stages of chromatolysis, from the almost normal cell to the faint and almost invisible "ghost cell." In about half of the number of cells the Nissl bodies had become fragmented, giving the plasma of the cell a powdered appearance, but these fine powdered granules still stained with considerable intensity. In the rest of the cells the granules were evidently disappearing, first from around the nucleus, then on towards the periphery till some cells had only a narrow outer rim of these fine granules, the rest of the plasma being pale. There were a certain number of typical "ghost cells," but they were not numerous. The nucleus seemed affected in only a small percentage of the cells and in these it had become peripheral. Yellow pigment was found in about 25 per cent. of the cells, but it was small in amount, very faint in colour, and seemed to be made up of unusually fine granules. Indeed, unless under a high-power lens this pigment had the appearance of a diffuse yellow stain rather than of a granular deposit. In the lumbar region the appearances were much as above described, possibly more pronounced, more cells having undergone complete chromatolysis. It is also to be noted that in the lumbar region the postero-lateral group of cells seemed more affected than the anterior or antero-lateral groups. In the dorsal, and possibly in the upper lumbar, segments the ganglion cells were practically normal. A few cells in the centre of the anterior horns were paler than normal and showed some fragmentation of their granules, but the anterior cells (medial and anterior groups) were almost invariably normal. Of the cells in the lateral horn (intermediate group) it is difficult to speak with certainty as they are normally small and their appearances are not too well defined. In the uppermost cervical segments the conditions were as in the dorsal region. Throughout the cervical enlargement the degenerative changes in the anterior and lateral groups were even more pronounced than those found in the lumbo-sacral cells. In most of these cervical cells the fragmented granules had entirely disappeared, leaving the cells ghost-like, and in many the nucleus was peripheral. It is to be noted, however, that the small inner or medial group of cells were practically unaffected by these changes. It is difficult to speak with certainty as to whether or not the degenerative processes above described had caused the loss of a certain proportion of ganglion cells, but examination of many normal cords convinced me that in this case there had been no such destruction of cells. A number of sections from various levels were stained with hæmatoxylin and eosin, but beyond showing an undoubted colloid degeneration in the coats of the vessels there was no other abnormality to record.

CASE 2. *Typical case of alcoholic neuritis affecting both arms and both legs.*—A woman, aged 42 years, was admitted into the Glasgow Royal Infirmary on Oct. 16th, 1899. The patient stated that she was in good health up to five weeks before admission. The first symptoms complained of were feelings of "pins and needles" in the feet and legs, which gradually extended up to the middle of the thighs. Two weeks later the same sensations were experienced in the hands and arms. Loss of power in the arms and legs subsequently developed. There was a history of alcoholism extending over the past three years. On examination a well-marked wrist-drop was found to be present, the paralysis of the extensors of the wrists and hands being complete. The flexors were also involved but to a less degree. The movements at the elbow were all fairly good. There was double foot-drop. The patient could draw up her knees but she was unable to raise the feet from off the ground. There was some slight voluntary movement in the toes, but there was no movement at the ankle-joints. The prickling sensations were still complained of in the arms and legs, but careful examination could detect no definite impairment of the tactile, thermal, or pain senses. The knee and plantar reflexes were absent. There was no heart lesion and the respiratory movements were normal. There were incontinence of urine and fæces. The patient died on the 26th.

The necropsy was practically negative as regards macroscopic appearances. The lungs were somewhat congested and the liver was large and fatty, but the heart, kidneys, and spleen all looked quite normal. There was no atheroma noted in the vessels. On microscopic examination nerve-fibres from the arms and legs showed a very marked parenchymatous degeneration. Very few normal fibres could be found and the degenerative change was equally marked in the arms as in the legs. The cord was examined at 12 different levels—viz., three cervical, six dorsal, two lumbar, and one sacral. The appearances here corresponded closely to those found in Case 1, but they were more pronounced. In the sacral and lumbar regions there were almost no normal cells and those that did exist were situated in the most anterior part of the lateral groups. Most of the cells were "ghost cells," a few had the powdery granulation, and a certain proportion showed a complete disintegration of the cell plasma, there being in these not only loss of Nissl's granules but also absence of nucleus, and, indeed, of any internal structure whatever. In many of the cells the nucleus was peripheral. In the cervical enlargement the changes were similar to those in the lumbo-sacral, but they were more pronounced, there being more cells with peripheral nucleus and more with disintegration of their cell substance. But here again, as in Case 1, the median group of cells was practically normal. The cells of the dorsal region were normal except at the lowest segment, where in the lateral group there was a certain proportion of chromatolytic cells. The yellow pigment in this case is worthy of note. It was very abundant at all levels of the cord. Nearly every cell contained some pigment and at least half the cells had half their plasma occupied with the pigment granules. Many cells were entirely filled with it and it is to be noted that healthy cells were as much (if not more) pigmented as chromatolytic cells. The pigment granules in this case were larger and deeper in colour than those in Case 1. There was no apparent diminution in the number of ganglion cells at any of the levels. The sections stained with hæmatoxylin and eosin showed some small hæmorrhages, dilated vessels (especially veins and capillaries), and a well-marked colloid degeneration in the vessel walls.

CASE 3. *Alcoholic neuritis involving chiefly the lower limbs.*—A woman, aged 40 years, was admitted into the Glasgow Royal Infirmary on June 15th, 1899. The illness began about six weeks before her admission into the infirmary with a feeling of burning heat in the toes of both feet, and this gradually spread upwards as high as the knees. There were no subjective abnormal sensations in the hands or arms. For a fortnight before admission there was difficulty in walking. Sickness and vomiting persisted during the illness. For some years the patient had taken alcohol to considerable excess. She was in the habit of having quantities of whisky every day and of being intoxicated two or three times a week. On examination no definite paralysis could be made out in any of the muscles of the hands or arms, but the grasp in each hand was distinctly feeble. The loss of power in the legs was more apparent, though here again there was no complete paralysis, and the patient could stand without support, but not without staggering. Sensation was normal except for a dulling of the sense of pain on the dorsum of the right foot. There were no mental symptoms. The pupils were unequal, but they responded normally to light and accommodation. The patient died on July 4th.

At the necropsy the various organs were found to be healthy except the kidneys, which showed a commencing interstitial nephritis. Microscopic examination showed a well-marked parenchymatous degeneration in the nerves of the arms and legs and in the right vagus. This was perhaps most marked in the vagus and least in the arms, but in none of the specimens were many normal fibres to be found. The cord was examined at 15 different levels—viz., three cervical, eight dorsal, three lumbar, and one sacral. In the lumbo-sacral segments in almost all the cells there seemed to be a slight fragmentation of the Nissl bodies, though in none was this so extreme as to give the powdery appearance described in Case 1 and Case 2; indeed, the granules in this case were not so much lessened in size as that their shape was ill-defined, and they and their surrounding plasma seemed too deeply stained. About a third of the cells, on the other hand, were unduly pale, but this seemed to be caused not so much by an absence of chromatic granules as by these granules staining with less intensity than normal. It is to be noted, further, that these changes were more marked at the periphery of the cell than

round the nucleus and also that the cells of the postero-lateral groups seemed more affected than the cells more anterior. In the cervical enlargement the appearances were much the same, with perhaps a rather larger proportion of pale-staining cells. In the dorsal region there was practically no chromatolytic changes. Pigmentation was quite as abundant as in Case 2. As compared with Case 1 and Case 2 there seemed to be a smaller number of cells in the anterior horns, especially in the lumbar and sacral segments, but it is difficult to be sure that this is due to atrophy of a certain proportion of cells. A similar examination to the above was made of the motor nuclei in the medulla and pons, but there were no definite changes to be recorded. The pigmentation here, as in the cord, was extreme. The Nissl bodies, too, were rather ill defined, but there was no well-marked chromatolysis to be made out. It is to be noted that the cells in the motor nucleus of the tenth nerve were no more affected than those in the nuclei of the twelfth nerve, the eleventh nerve, and the seventh nerve. As in the last case, the vessels were dilated and their walls showed the colloid degeneration. There were no hæmorrhages and no perivascular dilatations or exudations.

CASE 4. *Alcoholic neuritis affecting the lower limbs and complicated with tuberculous pleurisy.*—A man, aged 42 years, was admitted into the Glasgow Royal Infirmary on Jan. 11th, 1900. He was first conscious of loss of power in the legs a month before admission to hospital, but he had complained of pains in his feet for a much longer period. For three years he had been most intemperate in his habits and during that time he had at least one attack of delirium tremens. On examination the lower limbs were found to be completely paralysed, their muscles being wasted and very flabby. There seemed to be loss of sensation in the legs, but the patient's speech was thick and indistinct and one could not be certain as to the accuracy of his answers. There was a small bed-sore over the sacrum. The knee reflexes and plantar reflexes were abolished. There was no paralysis in the hands or arms. The pupils were normal; occasionally slight divergent strabismus was to be observed. The patient died on the 12th, within 30 hours after admission.

At the necropsy the right pleural cavity was found to contain a considerable quantity of fluid and its lining membrane was studded with tubercles. The right lung was collapsed and on section there were seen to be several small tuberculous cavities scattered throughout its lower lobe. The left lung was congested and œdematous. The kidneys showed the appearances of commencing interstitial nephritis. The other organs seemed healthy. Microscopic examination of the nerves of both arms and both legs, as well as of the vagus, showed an undoubted parenchymatous neuritis. The condition was most marked in the vagus and about equally marked in the nerves of the four limbs. The cord was examined at 17 different levels—viz., five cervical, eight dorsal, three lumbar, and one sacral. In the lumbar enlargement almost all the cells showed a certain degree of chromatolysis and in the vast majority of the cells this consisted of a fragmentation of the Nissl bodies into smaller granules. These granules stained deeply and only a few cells could be found from which the granules had disappeared. In the sacral region (third sacral segment) the appearances were much the same, but a smaller proportion of cells was affected. The above changes were no more marked in one group of cells than in another. In the upper lumbar region (second lumbar segment) about half the cells in the lateral groups showed this fragmentation of their granules, the remaining cells being practically normal. As in the other cases, the cells in the dorsal region remained unaffected unless for a few solitary cells in the centres of the anterior horns. In the cervical enlargement the appearances were much the same as in the lumbar, only more pronounced. Many of the cells had lost their granules, some had peripheral nucleus, and some showed no internal structure whatever. As far as could be made out the changes seemed to begin round the nucleus and progress towards the periphery of the cell. As compared with Case 1 and Case 2 the chromatolytic changes here were not so well marked, but as compared with Case 3 much better marked. There was a considerable amount of yellow pigment present in the ganglion cells. It was most abundant in the cervical region, where, indeed, the cells were almost as much pigmented as in Case 2. There was little pigment in the dorsal region and a moderate amount in the lumbo-sacral regions. There was no apparent diminution in the number of cells in any of the segments examined. Sections were made at seven different levels of the medulla and pons, but there were no well-marked changes in the motor nuclei to be recorded. In the nucleus ambiguus many of the cells showed a certain degree of fragmentation of their granules and some cells were distinctly pale. But the other nuclei examined (the twelfth, the eleventh, and the seventh) seemed quite normal. The vessels throughout the pons, medulla, and cord showed a well-marked colloid degeneration in their walls.

CASE 5. *Chronic interstitial nephritis in a patient who a year before had been affected by lead-palsy.*—A man, aged 40 years, a house-painter, was admitted (for the second time) into the Glasgow Royal Infirmary, on Jan. 19th, 1900. This patient first came under observation in December, 1898, with lead paralysis affecting the right hand and wrist of two months' duration. On examination he was found to have marked atrophy and flabbiness in the extensors of the right forearm, but the flexors of the supinator longus did not seem involved. There was but slight power of extension in the fingers and wrist. The dynamometer registered 10 kilogrammes in the right as against 35 kilogrammes in the left hand. The patient complained of shooting pains along the radial aspect of the arm but there was no other affection of sensation. The legs were unaffected and the knee-jerks were quite active. The man had worked with lead for 28 years and during most of that time he had suffered with cramps and colicky pain in the abdomen. He was moderate in the use of alcohol. There was a mitral regurgitant lesion and evidence of some chronic renal disease. He was dismissed after a month's residence in hospital very much improved, but he was re-admitted a year later as suffering from a well-marked interstitial nephritis and in a very feeble condition. By this time the paralysis had almost completely disappeared, though when at work there was still difficulty with some of the muscles of the right hand. The dynamometer now registered 25 kilogrammes in the right and 26 kilogrammes in the left hand. Signs of uræmic poisoning subsequently developed and the patient became comatose and died on the 22nd.

At the necropsy the left ventricle was seen to be greatly hypertrophied and the mitral curtains to be the seat of old-standing disease. The lungs were adherent from former pleurisy but otherwise healthy. The kidneys showed well-marked interstitial nephritis. The other organs were healthy. Microscopic examination of the nerves of both arms showed undoubted parenchymatous neuritis. The vagus and the nerves of the leg were not examined. The cord was examined at 15 different levels—viz., seven cervical, seven dorsal, and one lumbar. No definite chromatolytic change was to be found in any of these segments and the cells in the cervical seemed to be as healthy as those in the dorsal region. In the cervical enlargement the large ganglion cells possibly were smaller than normal, there seeming to be a larger proportion of the smaller cells than one usually sees, but this may have been the result of fixing, for the condition was no more marked on the right than on the left side of the cord. There was a large amount of yellow pigment in the cells, quite as much as in Case 2 and Case 3. The motor nuclei of the medulla and pons were likewise examined, but otherwise than the pigmentation there was no abnormality to record. The vessels in this case, as in the four former ones, had a colloid degeneration of their walls, and the veins and capillaries were greatly congested.

In dealing with the various appearances found in these five cases we must first consider the meaning of the changes in the peripheral nerves. In three of the cases it will be seen that although there was but slight loss of power in certain of the muscles there was well-marked neuritis in the corresponding nerves. In Case 3, for example, there was only slight impairment of muscle power in the arms and legs; in Case 4 there was no loss of power in the arms; and in Case 5 the paralysis in the arm had practically disappeared some time before death. But in my experience it is not uncommon to find changes in certain nerves when there is no apparent paralysis in the corresponding muscles. I have seen this in cases of beri-beri and also in cases dying from certain suppurative diseases. In Case 1 and Case 4, in both of which the patients died with an acute tuberculous affection, one would not be surprised to find such an alteration in the nerves. The same might also apply to Case 5, where the cause of death was interstitial nephritis. In this last case, ever

although there had been no regeneration in the nerves following the lead palsy, the parenchymatous changes certainly suggested a much more recent degeneration than the history of the paralysis would make one expect, for we look for the myelin to have more or less completely disappeared from the degenerated nerve-fibre by the end of from three to four months. The report of this case, however, tells us that the lead paralysis had appeared more than a year before. In view of these considerations I much regret that the nerves in the five cases were not examined over a wider area of the body, and also that the nerves in the arms and legs were not investigated at their more proximal as well as at their distal ends; but when the post-mortem examinations were made the cases had a different interest from what they now have and there was then no thought of gathering them together into such a series as this. It is also a matter for regret that the nervous symptoms, especially in regard to the electrical reactions, were not more carefully investigated; but in at least three of the cases the neuritis was only a complication of much more serious conditions, and, indeed, the patients were too ill to permit of detailed examination.

As regards the appearances in the motor ganglion cells, Case 1, Case 2, and Case 4 all show chromatolytic changes corresponding more or less closely to those found in animals following injury to a peripheral nerve. If we may consider the duration of the symptoms in these three cases as any indication of the duration of the changes in the cells we may judge the chromatolysis to have been present from six to seven weeks, a period at which, according to Nissl's experiments, the cells would probably soon begin either to regenerate or, I suppose, to undergo atrophy and disappear. In none of the cases could I be certain that any of the chromatolytic cells had become swollen and in the condition described as the first stage of regeneration. Many of the cells were large, but if larger than normal their powdery granules, though quite deeply stained, were still perfectly discrete. In Case 2 some of the cells seemed to have gone beyond recovery, for they showed complete absence of internal structure, the cell plasma being homogeneous throughout. We must here again note that in Case 1 and Case 4 there was no paralysis observed in the muscles of the arms (so much so that in Case 1 no arm nerve was kept for examination), and yet the changes in the cells of the cervical enlargement were even more marked than those in the lumbo-sacral. It is to be recollected, however, that though there were no symptoms of paralysis in the arms in Case 4 the arm nerves showed undoubted neuritis. In Case 3, where such symptoms as these pointed to the duration of the neuritis being a little over two months, the appearances in the lumbar and cervical enlargements were not nearly so marked as in Case 1, Case 2, and Case 4. The condition of the cells certainly suggested a variation from the normal, but as to whether this indicated an early stage of degeneration or a later stage of regeneration I can offer no opinion whatever. In Case 5, if the motor cells in the cervical enlargement were at any time chromatolytic they had completely recovered, and although the nerves of the arm showed degeneration, as has already been pointed out, this is probably a different neuritis from that caused by the lead poisoning, from which, as the history of the case shows, the nerves must have almost completely recovered.

It has been claimed that the chromatolytic changes in the nerve-cell vary according as the injury is applied to the peripheral nerve or direct to the cell itself.[2] In the one instance the fragmentation of the granules is said to be first seen at the periphery of the cell and in the other round the nucleus of the cell. It is said that after section of a nerve fragmentation begins in the Nissl granules at the part of the periphery from which the axon takes origin. If this be so the chromatolysis in Case 1, Case 2, and Case 4, which seemed undoubtedly to be first perinuclear, would not point to the poison acting first on the peripheral nerve but on the ganglion cell. In Case 3, on the other hand, it was the periphery of the cell that seemed the more affected.

In considering the grouping of the cells in the anterior horns we find that the changes in some groups were much more marked than in others. In all the cases the inner or medial group remained practically unaltered right through its whole length in the cord. This is quite what we look for and it bears out the teaching that cells of the medial group are commissural and do not send their axons into any of the anterior roots. Of the lateral groups it is not possible to speak with so much assurance. In the dorsal region where the lateral cells were fused with the medial groups, they remained quite normal, but in the cervical and lumbo-sacral enlargements it was usually in the postero-lateral sub-group that the degenerative changes were most marked. This, again, is what we look for, as it is this group that has been found most affected in the experimental work already referred to, and it is in these postero-lateral cells that the greatest amount of atrophy is found in cases of old-standing amputation.[3]

It is difficult to give a definite opinion as to whether or not there was any diminution in the number of the ganglion cells. It was only in Case 3 and Case 5 that this seemed at all possible—at least, judging from the number of cells in the other three cases. None of the sections were stained by Marchi's method and so there was not the evidence of degenerated axons to help one to draw conclusions.

It will be observed that no reference has been made in any of these cases to the condition of the cells in the posterior horns. It would be a matter of great interest from the clinical point of view to be able to estimate the effects on the motor ganglion cells of neuritis in the corresponding sensory fibres. There seems little doubt that degenerative changes supervene in motor cells, especially those of the postero-lateral group, as a result of section of the afferent nerves and this is much more extreme and rapid when both anterior and posterior roots are divided.[4] May it not be that recovery in the motor cells in cases of peripheral neuritis depends to a certain extent on the implication or otherwise of the sensory fibres? In none of the five cases were the sensory symptoms well marked, and as neither the posterior roots nor the posterior root ganglia were examined I can have no data from which to draw conclusions, and I have also left out of consideration the posterior horn cells.

As to the significance of the yellow pigment in the ganglion cells something must be said, and yet it is difficult to deal with it in anything like a satisfactory or convincing manner. In four of the cases this pigment was very abundant. It was found to some extent in nearly every cell, it completely filled some of the cells, and in at least half the cells it occupied half their cell plasma. It seemed to be rather more abundant in what we may call the healthy cells, though it was also found in considerable quantity in those undergoing chromatolytic changes. It has been said that this pigmentation is a degenerative change and again that it is the result or expression of the functional activity of the cell. Possibly it is both. We know that the deposit of yellow pigment takes place at the expense of the Nissl bodies which it would seem disappear before the increasing pigment. Indeed, the process of pigmentation seems to cause a certain fragmentation of the chromatic granules, as can be seen with a high power lens on examining the line of contact between the chromatic and pigment granules.[5] If this be so, pigmentation becomes another form (if a very chronic form) of chromatolysis; and if the chromatic granules represent the functional potentiality of the cell, either in the form of nutrition or as energy, or as both of these combined, the destruction of these granules must mean a degenerative change, even if it be the result of an increased activity in the cell. If this pigmentation, then, is a chronic degenerative change we find a corresponding change in the vessels, for in the whole five cases there was found to be a colloid degeneration in the walls of the smaller vessel throughout the whole nervous system whenever examined.

In conclusion, I have to acknowledge the courtesy of Dr. J. L. Steven and Dr. G. S. Middleton, physicians to the Glasgow Royal Infirmary, for permission to put on record the above cases. I am likewise indebted to Dr. Workman, pathologist to the Glasgow Royal Infirmary, who so kindly placed at my disposal their pathological material. For a full bibliography see "Normal and Pathological Histology of the Nerve-Cell," by Dr. Ford Robertson, *Brain* Summer Number, 1899; and Dr. Barker's "Nervous System."

Glasgow.

[2] Barker: The Nervous System, London, 1900.

[3] Warrington: Journal of Physiology, June, 1898, and August, 1899.

[4] Ibid.

[5] "A Case of Gastric Tetany, with an Account of the Microscopic Appearances found in the Medulla and Spinal Cord," Glasgow Hospital Reports, 1899.

# SOME NOTES ON 100 CASES OF ENTERIC FEVER TREATED AT NO. 6 MILITARY GENERAL HOSPITAL, NAAUWPOORT, SOUTH AFRICA.

BY DERWENT PARKER, M.B. CANTAB.

THERE can be no doubt that the observation of a large number of patients suffering from the same disease at the same time gives opportunity of noting certain points which would probably be missed, or the observation be regarded as too uncertain to be worth publication, if the cases were isolated and seen at longer intervals. This is my reason for publishing, while still fresh, not only certain facts about my patients but also certain impressions which I have formed as regards their treatment. The patients were all strong young adults, which probably explains to some extent the different complications to which they were liable.

One of the first points noted was the great difference in the virulence of the attack according to the district from which it came. The cases from the Modder river, Norval's Pont, and Rensburg, and the districts about Rensburg and Arundel have almost all been of a severe type. But although there were great varieties according to the district in which the fever was contracted the general climatic conditions or some other factor have caused a progressive weakening of virulence and, on the whole, the later cases, no matter where they came from, have been milder than those of an earlier date. Though the average case was certainly more mild than the average cases seen either in the London general or the fever hospitals, and many cases were diagnosed as enteric fever which would not have been recognised as such in the absence of an epidemic (and these factors will certainly tend to improve the general statistics), on the other hand the most severe cases were infinitely more severe than anything I have seen in England. One patient had seven distinct perforations. Two others, if they had lived a little longer, must have had a still larger number, as every Peyer's patch of the last few feet of the small intestine was indicated by a grey-green gangrenous patch, clearly marked out on a red intestinal wall. These patches could be seen on the external surface of the intestine equally well as on the internal. Although both cases were well on in the third week of their illness, and indeed by the history one should have been in his fourth week, their temperature charts showed none of the hectic character indicating septic absorption, and their Peyer's patches were but very slightly ulcerated on their internal surface. The patient who died in his fourth week had lived long enough for one patch to slough, and he had in his intestine not the neat little puncture of an ordinary perforation but a hole. In his peritoneal cavity was a considerable quantity of fluid stained with fæcal matter. It will easily be seen how hopeless such cases are for operative interference, and I fear that the statistics of any surgeon operating on perforations of the type I have seen here will be bad.

It is generally believed that the same germ in different epidemics of the disease which it causes may at one time attack one system—e.g., the gastro-intestinal—but in another epidemic the prominent symptoms may be of another type, falling upon some other system—e.g., the neural. But it seemed to me, while holding posts as locum-tenent in various districts in England during an influenza epidemic affecting a large part of the country, that the local conditions, such as soil, climate, &c., of the district, were much more important factors in determining the kind of complication to which the patient was liable. This has been borne out in my experience of enteric fever here. Although the patients came from widely different areas, and the attacks were of very varying severity, when they came to be treated under the same conditions the complications to which they were liable were the same. It would be interesting from this point of view to compare the complications to which the patients in No. 6 General Hospital were liable with those of one of the other military general hospitals.

This hospital is situated over 4500 feet above the sea-level, and the patients are all in tents. Lung complications have been in my experience exceedingly rare. I had three patients who had slight hypostatic congestion with bronchitis. They were all in the same tent, which was built on a slope, and the bricks under the feet of the bed were insufficient to make their beds level. They were transferred and the tent was subsequently moved round. In my other tents lung complications were conspicuous by their almost entire absence. The ventilation is very free and the nights are sometimes exceedingly cold. I had two tents transferred to me containing 14 patients who had been under treatment by another civil surgeon. Among them were two patients who had bronchitis. One of these had a considerable amount of hypostatic congestion, but the beds of both these patients were sloping down towards the head.

All the patients took five minims of carbolic acid in water three times a day. If I exclude patients who had taken large doses of opium after hæmorrhage in only one case has distension with flatus been troublesome, and in that case there was, in addition to typhoid ulceration of the small intestine, irregular ulceration of the large intestine, suggestive of a mixed infection of typhoid fever and dysentery. It was in the large intestine that the distension was most extreme. There was also slight general peritonitis. There had been no clinical signs of dysentery beyond a small quantity of mucous in the stools, which was not more than could easily be accounted for by occasional turpentine enemata and the frequent use of a rectal tube. Excluding this case distension has never once been a prominent feature. For this freedom from distension I am disposed to give some credit to the carbolic acid, aided undoubtedly by the fact that the patients were mostly men of considerable muscular development.

Surgeon-General W. D. Wilson, P.M.O., told me that he thought that carbolic acid had a tendency to increase the frequency of hæmorrhages. This is to some extent borne out by my experience. I have had 12 cases of hæmorrhage out of 120 cases and some of these patients at the time of writing are not yet discharged. Osler states that hæmorrhage occurs in from 3 to 5 per cent. On the whole, however, my feeling is that I like carbolic acid. Although the type of disease was undoubtedly severe the mortality was only 10 per cent., whereas in the enormous number of statistics collected by Murchison the mortality was 19 per cent., and Osler puts down the mortality at from 10 to 30 per cent.

As regards stimulants brandy seems much the most useful. Although undoubtedly this stimulant raises the blood-pressure and so, perhaps, increases slightly the risk of hæmorrhage, yet it certainly does so less than strychnine, which is the only other stimulant which seems to me to have an appreciable effect on the failing heart of an enteric fever patient. With a plentiful supply of brandy patients certainly seem less restless and they sleep more. Strychnine, on the other hand, seems to me sometimes to increase restlessness. After a hæmorrhage, too, I would not long deprive my patient of brandy. Hæmorrhage usually occurs in a patient whose disease has been of such a type that he had required a considerable quantity of stimulant before its occurrence, and if the pulse is allowed to grow very feeble after the hæmorrhage it seems well-nigh impossible to get a patient again to rally. Transfusion with normal saline solution will, I think, save a considerable number of lives among such patients. It has a wonderful effect in causing the patient to rally, and at the same time by dilution it increases the coagulability of the blood. I have tried giving a considerable quantity of hot water by the mouth, but without good result. It does not seem to be absorbed, and this to a large extent seems to me true of any stimulant given by the mouth under these circumstances. I have not tried water enemata, as I think that they would be too likely to disturb the intestine and, indeed, the patient generally.

Turning now from palliative to preventive treatment the question may be asked, What, so far as one can judge in a limited number of cases, are the results of inoculation with anti-typhoid serum? I had under my own care nine inoculated patients. My impression (and I think an impression is often more correct than statistics) is that they were milder than the average cases. Other medical officers have almost invariably expressed to me the same opinion. Perhaps, however, the wish was father to the thought. The figures which I have been able to collect are curious. Owing to the kindness of Civil Surgeon F. Pearshouse and Civil Surgeon R. D. Maxwell I was able to get statistics of 327 cases among non-commissioned officers

and men; of these, 35 only—i.e., 10·7 per cent.—had been inoculated. None of them were inoculated twice, but all, so far as could be ascertained, had reacted fairly well to their one inoculation. This result seemed good, but of 200 patients in hospital suffering from other diseases I found that only 6·5 per cent. had been inoculated. This result would make it appear that the risk of infection from enteric fever is considerably increased by inoculation. This conclusion appears to me to be absurd. The explanation probably is that as all the patients suffering from diseases other than enteric fever were questioned at the same time they were drawn from one or two regiments, and regiments varied considerably in the percentage of men inoculated. I must have happened upon regiments of which the members were but little inoculated, and thus the percentage of men inoculated is too low. The fact that I contracted enteric fever myself shortly after making this inquiry prevented my repeating it.

Some medical men have stated that they do not think inoculation is of much value as a preventive but that it modifies the course of the disease when contracted. With this question in view I investigated three factors—(1) the mortality; (2) the average temperature both morning and evening for the first ten days after admission; and (3) the average number of days before the temperature finally became normal. I found that the death-rate among the inoculated patients was 2·3 per cent. lower than that of the not inoculated. The average temperature for the first 10 days was 0·9 per cent. lower, but it was 5·4 days longer before finally becoming normal.

The number of patients from whose charts these statistics were made were small. I took the average temperature and the date when finally they became normal in 50 consecutive not inoculated cases, but of my 39 inoculated patients I could only find the charts of 22.

Small as these figures are, however, they indicate that inoculation as at present practised cannot be regarded as a striking success. All the inoculations were recent, not one being more than six months old. No sane person will deny that an equal number of vaccination statistics would *decidediy* show its value.

It must be borne in mind, too, that a slight improvement in the figures of the inoculated patients will be of no value. The quieter and more intelligent men would be the first to take advantage of the measure of protection which it was hoped it would confer. They would be the men most conscious of their danger. They would be more careful than their comrades in other ways. As a matter of fact a large number of them were non-commissioned officers.

I purposely excluded all officers in my statistics. In the first place they are more careful and have better opportunities of avoiding sources of infection than their men. In the second place, I should estimate that about half of the officers who came out to this country had been inoculated, and thus would have hopelessly altered statistics according to whether they were added in greater or less proportion. Thus of 16 officers whose charts I examined seven were inoculated. If they had been added to my statistics among the men they would have materially altered the percentage of inoculated cases.

I am not at all sure that the immunity conferred by an actual attack of the disease is not exaggerated. Enteric fever at home is a rare disease so it is very rare for one individual to have it twice. But in taking past histories from soldiers so many of whom have lived in India it is not at all rare to hear that they have had a previous attack.

BRIDGEND COTTAGE HOSPITAL.—The committee of this hospital has decided to close the hospital for a time through lack of funds.

ROYAL CORNWALL INFIRMARY, TRURO.—The annual meeting of the friends and supporters of this institution was held on August 13th under the presidency of Colonel Tremayne. The report showed that during the past year 393 in-patients had been admitted; 790 out-patients had also been attended, against 650 in the previous year. The financial statement showed that the receipts amounted to £1902 and there was a favourable balance of £86 remaining. The Cornwall Convalescent Home for Men at Perranporth, in connexion with the infirmary, had received 114 patients, the average stay being 24 days and the cost per patient £2 5*s*. 8*d*. The high sheriff of Cornwall (Mr. R. Harvey) was elected president for the ensuing 12 months.

# A Mirror
OF
# HOSPITAL PRACTICE,
## BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.**

## ST. MARY'S CHILDREN'S HOSPITAL, PLAISTOW, E.

### TWO CASES OF TUBERCULOSIS OF THE PERITONEUM.

(Under the care of Mr. A. E. KENNEDY and the late Mr. E. A. T. STEELE.)

THE value of simple laparotomy in tuberculous peritonitis is now generally acknowledged and the explanation usually given is that opening of the abdominal cavity disturbs the previously existing conditions of exudation and absorption, so that the tubercle bacillus is no longer capable of living. Though this explanation is hardly satisfactory, yet the evidence we possess is sufficient to justify the performance of the operation. Drainage seems to be unnecessary and undoubtedly it adds largely to the risk of the laparotomy. Flushing with normal saline solution has appeared to be useful, but as this case shows it is not essential. The second case, so far as it goes, appears to suggest that merely making a small opening into the abdominal cavity, as in the performance of a radical cure of a hernia, is not sufficient to have any beneficial effect on the tuberculous peritonitis. For the notes of the cases we are indebted to Mr. T. B. Sellors, senior resident medical officer.

CASE 1.—A delicate-looking boy, aged four and a half years, with prominent forehead, anæmic complexion, and vacant expression, was admitted into St. Mary's Children's Hospital, Plaistow, on April 22nd, 1900, under the care of Mr. Kennedy, with rapid wasting and a general swelling of the abdomen. Though delicate from birth he had had no serious illness. His mental faculties had been always slightly impaired. A strong family history of tuberculosis on the maternal side was elicited. A little over a fortnight before admission the mother thought that the boy was losing flesh and during that time he became rapidly thinner, suffering also from severe diarrhœa, pains in the stomach, aching of the legs, and sweating. He became even more languid and silent. The mother stated that she noticed the swelling of the abdomen four hours only before admission and that it increased very rapidly, but the reliability of her statement is doubtful. On examination the abdomen was seen to be distended and swollen, the umbilicus being prominent. On careful palpation the muscular wall was tense, but neither rigid nor tender, and a few ill-defined lumpy swellings were made out in the umbilical region; the circumferential measurement at the level of the umbilicus was 21¾ inches; slight dulness in the flanks and an ascitic thrill were detected. The temperature was 101·8° F. and the weight 2 st. 3 lb. There were no signs of rickets, pulmonary or cardiac disease. On May 4th, as the symptoms had increased in severity and the temperature had risen to 101° each evening, laparotomy was performed. After the parietal peritoneum had been divided the intestines were found to be matted together by strong adhesions and a little fluid escaped. It had been intended to wash out the abdominal cavity with normal saline solution, but this would have proved a matter of difficulty owing to the number of adhesions present, and the condition of the child under the anæsthetic became so bad that the wound was closed as rapidly as possible without further interference. The temperature, with the exception of a short reactionary rise after the operation, remained normal until the 13th, when a sutural abscess was discovered; a month later the peritoneal suture came away, after which the wound healed rapidly without complications. By the end of May the circumference of the abdomen was reduced to 20 inches and most of the weight lost since admission had been regained. The patient was discharged on July 8th to a

convalescent home, the abdominal circumference being at that time 18¼ inches (a reduction of three and a half inches since operation), and the weight 2 st. 4 lb., the temperature having been normal for six weeks. He has stayed at the convalescent home for four weeks, has grown rapidly in health and weight, and a marked improvement has taken place in his mental condition. He walks without difficulty or pain and is not unduly fatigued on exertion. No medicinal treatment was employed.

CASE 2.—A healthy-looking male child, aged 14 months, was admitted into the hospital on May 14th, under the care of the late Mr. Steele, for radical treatment of double congenital hernia. A double truss had given good support to the right side but failed to properly retain the hernia on the left side. No other illness of importance had occurred since birth and no family history of tuberculosis was ascertainable. On the following day radical cure was performed on the left side. The usual incision having been made the dissection was carried down to the sac, which was only freed with great difficulty owing to close adhesions probably caused by the ill-fitting truss. The sac, which was large and contained a considerable amount of serous fluid, was opened at its lower extremity, and the child coughing at that moment a coil of intestine protruded. A granular appearance of the surface of the bowel being noticed, the loop was drawn out still farther and on closer investigation was seen to be studded with tubercles chiefly on its free border; tuberculous patches were also observed on the mesentery. The sac was slit up and was affected in a similar manner from the neck downwards for about three-quarters of an inch. It was removed after ligature of the neck, the size of the inguinal canal was reduced by sutures and the operation was concluded in the usual manner. The sac and a few of the tubercles which had been snipped away with fine scissors were given to Dr. Eyre, who kindly made an examination, identifying the bacillus tuberculosis by primary microscopical examination and reproducing the disease in a rabbit by inoculation. The circumference of the abdomen at the umbilicus on the day after the operation was 17 inches. Nine days later the stitches were removed, the union of the skin edges being perfect. On June 5th, three weeks after the operation, the abdominal measurement had increased to 18½ inches with some distension but no signs of fluid. On June 12th, nearly three weeks after removal of the stitches, the scar, which up to this day had appeared perfectly sound, broke down in the same manner that, after removal of tuberculous glands, an apparently healed wound in the neck breaks down some weeks later if at the time of the operation the tissues were infected by the escape of caseous matter. The wound healed in a week but the scar was now broader and of a less healthy appearance than formerly. The temperature for some time had risen each morning to 102° or 103° F. The patient remained in the same condition until the beginning of July when diarrhœa set in, the appetite failed, and weight was lost rapidly. On July 4th the scar again broke down. On the 7th two slight convulsions occurred, followed by the symptoms of tuberculous meningitis, from which the child died on the 9th.

*Necropsy.*—At the post-mortem examination a state of general tuberculosis was found. Both the visceral and parietal layers of the peritoneum were studded throughout with tubercles, which in many places were aggregated together so as to form masses as large as sixpences; there was a moderate excess of serous fluid. The lungs showed evidence of extensive tuberculous invasion. The pia-arachnoid covering the base of the brain and in the Sylvian fissures was opalescent and opaque, containing deposits of small greyish-white tuberculous nodules. There was no hydrocephalus and the dura mater was apparently unaffected.

*Remarks by* Mr. SELLORS.—Case 2 shows how a well-marked tuberculosis of the peritoneum may exist in an infant and its presence be unsuspected, for the patient from all accounts had enjoyed apparently perfect health up to the time of admission; and it also shows how rapid may be the development of a general tuberculosis starting from the peritoneum, for I am convinced that the disease must have commenced in that membrane, as no physical signs of pulmonary disease were observed till within a week and no nervous phenomena occurred till within two days of death. If the exposure of the abdominal cavity which occurs in the radical treatment of inguinal hernia may be considered as equivalent in value to a median laparotomy, the rapid course of the disease after the operation would be a strong argument against early surgical interference. The benefit resulting from the operative treatment of the disease in an advanced stage is well shown by Case 1.

## HOSPITAL FOR WOMEN AND CHILDREN, LEEDS.

### A CASE OF OSTEOMALACIA SHOWING THE EFFECT OF OÖPHORECTOMY IN CHECKING THE ELIMINATION OF PHOSPHATES BY THE URINE.

(Under the care of Dr. E. O. CROFT.)

OUR knowledge of the etiology of osteomalacia is so very slight that it is practically impossible to give any satisfactory explanation of the action of removal of the ovaries in improving the condition of these patients. Curato and Tarulli[1] suggest that the internal secretion of the ovaries has the power of oxidising compounds of phosphorus, such as those which exist in bones, so that after the removal of the ovaries there is an increased deposit of calcium and magnesium phosphate in the bones, which thus become stronger. Rossner[2] claims to have found hypertrophy of the vessel walls with extensive hyaline degeneration in the ovaries which had been removed in three cases of osteomalacia. Phosphorus and also bone-marrow[3] have been said to produce great improvement in several cases of the disease, and it is advisable that their action should be further studied.

The patient was a married woman, aged 35 years, who had had one pregnancy, the child having been born about two and a half years ago. She had always lived in Leeds and there was no history of rickets, syphilis, or other general disease. Menstruation commenced at the age of 17 years and was irregular, painful, and scanty, recurring three or four times a year until after the confinement. Since then the periods had been regular every four weeks, lasting about five days and being free from pain. The present illness dated from about the sixth month of her only pregnancy. She then experienced great difficulty in walking and severe pain in the back and thighs, especially on the right side. The difficulty and pain increased so that although she could stand alone she could not walk without assistance. The pregnancy advanced to full term. She was attended by Dr. Fergusson of Leeds who delivered her by means of forceps of a healthy living child. The labour, though tedious and troublesome, presented no very special difficulty, so that it is probable that no great amount of deformity could have existed at the time. The secretion of milk ceased spontaneously at the end of about a week after the labour. The child lived some few months and died from small-pox. After labour the pain in the back increased, although walking became somewhat easier and the pain in the thigh diminished. She became able to walk from 200 to 300 yards without help, but was much exhausted after doing so.

The patient came under the care of Dr. Croft in the Hospital for Women and Children, Leeds, in April, 1899. At that time she appeared to be fairly well nourished and healthy, but was very lame and had much pain. There was tenderness over the spinal column and on the ribs, sacrum, and pelvis, but not over the long bones of the limbs. The abdomen was prominent and pendulous, but otherwise revealed nothing abnormal. The symphysis pubis was very prominent, the pubic rami receding from it to such an extent that the beak-like projection of the pubes could be grasped between the fingers. By vaginal examination the pubic arch was much narrowed and the ischial tuberosities were brought much nearer together than usual. Owing to this last fact it was difficult to examine the upper parts of the pelvis and the exact position of the sacral promontory could not be defined. The external measurements were: widest part of the iliac crests, 11¼ inches; between the anterior superior spines, 9½ inches; and external conjugate diameter, 7⅞ inches. The patient was treated with rest, tonics, and various drugs to relieve pain and returned home in about a month somewhat relieved.

Dr. Croft saw the patient again in March, 1900. The symptoms had become much worse and the day on which he saw her was the last occasion on which she was able to walk

[1] Centralblatt für Gynäkologie, 1895, No. 21.
[2] Archiv für Gynäkologie, vol. xlviii., 1895, part 3.
[3] Edinburgh Medical Journal, May, 1896.

or stand alone. She was re-admitted to the hospital on April 23rd. Her condition then was such that not only was getting out of bed impossible, but movements of turning and reaching in bed caused severe pain in various parts of the back, pelvis, thighs, and lower ribs. Sleep was much disturbed by the pain and it was necessary to relieve it frequently by suppositories of morphia and hyoscyamus. The deformity of the pelvis had much increased. Externally the iliac crests were felt to present a much more acute curve so that the anterior superior spines approximated. The pubes was very prominent and its rami receded sharply. The external measurements were: between the iliac crests, 10¾ inches; between the anterior superior spines, 8¾ inches; external conjugate diameter, 8⅝ inches; and inter-trochanteric width, 10¼ inches. The width of the pelvis had markedly diminished, the distance between the spines specially so, and the inter-trochanteric width was much less than normal owing to the inward and upward displacement of the acetabula. The sacrum presented an excessive curve. On vaginal examination the finger could only be passed behind the ischial tuberosities. The pubic arch was so narrow that, together with the tuberosities, it formed a slit-like space scarcely more than a quarter of an inch apart. It was impossible to reach the sacral promontory or upper part of the pelvis. Messrs. Reynolds and Branson kindly undertook to attempt to obtain a skiagram of the pelvis for Dr. Croft. The result was extremely indistinct. Whether this was due to the usual difficulties of obtaining a good result in the case of the pelvis or whether the failure was actually associated with the diminution of earthy matter in the bones it would be interesting to know.

The condition and amount of the urine were carefully noted. On May 23rd, a month after admission, and the patient being presumed to be in an average condition with regard to diet and so on, the urine was reported upon by the Clinical Research Association with the following result as far as regards the amount of phosphates present: phosphoric acid ($P_2O_5$), 0·170 per cent., or 0·74375 grain per ounce; there was no albumose present; quantity of urine in 24 hours, 40 ounces; total phosphoric acid per diem, 29·74375 grains. The good effect said to be produced by oöphorectomy in osteomalacia is stated to be brought about by its causing in some manner a reduction in the elimination of phosphates by the kidneys. Curatulo and Tarulli (Rome, 1896) experimented on this subject by removing the ovaries of bitches while under average conditions of diet and excretion, the urine being carefully examined at intervals. After oöphorectomy the amount of phosphates (as $P_2O_5$) in the urine was greatly and permanently diminished.[4] The result of observation in the present case, although only imperfectly carried out, is in accordance, so far, with these experiments.

On May 28th Dr. Croft performed double oöphorectomy. The operation was simple. At the time the condition of the pelvis could be thoroughly examined. In addition to the restration of the pubes and the approximation of the ileo-pectineal eminences the depression of the sacral promontory and its inclination towards the left side were observed. Recovery was aseptic and normal, the wound being dressed and sutures removed on the tenth day, healing being perfect. During the four weeks after the operation the patient gradually improved. The pain became less so that no opiates were required and she became able to move about more easily and with much less pain. Standing was difficult and painful. On June 27th, one month after the operation, and the patient having resumed conditions of diet as before, an average sample of the urine was examined with the following result: phosphoric acid ($P_2O_5$), 0·08 per cent., or 0·35 grain per ounce; quantity of urine passed in the 24 hours, 55 ounces; total phosphoric acid per diem, 19 25 grains. Comparing this with the amount passed before the operation a diminution is shown in round numbers of from 30 to 20 grains of phosphoric acid per diem.

*Remarks by* Dr. CROFT.—Osteomalacia being a very rare disease in this country the above case is, I think, worthy of record, especially as a somewhat rough observation has been made on the effect of oöphorectomy in checking the progress of the disease by causing a diminution in the amount of phosphates eliminated by the kidneys. This observation is, of course, very imperfect and would be of greater value if more repeated analyses could have been made, but it is of interest as far as it goes, and I shall endeavour to trace the further progress of the case with a view to ascertain the ultimate effect of the treatment on the progress of the disease.

[4] See Kelly: Operative Gynæcology, vol. ii., p. 167.

# Reviews and Notices of Books.

*A Handbook of the Gnats or Mosquitoes, giving the Anatomy and Life History of the Culicidæ.* By Major G. M. GILES, I.M.S., M.B. Lond., &c. London: John Bale, Sons, and Danielson, Limited. 1900. Pp. 8 + 374. Price 15*s*.

To the general reader, who is accustomed to speak of *the* mosquito, this work will be a revelation. Any smallish fly that bites is commonly labeled "mosquito," but if we restrict ourselves to the gnat tribe only, to which a large quantity of these belong, we are confronted with a swollen list of no less than 242 different species. Even in this country a man may, by judicious selection of the places which he visits, get himself bitten by some 24 different kinds of gnats. Naturally the vast majority of these forms have been discovered and described during the present century; in the year 1817, the author informs us, there were only 15 species known. It is probable, however, that there were quite as many bites then as now.

The reason for the aggressive attitude of these culicidæ, as the family name of the mosquito tribe runs, is not without mystery. It would seem that normally they feed upon the juices of plants. Mr. W. H. Hudson in one of his instructive and delightfully written contributions to natural history has pointed out how small a percentage of mosquitoes can ever get the chance of a good bite at a human being. This particular variety of food can therefore be hardly necessary to them or nature would either have abolished the mosquito or made better commissariat arrangements in their behalf. In such countries as Lapland, to which the author refers and which his present reviewer has visited, there is no doubt whatever about the attitude of the local gnat or gnats. Their mind is thoroughly made up from the first in favour of an animal diet. Instead of hovering in a tentative fashion round the victim they fly straight and with unerring precision to the most vulnerable spots upon the body of the pedestrian whom they desire to bleed. A few hundreds of their sharp lances is an experience which it is not easy to forget. In this more favoured country the common gnat (culex pipiens) and allied species do not, as a rule, gratify their appetites by a fill of human blood. When they are stirred up to do so it would seem, according to the author, that the weather is responsible. "It is noticeable," he observes, "that whenever there occurs a spell of unusually hot weather we find in the press notices of the occurrence of mosquitoes, which, however, always turn out to be common indigenous species when submitted to a competent expert." In the glare of sunshine, we may imagine, they see men as trees walking and desert their vegetarian for a carnivorous diet. Next to the intermittence in the ferocity of British gnats the most remarkable fact about their biting propensities is that the females alone, save in one ascertained case, are the culprits. It is, perhaps, natural to expect this, since that sex, being the egg-producing sex, has need of more abundant nutrition than have the males. These tiny anthropophagi, moreover, are not content with merely taking their fill of our vital fluid: they leave behind them an unpleasant memento of their visit in the form of an irritant liquid which causes the tender tissues of many of us to swell up. This habit is not due to a sheer wish to produce as much torture as possible: it appears that the liquid which the insects secrete is useful as a means of keeping the substances upon which they feed in a proper condition for

absorption and passage through the narrow canals along which they have to pass.

One of the principal authorities upon the structure and life of these tiresome culicidæ, with the curiously compound name of Lynch Arribalzaga, has divided the bloodthirsty gnats into four groups according to the localities which they affect; there are domesticæ, campestræ, palustræ, and silvicolæ. Major Giles naturally adds to this "that there is nothing absolute in such an attempt at a classification of habitats." Anopheles, for example, which is the only genus that conveys the deadly malarial parasite, is as much at home in a marsh as in a house. It oscillates, indeed, between the two habitats, conveying in the course of these oscillations the germ of malaria from its home in marsh-frequenting beasts to the human body. The author gives incidentally a useful method of distinguishing at a glance this infection-carrying genus from the more harmless culex. The former sits upon a wall with its head pointing towards the wall and the rest of the body jutting out, while culex sits with the entire body parallel to the surface upon which it is resting. This suggestion, however, will probably not secure too much consideration for the reclining culex—it has too many, though lesser, sins to expiate.

Major Giles devotes a reasonable space to the detailing of the structure of gnats, as perfect insects, larvæ, and pupæ. The only portion of this otherwise admirable section to which we take exception is the series of illustrations: these figures are massed in the form of plates of excessively coarse execution. Indeed, the general get-up of the book is far from attractive; and we are of opinion that the publishers might have seconded the author more liberally. His part is well done; theirs is inferior in more than one respect. Such figures as No. 7 on Plate 1, which should illustrate a transverse section through the body of an adult gnat, is simply abominable in its vagueness and poverty of execution. Nor can any excuse be made on the score of cheapness: the book is priced at 15*s*., which would be prohibitive in a less necessary work.

The author, being a medical man as well as a zoologist, devotes some little space to the prophylactic treatment of the injuries caused by these devouring flies. Into the question of malaria itself, which is at the present time being so extensively investigated and with such important results, the author does not enter at all. His book is merely intended as a handbook to those who are working at this part of the subject, apart, of course, from its importance as a monograph of the culicidæ. But various considerations which result from the descriptions of the life history of the gnat tribe lead to conclusions as to the best way of ridding a neighbourhood of these deleterious insect pests. As everybody knows the gnat tribe lay their eggs in water in the shape of little "rafts" made up of a number of separate eggs fastened together. War may be waged against the mosquito by preventing this laying of eggs at all, and in at least two ways. The eggs are the product of hibernated examples which often hang about infrequently dusted curtains. To shake these and to slay the enclosed females is a preventative measure which should be easy enough in a well-served house. The author suggests as a practical hint that the curtains should be taken down with care and then tightly rolled up so as to crush the enclosed flies. As a temporary method of getting rid of a population of already hatched and vigorous mosquitoes the author recommends the opening of doors and windows at dusk when the flies generally seek their vegetable nourishment outside, re-entering at sunrise when the same aperture of ingress should be closed. It has been found that gnat larvæ do not flourish in streams and ponds where there are fish. They prefer puddles which are of a sufficiently durable nature to give time for the due transformation of the little "dolphins" into flies. In such puddles there are usually no fish; but if they are something between temporary puddles and permanent pools small fishlets can be introduced in order to decimate the larvæ. It is necessary to bear in mind, so that much time, expense, and energy need not be wasted, that the larvæ need green algæ or other plants for their food; a barren puddle is as destitute of mosquito larvæ as the most fish-teeming tank. The mosquito may be confronted with a further series of destructive measures. One of the best ways of grappling with this aquatic creature is to spread a thin layer of paraffin upon the water which it is known to inhabit. The presence of this oil does not seem to be directly poisonous, but to interfere in a thorough and drastic fashion with its breathing arrangements. The larvæ, as a rule, rest at the surface of the water with two little respiratory syphons protruding. To choke up these tubes is absolutely to stop respiration. In doing this, however, in India at least, the suspicious mind of the native must be set at rest. To spread kerosene or paraffin about freely would in the time of a scare cause the people, thinks the author, to "gravely suspect their governors of setting fire alike to the soil and water of their habitations." It is as well, therefore, to be circumspect in purchasing and in sprinkling the insecticide. Or rather the thing should be done openly and in the bazaars, so as to allay any rising mistrust. We have not space to enter more fully into this very important part of Major Giles's book. It must be sufficient to say that the practical hints for the permanent removal of mosquitoes from a neighbourhood are very full, as will perhaps be gathered by the few extracts that have been given. The latter, and the larger, part of the volume is taken up with a full description of the known species of mosquito which fall into, at any rate, eight genera. This, the concluding, section of the work is of course for reference; for which purpose it will be found to be very full. There should be no difficulty in recognising a species and the genus to which it belongs, since the elaborate descriptions are rendered more useful by a series of tabular statements of the main characters of the species. The only reason which leads us to hesitate in recommending this book as a text-book of the family of the culicidæ is, as has been already said, the utter disproportion between the price and the quality of the insufficiently numerous illustrations.

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*The Ophthalmic Patient: a Manual of Therapeutics and Nursing in Eye Disease.* By PERCY FRIDENBERG, M.D., Ophthalmic Surgeon to the Randall's Island and Infants' Hospitals; Assistant Surgeon to the New York Eye and Ear Infirmary. New York: The Macmillan Company. 1900. Pp. 312. Price 6*s*. 6*d*. net.

ALTHOUGH in every complete ophthalmic treatise dealing with the diseases of the eye in general some details in regard to treatment will be found these details for the most part only constitute a kind of appendix to the chapters on cataract, purulent ophthalmia, and glaucoma, and many points of nursing are omitted. In the very sensibly written work before us the whole subject is considered in a manner that leaves little to be desired and forms a mass of information that should be carefully studied by those who are responsible for the building of a new hospital or who have to superintend the treatment of ophthalmic in- and out-patients.

No attempt is here made to supply a description of the various forms of ophthalmic disease. The author takes it for granted that the diagnosis is made and proceeds to consider the construction, ventilation, and illumination of eye wards with the furniture required in them. He points out how important are accurate histories and records of the symptoms present on admission, and then describes under the head of Ophthalmic Therapeutics the principal remedies in common use, both local and general. The various methods

of disinfection and of sterilising instruments and dressings are dwelt upon. A chapter is devoted to the arrangements for ophthalmic operations and for the due nursing after each. The dressing and bandages required after operations are given and the last chapter is devoted to eye-shades, dark glasses, and artificial eyes. The immense advance that has been made in regard to antisepsis is very striking. The use of glass or metallic trays, the sterilisation of knives, forceps, and instruments generally, and the employment of pure wool as a light compress, are important factors in maintaining the high standard of success that is now always anticipated. The work is illustrated by many drawings.

## LIBRARY TABLE.

*Betegségek és Egészségügyi Tekintetben Hiányos Lakások.* Előadta a Londoni Harvey-Társulat Körében CORFIELD, W. H., az Oxfordi Egyetem Orvosdoktora. Forditotta Frank Ödön dr. Kir. Közegészségi Felügyelö, Egyetemi M. Tanár. Budapest. 1900.—Two lectures delivered by Professor Corfield on Disease and Defective House Sanitation before the Harveian Society of London, were published in book form in 1896 and were reviewed in THE LANCET of Sept. 12th in that year (p. 752). They have now been translated into Hungarian by Dr. Frank of Budapest for the Royal Society of Public Health of Hungary, forming a 24-page pamphlet of tasteful appearance with numerous illustrations. Dr. Frank says in his preface: "The following two lectures by Professor Corfield merit the attention of Hungarian readers because they explain the views of the English hygienist and because the sanitary arrangements of dwellings in our country are much more unsatisfactory than those in England. Professor Corfield may accept this translation as a token of esteem and gratitude for the hospitality and kind advice which he has given to those of the Hungarian hygienists who have called upon him in London."

*A Pocket Medical Dictionary.* By GEORGE M. GOULD, A.M., M.D. Fourth edition. Philadelphia: P. Blakiston's Son and Co. 1900. Pp. 838. Price $1.25.—This is a handy little volume which sets forth the definition and pronunciation of some 30,000 words. It also gives a variety of other useful information, including a brief account of micro-organisms, certain anatomical facts relating to the muscles and the nerves, and a table of weights and measures, doses, and tests. It also gives a table of clinical eponymic terms. This is a new feature, so far as we are aware, among medical dictionaries, and it is one of considerable usefulness, for it not infrequently happens in reading of a symptom or disease which is described by the name of its discoverer that there is no clue as to its nature. This table seems on the whole to be very complete, and contains such up-to-date information as "Babinski's sign." The appearance of a fourth edition within a limited period of time speaks for the success of the work and we can cordially recommend it to medical men, particularly to those who are studious enough to keep abreast of medical literature. We cannot, however, say that we altogether approve of the practice, now becoming so common in America, of adopting phonetic spelling, and we notice with regret such terms as "exophthalmic goiter" and "center."

## JOURNALS AND REVIEWS.

*Revue d'Hygiène et de Police Sanitaire.* Vol. xxii., No. 7. July, 1900. Paris: Masson and Co.—The hygiene of churches is not a subject which has as yet been at all exhaustively studied, and having regard to its obvious importance the article in the July number of this review from the pen of Dr. Paul Remlinger, chief of the Military Laboratory of Bacteriology, is of interest. Churches are there fully discussed from the point of view of their salubrity and of the opportunities which they afford of contracting disease. The author also points out how the conditions which at present obtain may be remedied. We commend the article to all those concerned with the construction and control of places of public worship. This number also contains a capital article on the Municipal Sanitary Service of Amsterdam by Dr. Ringeling. It deals with the mortality figures of Amsterdam beween 1880 and 1889, and it may be mentioned that the general death-rate of the city compares at the present time very favourably with those of other important towns in Europe. The whole sanitary administration of Amsterdam is touched upon, and for those who are not conversant with the Dutch language an excellent opportunity is afforded of becoming familiar with the modern hygiene of a Dutch city. The Pasteur Hospital is the subject of a paper by M. Martin which is well illustrated throughout.

The *Veterinarian* for August commences with a well-written and illustrated article by Dr. John Lindsay on a fœtal monstrosity (diprosopus diophthalmus) from a cow. The head was that of a full-time calf, the monstrosity being an instance of a rare and interesting form of anterior dichotomy. Dr. Lindsay dissected the specimen very carefully and has given clear details of all the abnormalities present. A report upon work done in New Zealand by the Government Veterinary Department under Mr. J. A. Gilruth, M.R.C.V.S., regarding the subject of swine fever is summarised by Mr. J. A. W. Dollar and extracts are given from American veterinary journals. In the "Month's Progress" and "Science Notes" short paragraphs are culled from English and foreign scientific journals and inserted as being likely to interest veterinary surgeons. The remainder of the journal is occupied by an account of the proceedings of council.

*Edinburgh Medical Journal.*—In the August number Dr. Dormer Harris gives some useful dietetic hints in a paper on the Feeding of Phthisical Patients. Dr. G. R. Murray's paper on the Treatment of Some Forms of Enlargement of the Thyroid Gland in Young Adults is noticed in another column. Dr. H. Macnaughton Jones, in a paper on the Influence of Conservatism on Surgical Gynæcology, recommends vaginal panhysterectomy as soon as malignant uterine disease has been diagnosed with certainty and deprecates hesitation in the removal of diseased adnexa and adnexal tumours. Dr. E. Arthur Gibson of Glasgow describes a case of uretero-cystostomy for uretero-vaginal fistula. He says that the operation has been performed many times in America and on the continent, but he has failed to find a report of any case done in this country. He operated on Dec. 30th, 1899, and the patient has not since that time had any urinary trouble whatever.

*Scottish Medical and Surgical Journal.*—In the August number there is a paper on General Blood-pressure in Sleeplessness and Sleep by Dr. L. C. Bruce, of the Perth District Asylum. He has found that in the majority of cases of sleeplessness in mental disease the blood-pressure is high—namely from 130 to 150 millimetres of mercury as tested with Barnard and Hill's sphygmometer and that for such patients the most certain hypnotic is paraldehyde in doses of at least two drachms. Dr. F. D. Boyd, of the Edinburgh Hospital at Norval's Pont, South Africa, discusses the question of enteric fever in the British forces. Altogether there are seven original articles.

*La Grèce Médicale.*—The principal article in the August number is the first part of a paper entitled "Continued Malarial Fevers (Des Fièvres Continues Palustres) and their Predominant Forms in Greece." It is by Dr. J. Cardamatis, vice-president of the Medical Society of Athens, who maintains that there is in Greece besides typhoid fever and

malarial fever a special class of fevers which are not attributable either to the plasmodium malariæ or to Eberth's bacillus, but belong to the auto-infections of the organism. He therefore divides the fevers of Greece into the three following principal classes arranged in order of frequency: (1) Fièvres paludéennes; (2) Fièvres par auto-infection; and (3) Fièvres typhoïdes. *La Grèce Médicale* and Ἰατρικὴ Πρόοδος—i.e., *Medical Progress*, a Greek journal of 36 pages—are published conjointly in Syra, the editor being Dr. Joannes Foustanos.

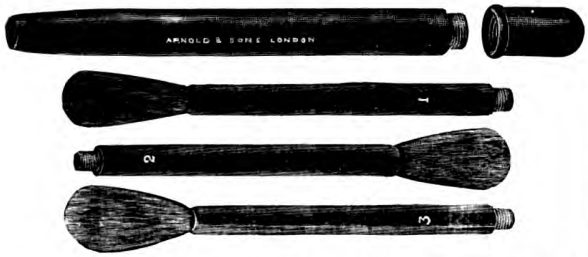
*Friend of China.*—In the July number the Rev. J. C. Kerr, M.D., of Canton, has a short paper on the effects of the opium habit, as observed by him in his experience of 40 years "in a large city and in a large hospital."

*Mercy and Truth.*—In the August number Dr. Mary Synge of Fuh-ning, South China, writes on Women Patients, Rich and Poor, and Mr. Walter Squibbs describes an attack on a medical mission at Kiang-peh in Western China in 1898.

# New Inventions.

## A POCKET CAMEL HAIR SURGICAL BRUSH.

MANY practitioners, in common with myself, must have often found the unsuitableness of the ordinary camel hair brush (for painting throats, &c.) for being carried in the pocket when on one's rounds. I have designed one on the principle of the pocket penholder, the use of which will be




at once apparent. There are two extra brush-ends adaptable to the vulcanite holder and each one is numerically marked, so that when used for infectious cases, &c., they can be easily differentiated and "put in quarantine" till thoroughly disinfected. Messrs. Arnold and Sons, surgical instrument makers, of West Smithfield, have carried out my directions *secundum artem* and a most useful and handy little instrument is the result.

W. L'HEUREUX BLENKARNE, M.R.C.S. ENG., L.S.A.,
Formerly Surgeon to the Leicester and Leicestershire
Worthing. Provident Dispensary, &c.

# THE METROPOLITAN HOSPITAL SUNDAY FUND.

THE council of the Metropolitan Hospital Sunday Fund met on July 30th at the Mansion House to receive the report of the committee of distribution and to order payment of awards. Sir SYDNEY H. WATERLOW, the Vice-President, occupied the chair.

The following are the awards recommended by the Committee of Distribution for the year 1900:—

### 30 GENERAL HOSPITALS.

Charing Cross Hospital, £1169 3*s.* 4*d.*; French Hospital, £325 16*s.* 8*d.*; German Hospital, £594 3*s.* 4*d.*; Great Northern Central Hospital, £622 18*s.* 4*d.*; Guy's Hospital, £1533 6*s.* 8*d.*; Hampstead Hospital, £210 16*s.* 8*d.*; Italian Hospital, £19 3*s.* 4*d.*; King's College Hospital, £1533 6*s.* 8*d.*; London Hospital, £4600; London Homœopathic Hospital, £622 18*s.* 4*d.*; Phillips Memorial Homœopathic Hospital, £33 10*s.* 10*d.*; London Temperance Hospital, £785 16*s.* 8*d.*; Metropolitan Hospital, £690; Mildmay Hospital, £258 15*s.*; Miller Hospital and Royal Kent Dispensary, £268 6*s.* 8*d.*; North-West London Hospital, £383 6*s.* 8*d.*; Poplar Hospital, £622 18*s.* 4*d.*; Royal Free Hospital, £1006 5*s.*; St. George's Hospital, £1935 16*s.* 8*d.*; SS. John and Elizabeth Hospital, £47 18*s.* 4*d.*; St. Mary's Hospital, £1974 3*s.* 4*d.*; St. Thomas's Hospital, £431 5*s.*; Seamen's Hospital Society, £1111 13*s.* 4*d.*; the Middlesex Hospital, £2012 10*s.*; Tottenham Hospital, £191 13*s.* 4*d.*; University College Hospital, £1245 16*s.* 8*d*; Walthamstow, £86 5*s.*; West Ham Hospital, £392 18*s.* 4*d*; West London Hospital, £622 18*s.* 4*d.*; and Westminster Hospital, £1341 13*s.* 4*d.*

### SPECIAL HOSPITALS: 5 CHEST HOSPITALS.

City of London Hospital for Diseases of the Chest, Victoria-park, £670 16*s.* 8*d.*; Hospital for Consumption, Brompton, £1820 16*s.* 8*d.*; North London Consumption Hospital, Hampstead, £364 3*s.* 4*d.*; Royal Hospital for Diseases of the Chest, City-road, £383 6*s.* 8*d.*; and Royal National Hospital for Consumption, Ventnor, £287 10*s.*

### 17 CHILDREN'S HOSPITALS.

Alexandra Hospital for Hip Disease, W.C., £143 15*s.*; Banstead Surgical Home, £38 6*s.* 8*d.*; Barnet Home Hospital, £38 6*s.* 8*d.*; Belgrave Hospital for Children, S.W., £124 11*s.* 8*d.*; Cheyne Hospital for Incurable Children, S.W., £95 16*s.* 8*d.*; East London Hospital for Children, Shadwell, E., £651 13*s.* 4*d.*; Evelina Hospital for Sick Children, Southwark, S.E., £383 6*s.* 8*d.*; Home for Incurable Children, Maida-vale, W., £76 13*s.* 4*d.*; Home for Sick Children, Sydenham, S.E., £124 11*s.* 8*d.*; Hospital for Sick Children, Great Ormond-street, W.C., £910 8*s.* 4*d.*; North-Eastern Hospital for Children, Hackney-road, N.E., £335 8*s.* 4*d*; Paddington-green Hospital for Children, W., £268 6*s.* 8*d.*; St. Mary's, Plaistow, E., £210 16*s.* 8*d.*; St. Monica's, Brondesbury, N.W., £100 12*s.* 6*d.*; Victoria Hospital for Children, King's-road, Chelsea, S.W., £575; Victoria Home, Margate, £23 19*s.* 2*d.*; and "The Vine," Sevenoaks, £38 6*s.* 8*d.*

### 6 LYING-IN HOSPITALS.

British Lying-in Hospital, Endell-street, W.C., £33 10*s.* 10*d.*; City of London Lying-in Hospital, City-road, E.C., £47 18*s.* 4*d.*; Clapham Maternity Hospital, £28 15*s.*; East End Mothers' Home, £81 9*s.* 2*d.*; General Lying-in Hospital, Lambeth, S.E., £38 6*s.* 8*d.*; Queen Charlotte's Lying-in Hospital, Marylebone-road, W., £335 8*s.* 4*d.*

### 6 HOSPITALS FOR WOMEN.

Chelsea Hospital for Women, S.W., £364 3*s.* 4*d.*; Hospital for Women, Soho-square, W., £239 11*s.* 8*d.*; Grosvenor Hospital for Women and Children, Vincent-square, S.W., £105 8*s.* 4*d.*; New Hospital for Women, Euston-road, W.C., £263 10*s.* 10*d.*; Royal Hospital for Children and Women, Lambeth, S.E., £215 12*s.* 6*d.*; Samaritan Free Hospital, Lower Seymour-street, W., £383 6*s.* 8*d.*

### 27 OTHER SPECIAL HOSPITALS.

Cancer Hospital, Brompton, S.W., £575; London Fever Hospital, Islington, N., £670 16*s.* 8*d.*; Gordon Hospital for Fistula, Vauxhall Bridge-road, S.W., £28 15*s.*; St. Mark's Hospital for Fistula, City-road, E.C., *nil*; National Hospital for the Diseases of the Heart, Soho-square, W., £76 13*s.* 4*d.*; Female Lock Hospital, Harrow-road, W., £239 11*s.* 8*d.*; Hospital for Epilepsy, Paralysis, and Other Diseases of the Nervous System, Regent's Park, N.W., £52 14*s.* 2*d.*; National Hospital for the Paralysed and Epileptic, W.C., deferred; West End Hospital for Diseases of the Nervous System, £115; Central London Ophthalmic Hospital, Gray's Inn-road, W.C., £57 10*s.*; Royal Eye Hospital, St. George's-circus, S.E., £172 10*s.*; Royal London Ophthalmic Hospital, City-road, E.C., £575; Royal Westminster Ophthalmic Hospital, Charing Cross, W.C., £115; Western Ophthalmic Hospital, Marylebone-road, W., £38 6*s.* 8*d.*; City Orthopædic Hospital, Hatton-garden, E.C., £115; National Orthopædic Hospital, Great Portland-street, W., £105 8*s.* 4*d.*; Royal Orthopædic Hospital, Oxford-street, W., £95 16*s.* 8*d.*; Royal Sea-Bathing Hospital, Margate, £287 10*s.*; St. John's Hospital for Diseases of the Skin, £76 13*s.* 4*d.*; Hospital for Diseases of the Skin, Stamford-street, S.E., *nil*; St. Peter's Hospital for Stone, Covent-garden, £76 13*s.* 4*d.*; Central London Throat and Ear Hospital, Gray's Inn-road, W.C., £33 10*s.* 10*d.*; London Throat Hospital, Great Portland-street, W., £33 10*s.* 10*d.*; Metropolitan Ear, Nose, and Throat Hospital, Grafton-street, W., £9 11*s.* 8*d.*; Royal Ear Hospital, Frith-street, W., £9 11*s.* 8*d.*; Dental Hospital of London, Leicester-square, W.C., £115; National Dental Hospital, 149, Great Portland-street, W., £47 18*s.* 4*d.*

### 29 CONVALESCENT HOSPITALS.

Metropolitan Convalescent Institution, Sackville-street, W., £603 15*s.*; Bexhill Convalescent Home, Sackville-street, W., £335 8*s.* 4*d.*; All Saints' Convalescent Hospital, Eastbourne, £383 6*s.* 8*d.*; Ascot Priory Convalescent Home, £67 1*s.* 8*d.*; Charing Cross Hospital Convalescent Home, Limpsfield, £67 1*s.* 8*d.*; Chelsea Hospital for Women Convalescent Home, St. Leonards, £43 2*s.* 6*d.*; Hahnemann Convalescent Home, Bournemouth, £23 19*s.* 2*d.*; Hanwell Convalescent Home, £26 16*s.* 8*d.*; Herbert Convalescent Home, Bournemouth, £23 19*s.* 2*d.*; Herne Bay Baldwin-Brown Convalescent Home, £33 10*s.* 10*d.*; Herne Bay Mothers' Home, £40 5*s.*; Homœopathic Convalescent Home, Eastbourne, £19 3*s.* 4*d.*; King's College Hospital Convalescent Home, Hemel Hempstead, £57 10*s.*; Mrs. Kitto's Convalescent Home, Reigate, £67 1*s.* 8*d.*; London and Brighton Female Convalescent Home, £9 11*s.* 8*d.*; Mary Wardell Convalescent Home for Scarlet Fever, £105 8*s.* 4*d.*; Morley House Convalescent Home for Working Men, £177 5*s.* 10*d.*; Police Seaside Home, Brighton, £47 18*s.* 4*d.*; St. Andrew's Convalescent Hospital, Clewer, £143 15*s.*; St. Andrew's Convalescent Home, Folkestone, £220 8*s.* 4*d.*; St. John's Home for Convalescent and Crippled Children, Brighton, £95 16*s.* 8*d.*; St. Joseph's Convalescent Home, Bournemouth, £47 18*s.* 4*d*; St. Leonards-on-Sea Convalescent Home for Poor Children, £95 16*s.* 8*d.*; St. Mary's Convalescent Home, Shortlands, £17 5*s.*; St. Michael's Convalescent Home, Westgate-on-Sea, £33 10*s.* 10*d.*; Seaside Convalescent Hospital, Seaford, £95 16*s.* 8*d.*; Warley Convalescent Cottage Hospital, Essex, £10 10*s.* 10*d.*; Friendly Societies' Convalescent Home, Dover, £19 3*s.* 4*d.*; Deptford Medical Mission Convalescent Home, Bexhill, £19 3*s.* 4*d.*

### 15 COTTAGE HOSPITALS.

Beckenham Cottage Hospital, £47 18*s.* 4*d.*; Blackheath and Charlton Cottage Hospital, £17 17*s.* 6*d.*; Bromley, Kent, Cottage Hospital, £83 3*s.* 4*d.*; Chislehurst, Sidcup and Cray Valley Cottage Hospital, £38 6*s.* 8*d.*; Eltham Cottage Hospital, £30 13*s.* 4*d.*; Enfield Cottage Hospital, £52 14*s.* 2*d.*; Epsom and Ewell Cottage Hospital, £57 10*s.*; Hounslow Cottage Hospital, £22 0*s.* 10*d.*; Livingstone Cottage Hospital, £57 10*s.*; Mildmay Cottage Hospital, £57 10*s.*; Reigate and Redhill

Cottage Hospital, £71 17*s.* 6*d.*; Sidcup Cottage Hospital, £38 6*s.* 8*d.*; Tilbury (Passmore Edwards) Cottage Hospital, £38 6*s.* 8*d.*; Willesden (Passmore Edwards) Cottage Hospital, £33 10*s.* 10*d.*; and Wimbledon Cottage Hospital, £33 10*s.* 10*d.*

8 INSTITUTIONS.

Establishment for Gentlewomen, Harley-street, £105 8*s.* 4*d.*; S. Saviour's Hospital and Nursing Home, £115; National Sanatorium for Consumption, Bournemouth, £86 5*s.*; Invalid Asylum, Stoke Newington, £57 10*s.*; Firs Home, Bournemouth, £19 3*s.* 4*d.*; St. Catherine's Home, Ventnor, £28 15*s.*; Friedenheim Home for the Dying, £239 11*s.* 8*d.*; and Oxygen Home, £38 6*s.* 8*d.*

56 DISPENSARIES.

Battersea Provident Dispensary, £81 9*s.* 2*d.*; Bloomsbury Provident Dispensary, £11 10*s.*; Brixton, &c., Dispensary, £46; Brompton Provident Dispensary, £21 1*s.* 8*d.*; Camberwell Provident Dispensary, £76 13*s.* 4*d.*; Camden Provident Dispensary, £12 9*s.* 2*d.*; Chelsea, Brompton, and Belgrave Dispensary, £38 6*s.* 8*d.*; Chelsea Provident Dispensary, £11 10*s.*; Child's Hill Provident Dispensary, £10 10*s.* 10*d.*; City Dispensary, £115; City of London and East London Dispensary, £23 19*s.* 2*d.*; Clapham General and Provident Dispensary, £24 18*s.* 4*d.*; Deptford Medical Mission, £14 7*s.* 6*d.*; Eastern Dispensary, £30 13*s.* 4*d.*; East Dulwich Provident Dispensary, £28 15*s.*; Farringdon General Dispensary, £42 3*s.* 4*d.*; Finsbury Dispensary, £50 15*s.* 10*d.*; Forest Hill Dispensary, £36 8*s.* 4*d.*; Greenwich Provident Dispensary, £22 0*s.* 10*d.*; Hackney Provident Dispensary, £10 10*s.* 10*d.*; Hampstead Provident Dispensary, £38 6*s.* 8*d.*; Holloway and North Islington Dispensary, £47 18*s.* 4*d.*; Islington Dispensary, £43 2*s.* 6*d.*; Kensal Town Provident Dispensary, £9 11*s.* 8*d.*; Kensington Dispensary, £57 10*s.*; Kilburn, Maida Vale, and St. John's Wood Dispensary, £36 8*s.* 4*d.*; Kilburn Provident Medical Institution, £28 15*s.*; London Dispensary, £19 3*s.* 4*d.*; London Medical Mission, Endell-street, £91 0*s.* 10*d.*; Margaret Street Infirmary for Consumption, *nil*; Metropolitan Dispensary, £44 1*s.* 8*d.*; Notting Hill Dispensary and Maternity (Provident), £8 12*s.* 6*d.*; Paddington Provident Dispensary, £34 10*s.*; Pimlico Provident Dispensary (Lupus-street), *nil*; Portland Town Dispensary, £16 5*s.* 10*d.*; Public Dispensary, £38 6*s.* 8*d.*; Queen Adelaide's Dispensary, £17 5*s.*; Royal General Dispensary, £23 19*s.* 2*d.*; Royal Pimlico Provident Dispensary, £60 7*s.* 6*d.*; Royal South London Dispensary, £38 6*s.* 8*d.*; St. George's and St. James's Dispensary, £46; St. George's, Hanover-square, Provident Dispensary, £28 15*s.*; St. John's Wood and Portland Town Provident Dispensary, £28 15*s.*; St. Marylebone General Dispensary, £33 10*s.* 10*d.*; St. Pancras and Northern Dispensary, £29 14*s.* 2*d.*; South Lambeth, Stockwell, and North Brixton Dispensary, £43 2*s.* 6*d.*; Stamford Hill, Stoke Newington, &c., Dispensary, £50 15*s.* 10*d.*; Tower Hamlets Dispensary, £36 8*s.* 4*d.*; Walworth Provident Dispensary, £10 10*s.* 10*d.*; Wandsworth-common Provident Dispensary, £7 13*s.* 4*d.*; Westbourne Provident Dispensary and Maternity, £12 9*s.* 2*d.*; Western Dispensary, £55 11*s.* 8*d.*; Western General Dispensary, £119 15*s.* 10*d.*; Westminster General Dispensary, £33 10*s.* 10*d.*; Whitechapel Provident Dispensary, £19 3*s.* 4*d.*; and Woolwich Provident Dispensary, £10 10*s.* 10*d.*

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*Cholera and Plague in India.—The Famine.—The Pasteur Institute for India.—The Medical Officer of Health of Calcutta and the Corporation.—The Bombay Plague Commission.—The Fecundity of the Natives of India.*

AN epidemic of cholera in several parts of India seems to have taken the place of plague. In Bombay it is increasing, and the deaths amount to about 400 per week. Several Europeans have succumbed and the disease has broken out among the bluejackets of H.M.S. *Magdala*. At Poona, also, the Shropshire Regiment has suffered, and an outbreak has occurred at the Deccan College. In Calcutta the number of cases is only slightly above the average—from 16 to 20 a week being the usual number.

An increase in plague is reported this week, the number of deaths for the whole of India having risen from 198 to 251. Of these Calcutta reports 86; Bombay city, 73; Bombay districts, 21; Bengal districts, 14; and Mysore, 57. There are indications that plague is reviving. It is increasing in Mysore, and the number of deaths from plague in both Bombay city and Calcutta represents a high minimum. This time of the year has generally shown the lowest returns, although the terrible outbreak at Poona last year considerably altered the usual figures. One explanation offered for this seasonal vicissitude is that during the cold weather the poor live more indoors and sleep crowded together in stuffy rooms. The Poona outbreak may be cited against this theory as may the outbreaks at Karachi and Calcutta in the increasing heat of the spring months. The continued high mortality in Calcutta is not explained by the existence of any epidemic disease. It is higher than last year. The number of deaths recorded as due to plague or suspected plague do not quite account for the excess. I am inclined to believe that there must be more plague extant than is recorded. With the defervescence of an outbreak many cases show less typical features, and it is very probable that the inquiries made after death fail to discover many of the cases. Whether this be the true explanation or not the continued high general mortality is very ominous.

The number of people in receipt of famine relief is still over 6,250,000. Of these 3,500,000 are on relief works, and the remainder are receiving gratuitous relief. The greatest distress is in the Central Provinces. A most generous gift has been made by the Maharaja of Jaipur of 15 lakhs of rupees (equal to £100,000) towards an "Indian People's Famine Trust." The income arising from this is to be applied for the purposes of charitable relief in seasons of general distress in any of the territories subject to the Lieutenant-Governor of Bengal. The prospects of the monsoon during the past week have brightened considerably. Heavy rain has fallen in many of the distressed districts and favourable news for the continuance of the rains is brought by the ships arriving at Bombay. The rainfall in Bombay city exceeded eight inches in 24 hours on July 31st.

I am pleased to be able to notify that on and after August 9th the Pasteur Institute of India will be open and all officers and soldiers bitten by rabid dogs are accordingly to be sent for treatment to Kasauli. The regulation authorising the despatch of officers and men to Paris becomes inoperative after the above date.

The medical officer of health of Calcutta (Mr. J. Nield Cook) has been prohibited from giving a course of lectures on hygiene at the Medical College. The corporation consider that he must devote the whole of his time to the duties of health officer. I understand that Mr. Cook has previously for the convenience of Government given the course of lectures, but it now appears that he has no right or privilege to do so. Notwithstanding that the suggestion for a further course emanated from the Government the Municipal Commissioners refused their sanction and then the Government replied that any claim put forward by the health officer to undertake outside work was quite untenable. As the Government of Bengal in withdrawing the proposal make the following observation—viz., that "the sole question was whether in a temporary emergency to meet the convenience of Government the Commissioners would place his services at the disposal of Government for the purpose of delivering the lectures on hygiene," I think that Mr. Nield Cook has hardly been fairly treated.

It is reported that the Commission which the Bombay Government recently appointed for the purpose of inquiring into the complaints as to the bad after-effects of inoculation against plague in Dharwar, Gadag, and Hubli have completed their work. Their report has not yet been published. Inoculation is still proceeding briskly in the Jullunder and Hoshiapur districts of the Punjaub, where it appears to have found much favour with the people. Elsewhere throughout India it is practically at a standstill.

The fecundity of the natives of some parts of India must be very high. In Bengal the birth-rate recorded for 1899 was 42·96 per mille and this notwithstanding the admittedly faulty nature of registration. In Madras some of the registrars appear to think that the deaths of infants under one year of age are too insignificant for registration. It is interesting to observe that the months of the greatest number of births are those from October to March. The figures for Bengal being on a large scale show unmistakeably, therefore, that the first six months of the year are accompanied by an increased virility. The high birth-rate which rules in most parts is counterbalanced by an almost correspondingly high death-rate. In Calcutta and Bombay the birth-rate is very low, partly because of the comparative paucity of women but also because pregnant women go to their native country before the time of childbirth.

August 2nd.

EPSOM COLLEGE.—Students educated at Epsom College had a gratifying amount of success at the recent Preliminary Scientific Examination of the University of London, for out of 14 candidates only two failed. Of the 12 who passed four were in Division 1, three were in Division 2, one passed in chemistry and physics, and four passed in biology. Moreover, both of the two Epsom candidates passed the Intermediate Science Examination—one in each class, two passed the First Conjoint Examination, and 16 out of 20 passed the Matriculation Examination.

# THE LANCET.

*LONDON: SATURDAY, AUGUST 25, 1900.*


THE County of London is a big place to keep under such control that every part of its machinery may work in accordance with the requirements of public health and comfort. From the point of view of the number of persons within its area, and of the number of great industries pursued in that very congested area, the county of London surely holds the premier position amongst the cities of the world. All the more satisfactory is it to find that its administration is efficient, judging from the annual reports of the chief officer of the Public Control Department of the London County Council. From these reports a very fair idea may be gained as to how the various organisations of modern life and toil in the metropolis are regulated, and, though we may think it our duty to point out one or two places where stricter control is required, we are glad to think that year by year the story is one of progress. Such, at any rate, is the conclusion to which the annual report just issued would guide us.

Not the least important of the public powers and duties vested in the London County Council is the management of affairs in connexion with coroners and their courts. The appointment of coroners and payment of their salaries, the settlement of their districts, the regulation and payment of the cost incurred, and the provision and maintenance of the courts for the purpose are under the control of the London County Council. It would appear that during the year 1899 8271 inquests were held in London, which represents a rate of 1·8 per 1000 of the estimated population of 4,500,000. These results show an increase of 10·6 per cent. upon the number of inquests in the previous year (1898). The ratio of males to females upon the bodies of whom inquests were held was about 1·5 to 1, or half as many males as females. Commendable progress is apparently being made by the London County Council with the further provision and maintenance of proper accommodation for the holding of inquests. Mortuaries and post-mortem rooms are erected by consent of the sanitary authorities. The Council, however, as in other departments can bring the various vestries to a sense of their duty in this matter if such consent is in any way irrationally withheld. During the past official year several mortuaries have been erected and coroners' courts provided, while accommodation for the holding of inquests has been improved in certain places. Still more satisfactory is it to note that during the last year the Council has succeeded in putting a stop to the objectionable practice of holding nquests in public-houses. The practice became common undoubtedly on account of the utter want of special accommodation for this purpose. London is still in need of more accommodation for the holding of inquests, but Londoners may congratulate themselves that the day of public-house inquests is over and that little Swills no longer gives his lurid performances in the Sol's Arms.

A curious point is considered in the report as to the growing practice of weighing paper with goods purchased. The purchaser of, for example, one pound of tea often obtains, according to the chief officer of the Public Control Department of the London County Council, less than, say, 15½ ounces of tea and more than half an ounce of paper. This deficiency becomes a large item when the great number of sales of small parcels of tea and other commodities in this manner is considered. It amounts, in fact, to nearly 4 per cent. and represents a loss probably exceeding half a million sterling to the public in the course of a year. According to the Merchandise Marks Act it is contrary to the Act to sell as one pound of tea a package marked as containing one pound but which contains less than one pound, although with its wrapper it weighs one pound or more. On the other hand, it is not contrary to the same Act to sell as one pound of tea less than one pound when it is printed on the package that the tea and wrapper together weigh one pound. The Weights and Measures Acts decide that it is not fraud to sell as one pound of sugar a package containing less than one pound of sugar but which with the wrapper weighed one pound. From recent decisions, odd as it may seem, fraud cannot be charged under the 26th section of this Act where paper is weighed with goods sold, but apparently the placing of the paper on the scales for the reception of the goods is an offence within the contemplation of the 25th section. While upon this subject it is satisfactory to be assured that continuous improvement has taken place from year to year in the accuracy of the weighing and measuring instruments in everyday use, and that the improvement was maintained last year. It is interesting, also, to notice that the number of measures of capacity submitted to the Council's offices for control has been in a greater proportion to the number of weighing instruments submitted, a fact which is stated to be due to the substitution by publicans of glass for pewter measures.

Under the Bread Act several persons were convicted for failing to sell bread by weight. Under the Shop Hours Acts no less than 113,271 inspections were made during the year ending March 31st, 1900, when 14,424 offences were discovered, but only in 132 of these were proceedings taken. In regard to recent legislation upon this subject the Council has agreed to the principle of placing a daily limit on the hours of employment in shops, and it has also approved of the reduction of hours of work for young persons from 74 to 68 per week. That excellent measure the Seats for Shop Assistants Act came into force on Jan. 1st, 1900. It would appear that in 505 cases in which sufficient seats had not been provided the inspectors were mostly successful in making satisfactory arrangements.

Thanks to the work of an energetic association, the Coal Smoke Abatement Society, and, we may add, to the repeated representations of THE LANCET on the subject, the smoke nuisance has been actively dealt with during the year; but it is a pity that the Council has only very limited powers for dealing with this very real and present nuisance, for the sanitary authorities may

apparently fail to enforce the law and may disregard with utter impunity the representations of the Council. The Council should certainly have concurrent jurisdiction in this matter with the sanitary authorities. The present state of administering the law with the view of suppressing this nuisance is not satisfactory. We are glad to see that proceedings have been contemplated or begun against all classes of offenders, steam-shipping companies, railway companies (on account of the smoke discharged from the locomotives), electric light companies, and others, to mention a few, and we hope that a public feeling will soon be created in London in favour of pure air, against which feeling the managers of factories, &c., will not wish to run counter.

It is not surprising that the chief officer of the Public Control Department of the London County Council, Mr. SPENCER, should have devoted a large portion of his report to petroleum lamp accidents, since in previous years he has conducted some practical inquiries upon the question. He notes that the number of lamp accidents during the past official year shows a considerable diminution as compared with the preceding five years. Mr. SPENCER finds it difficult to assign a definite reason for this decrease, but he would infer that it is due to the fact of a much larger quantity of Russian oil having been imported into London during the past year than in previous years, a large percentage of which is of a high flash-point. We do not believe that this is the explanation, since we have found it very difficult to obtain any other oil than the so-called low flash-point oil at the oilshops. We are rather inclined to the view that the danger of employing a cheap and defective lamp is gradually becoming realised by the poorer classes amongst whom these accidents invariably occur.

The report relates to a very important section of the municipal affairs of the greatest city in the world, and therefore involves matters of interest and concern to an enormous number of people. It deals with facts and affords infinitely more instruction than abstract discussion could ever do in a number of related questions.

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SCURVY has been known from the earliest times and has prevailed particularly in armies in the field and among sailors on long voyages. From the early part of this century, however, mainly owing to the efforts of Dr. LIND, and to accumulating knowledge of the conditions upon which the disease depends, scurvy is now not nearly so frequently met with as it was formerly. This is well exemplified by the opening words of a paper on "The Etiology of Scurvy" which we published on August 4th (p. 321). The author is Staff-Surgeon W. E. HOME, R.N., and he says: "I should like to offer some remarks ..... and to submit a suggestion as to the etiology of this important disease which has become so rare that I cannot be quite certain that I have ever seen a case." Such a remark from a naval surgeon is the strongest evidence of the enormous decrease in the prevalence of the disease, but the fact that in spite of the large fields that have been offered for the study of scurvy much doubt still exists in regard to its etiology and pathology makes it delicate for the medical profession to claim much scientific credit for the improved condition of things. Some recent work, however, has been of great value.

We have recently published three papers dealing with the subject, one of which we have already referred to; another by Mr. FREDERICK G. JACKSON and Dr. VAUGHAN HARLEY[1]; and the third from the pen of Professor A. E. WRIGHT of Netley appears in our present issue. Mr. JACKSON and Dr. VAUGHAN HARLEY reviewed the work done by previous observers, and came to a conclusion which is decidedly contrary to views which had hitherto been held by other authorities, namely, that neither lime-juice nor fresh vegetables prevent scurvy or cure it, that it is not the absence of these which is the cause of the disease, but that scurvy is a disease produced through the eating of tainted food. This view, that scurvy is essentially due to poisoning by the ptomaines of tainted animal food, was first propounded by Professor TORUP of Christiania. Mr. JACKSON and Dr. VAUGHAN HARLEY maintain that before giving to lime-juice the credit of having practically swept away scurvy from the naval and marine services it is necessary to remember that other causes have at the same time been at work to promote health, such as improved sanitation, better quarters for the men, shorter voyages owing to the enormous increase in the use of steam, and above all better food. They further consider that evidence has shown in certain instances in which men have unwillingly experimented on the effects of ptomaine poisoning that scurvy is produced by the eating of tainted meat and not by the want of fresh vegetables. In order to confirm or negative this view it was decided to carry out some experiments. Monkeys were therefore fed on a certain brand of tinned Australian beef. The experiments were divided into three groups. In the first the monkeys were given daily, together with boiled rice, 50 grammes of meat from a freshly-opened tin together with maize; in the second group the same food matters were given but the meat was obtained from tins which had been opened for a few days and had stood in the laboratory; in the third group the monkeys were given exactly the same diet as in Group 2, except that each received daily either an apple or a banana. In the first group no signs of scurvy appeared, but in the second and third symptoms showed themselves which Mr. JACKSON and Dr. VAUGHAN HARLEY considered were characteristic of scurvy. They concluded that their investigations afforded important confirmation of results derived from Arctic experience—viz., that the presence of fresh vegetables or lime-juice is not alone sufficient for the prevention or the cure of scurvy and that we must regard the condition of the food in general, and especially the state of preservation of the meat, as the essential factor in the etiology of the disease. Staff-Surgeon HOME, who is now with the China fleet in charge of the hospital ship *Jelunga*, disputes these conclusions, maintaining that lime-juice and fresh vegetables prevent scurvy by acting as antiseptics. He points out that Mr. JACKSON and Dr. VAUGHAN HARLEY in their experiments did not take care to administer

[1] THE LANCET, April 28th, 1900, p. 1184.

ptomaines only. As the "sour-smelling meat" on which they fed the second lot of monkeys had not been sterilised, the monkeys received not only ptomaines but also the living bacteria which produced the ptomaines. Basing his arguments on grounds similar to those adopted by Dr. WILLIAM HUNTER in his papers on the Etiology of Pernicious Anæmia,[2] Staff-Surgeon HOME asks, "What is there in these experiments to prevent us from believing that the bacteria of putrefaction were taken alive into the mouths of the monkeys, there infecting the sordes round the teeth and setting up gingivitis, going on to ulceration, infecting also the gastro-intestinal canal later, these parasitic infections setting up the anæmia on which all the other symptoms of scurvy depend?" Staff-Surgeon HOME by his own confession is a theorist as to scurvy, but he makes out in his paper a strong case for the value of lime-juice as a preventive.

Professor WRIGHT places on record the results of a series of examinations of the blood of patients suffering from scurvy, his paper being a continuation of his previous investigations into the matter. The line of thought which runs through the paper is that the scorbutic condition is a pathological one which is induced by a dietary consisting of meat and cereals to the exclusion of green vegetables, tubers, and fruits. Inasmuch as the food-stuffs which are excluded from the dietary in question are those containing an excess of bases over mineral acids, while the food-stuffs (meat and cereals) remaining are those containing an excess of mineral acids over bases, it is obvious that the scorbutic condition is one which supervenes upon the ingestion of a considerable excess of mineral acids over bases. It would, in view of this consideration, seem probable that scurvy is a condition of acid intoxication very similar to the acid intoxication which can be experimentally produced in herbivora by the ingestion of a surplus of mineral acids. Professor WRIGHT further urges that justification of this theory is afforded by the consideration that the scorbutic condition is remedied or alleviated by the addition to the scorbutic dietary of any one of a whole series of different substances—tubers, green vegetables, decoctions of leaves and growing shoots, &c.—substances which contain an excess of bases over mineral acids. The results of the treatment of the cases recorded in Professor WRIGHT'S paper entirely bear out this theory. In all the cases the alkalinity of the blood was shown to be strikingly reduced and a marked amelioration of the condition followed upon the exhibition of lactate of soda and other similar substances. The treatment adopted by Professor WRIGHT in the cases which he records yielded most satisfactory results, and his method will no doubt be extensively followed.

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WE published in our columns last week a full report of the proceedings at the extraordinary meeting of the governors and subscribers of the National Hospital for the Paralysed and Epileptic held on Saturday, August 11th; and in a leading article we pointed out that the attitude taken up by the board of management towards the two questions before it—viz., whether the hospital was properly managed, and whether the medical staff should be represented on the board—was contradictory. The board of management, being accused of maladministration, replied that inasmuch as it has itself examined the condition of its house and finds it in good order no other investigation is necessary, thereby constituting itself its own judge. The same board being asked to admit to its counsels representatives from the medical staff replied that this would be impossible, because if the medical staff were accused of defaulting in their duty in any way they would thus be placed in the impossible position of trying themselves. A board capable of committing itself after due deliberation to such illogical opinions, whatever its faculty for collecting money may be, is in want of reinforcement. It needs to have a little common sense infused into its counsels; and we trust that not only all the medical profession, whose views may be looked upon as interested, but also all the public who are in possession of the facts, will consider that the help which the board requires will come best from the distinguished medical staff of the hospital. They are willing and especially able to assist the board, and the presence of certain of them on the board would prevent the recurrence of the unseemly language used by certain of the speakers at the recent extraordinary meeting. This would be a good thing for the hospital, as appears from the letter on page 630 of our issue to-day, signed "A Life Governor."

No one reading our report of the proceedings at the extraordinary meeting can fail to be struck with the want of common civility displayed by certain of the speakers towards the medical staff who discharge the scientific work of the hospital. The medical staff abstained from attending the meeting for reasons which they made sufficiently clear in our columns. They knew that a gathering convened at the height of the holiday season could not possibly be representative of the governors and subscribers; while their position at the meeting would have been peculiar in that, although anything they said might be listened to by the courtesy of the meeting, the constitution of the hospital would preclude them from giving any votes. The medical staff, therefore, were absent from the meeting, and the occasion became a field day for such of the governors, subscribers, and members of the board of management as were sufficiently interested to attend. Mr. GEORGE RUSSELL, chairman of the extraordinary meeting, thought that the staff of the hospital, being specialists, had so narrowed the range of their mental capacities as to be unable to exercise a trusted voice in the practical business of the hospital. Wrapping the bolus in the gilt paper of circumlocution, the chairma of the extraordinary meeting asked the assembly to believe that the medical staff of the National Hospital for the Paralysed and Epileptic were unable to transact the ordinary business of this world. Mr. HOPWOOD, of the Railway Department of the Board of Trade, if not quite so impolite in meaning was blunter in phraseology. Mr. HOPWOOD was speaking, as he pointed out, as the man of experience. The case was one with the nature of which, he suggested, he was quite familiar, for similar situations occurred "with periodic recrudescence in almost every branch of philanthropic work." And, to show how completely he appreciated the position, he spoke of strikes and lock-outs; he told his audience that he

[2] THE LANCET, Jan. 27th (p. 221), Feb. 3rd (p 296) and 10th (p. 371), 1900.

had "never yet heard that servants in an undertaking, like, say, the London and North-Western Railway, have gone so far as to ask for direct representation on the board of directors," and gracefully compared the medical staff of the National Hospital to servants waiting upon Sir JOHN BLUNDELL MAPLE and threatening to destroy his premises unless he put two of them on his directorate. We are uncertain if Mr. HOPWOOD is a member of the board of management of the National Hospital, and we do not know where he obtained the droll familiarity with hospital management which considers a lock-out a thing of every-day occurrence; but we are sure that if he mediates at the Board of Trade between employers and employed with the delicate sympathy of manner which he displayed when discussing the relations of the medical staff to the management of their hospital he must be an awkward employé for a Government department in these thin-skinned days. Dr. SEPTIMUS GIBBON spoke on the ground that he subscribed £5 in 1858. That was very kind of Dr. SEPTIMUS GIBBON, but it gave him no right to say that the dignified and temperate letters from the medical staff which appeared in our columns and in those of the *Times* were attempts on the part of the medical staff to obtain free advertisement. The date when Dr. SEPTIMUS GIBBON was moved to give his £5 note to the National Hospital leads us to think that perhaps he is not quite abreast of the times, while his position as sanitary officer to the hospital the management of which has been impeached prevents his words from being regarded as impartial. There were other speakers who seemed entirely unable to recognise, even while they declared their high respect for the scientific standing of the medical staff, that the medical staff are an integral part of the institution to which they give their services, that they count in the treatment of the sick for as much as persons who give subscriptions, and that their knowledge of hospital affairs must necessarily be practical and intimate. We have selected for comment the remarks which offended against good taste, but the general tone of the meeting was unfriendly towards the medical staff.

We sincerely trust that, when the governors and subscribers of the National Hospital for the Paralysed and Epileptic meet in anything like representative numbers to debate the questions now at issue between the medical men and the laymen who are jointly responsible for the efficiency of the institution, they will repudiate the attitude which has been assumed by the board, and will give no hearing to those whose policy is simply to be against the medical staff. They will not allow their medical officers, through whose exertions the hospital has been raised to such a high pitch of scientific efficiency, to be labeled "self-advertisers" or "cabinet-makers"; nor will they endorse the view that a neurologist is necessarily an ignoramus away from his 'ology. The public, as well as that portion of the public which more particularly supports the hospital, will see that, if there are differences between the medical staff and the board of management, the fault may very well lie with that party to the differences which seems to be unable to treat its adversary with courtesy. The board of management complains that the circular letter from the medical staff to the governors of the hospital, dated May, 1900, alleging the administration of the hospital to be very unsatisfactory and the reputation of the institution to be in danger, was addressed to the governors and not to itself. This might have been a valid objection to the course of conduct pursued by the medical staff had the board of management shown itself in sympathy with the objects or work of the medical staff. But the board has displayed contempt alike for the common sense, business aptitude, and scientific work of the medical staff, so that the medical staff, having complaints to make, might well consider it wiser in the interests of the public to communicate them directly to the governors rather than to waste time upon the board. And now that the management of the hospital, as conducted by the board, has been impeached by the medical staff, it is necessary that there should be a full and unbiased inquiry into all the allegations.

# Annotations.

"Ne quid nimis."

## THE DANGER TO THE CHILD'S LIFE IN PRECIPITATE LABOUR.

A CORRESPONDENT sends us an interesting account of a woman, the mother of two children, who was confined by the roadside after about two pains of a fine, strong, lusty boy. As he remarks, precipitate labours are uncommon, and yet quite a large number of similar cases can be collected from current medical literature. The fact that in such cases the mother is often taken completely by surprise might lead to the idea that the danger to the child's life would be great. Such, however, does not appear to be the case. When the death of the child occurs from the rapidity and suddenness of the labour it must be due as a rule to one of two causes—either to the child being suffocated by falling into a closet at the time of delivery, or to the injury which the child receives from falling in cases where the woman happens to be delivered whilst standing. The first of these accidents has undoubtedly occurred from time to time. With a view to determining the effects upon the head of a child falling from different heights the following experiments were carried out by Licieux. 15 stillborn children were allowed to drop perpendicularly from a height of 15 inches on to a hard floor; in 12 of them a fracture of one or both of the parietal bones was found. In the same way another 15 stillborn infants were allowed to drop from a height of three feet and in 12 instances fractures of the parietal bones, in some cases extending to the frontal bones, were found. From these experiments it might well be supposed that children born while the mother was standing would almost certainly be fatally injured. The actual facts do not, however, bear out any such supposition. Klein of Stuttgart collected 183 cases of sudden expulsion of the fœtus. Of these, 155 children were expelled while the mother was in the upright posture, 22 when sitting, and six when on the knees. 21 cases occurred in primiparæ. Of the whole number no single child died, and no example of fracture of the bones or any severe injury occurred. Two of the infants suffered from temporary unconsciousness and one had a scalp wound with some bruising over the right parietal bone. An interesting legal case in which this question was involved is reported by Lee. An unmarried girl was indicted for murdering her illegitimate child. There were no marks of external violence but blood was found in

considerable quantity under the scalp over the frontal bones. The pericranium was separated from the bones and both parietal bones were fractured, the left in three places, the right in one place. Portions of the lungs floated in water. For the prosecution it was argued that the child was born alive and was killed by intentional violence applied to the head. For the defence it was contended that the prisoner had been taken suddenly in labour while in a standing position in the yard, and that the injury to the head was caused by the child falling upon the ground which was frozen and hard. The jury brought in a verdict of acquittal. There are several possible reasons why the sudden and unexpected occurrence of labour is so seldom attended with any injury to the child. It is probable that the majority of women under such circumstances instinctively assume as far as possible a somewhat squatting position and so the actual distance that the child falls is not great. The cord no doubt acts as a restraining force and breaks the fall, and even if it be completely torn through the descent of the child will be checked sufficiently to prevent serious injury. The occurrence of hæmorrhage from the torn cord is a possible danger. That a child may die from the accidental or intentional failure to tie the cord has been proved by several fatal cases. In 21 of Klein's 183 cases of sudden labour the cord was torn through close to the abdomen and yet in no single case was there any fatal hæmorrhage. The condition of the cord torn through by the sudden and forcible expulsion of the fœtus may well be compared to that of the cord of animals in which the mother is accustomed to gnaw it through. In both instances the vessels would be more likely to contract and retract than when cleanly cut, and the tendency to the occurrence of hæmorrhage would be very slight. An examination of the recorded cases therefore does not tend to confirm the common opinion that the danger to the child in a case of precipitate labour is considerable.

## INOCULATION FOR CHOLERA AND TYPHOID FEVER.

A PARLIAMENTARY paper which has just been issued, containing official correspondence relative to preventive inoculation against cholera and typhoid fever in India, gives some interesting information on these much debated questions. Anti-choleraic inoculation was practised by Mr. Haffkine in Bengal in 1896, the cases treated being for the most part those of coolies proceeding to Assam to work in the tea-gardens. Captain J. C. S. Vaughan, I.M.S., who continued Mr. Haffkine's work, states in his report that the impression has gradually gained ground that the inoculated are not nearly so liable to be attacked as are the uninoculated. Anti-choleraic inoculation has always, so far as he knows, been voluntary and the work has increased. In Purulia he and his assistants had at first to go round the coolie depôts and inoculate such persons as they could persuade. Since then Messrs. Driver and Stainforth, the principal forwarding agents in Purulia, have given expression to a decided preference for inoculated coolies and Captain Vaughan mentions a case in which a tea-planter from Cachar arrived in Purulia, selected 200 coolies and quite spontaneously had every one of them inoculated. In the month before the date of his report he inoculated 1776 coolies. Mr. Haffkine's notes on anti-choleraic inoculation in Calcutta show that the total number of persons inoculated in the affected portions of that city was 7690, and from his statistics of the results it appears that among 654 uninoculated cases there were 71 deaths (a death-rate of 10·8 per cent.), whereas among 402 inoculated cases there were only 12 deaths (a death-rate of 3 per cent.). For every 11 deaths among the uninoculated there were therefore only three deaths amongst the inoculated. In the report of the Sanitary Commissioner with the Government of India for 1897 it is stated that preventive inoculation against cholera was carried on in Bengal throughout the year, upwards of 10,000 persons having undergone the treatment, most of whom were coolies proceeding to the tea-gardens of Assam and Cachar. In his report for 1898 the Commissioner says that if any conclusion is permissible from such figures as are available it is decidedly in favour of the operation. The portion of the Parliamentary paper which deals with the question of anti-typhoid inoculation contains some correspondence which has passed between the Indian Government and the Secretary of State for India. In 1897 the Government of India suggested that Professor A. E. Wright's system of preventive inoculation against typhoid fever should be tried on such British officers and soldiers embarking for India as might consent to the treatment. The War Office, however, raised some objections, and orders were issued that some voluntary experiments which had been carried out in India without official sanction were to be discontinued. Nevertheless the Commander-in-Chief had become persuaded of the advantage of these inoculations and strongly recommended them in the interests of the health and efficiency of the British army in India. It was known that over 2000 men were inoculated, that in no case did any bad or unfavourable symptoms follow the operation, and that only a very few (five or six) of those inoculated contracted typhoid fever subsequently. In a letter of date May 25th, 1899, the Government of India said:—

> The annual admissions per mille for enteric fever amongst British troops in India have risen from 18·5 in 1890 to 32·4 in 1897, while the death-rate has increased from 4·91 to 9·01, and we are of opinion that every practical means should be tried to guard against the ravages made by this disease. The anti-typhoid inoculations have been, we believe, on sufficiently large scale to show the actual value of the treatment, while the results appear to afford satisfactory proof that the inoculation when properly carried out affords an immunity equal to, or greater than, that obtained by a person who has undergone an attack of the disease; further, the operation is one which does not cause any risk to health. In these circumstances we are very strongly of opinion that a more extended trial should be made of the treatment.

In August, 1899, the Secretary of State for India approved of inoculation being performed at the public expense, and on March 8th, 1900, a despatch from the Government of India mentioned that "the measure had been widely resorted to."

## THE EMPLOYMENT OF EPILEPTICS.

SIX years have now elapsed since the formation of the colony for epileptics at Chalfont St. Peter, Buckinghamshire, and the value of the work accomplished there is recognised on all sides. In the report of the honorary medical staff for the year 1899 it is stated that amongst the colonists "a marked improvement has been noted in the majority of instances both as regards the general state of health and the disease," and that the progress has been especially noticeable in the younger cases of both sexes, "the improvement both in their general bodily development and more particularly in their disease being highly satisfactory." On Dec. 31st, 1899, there were 63 male and 24 female colonists. Of the males about a dozen were principally employed in the building department at carpentering, plumbing, painting, bricklaying, and smith's work the remainder were chiefly employed in farm and garden work. Of the females, about 11 were usually employed in the laundry and the remainder in housework. The report of the executive committee presented at the annual meeting of the National Society for Employment of Epileptics, 12, Buckingham-street, Strand, London, W.C., contains a

brief review of the progress of the colony during the first five years of its existence, from its commencement with a temporary iron building in 1894 down to the opening of four new permanent homes by the Duke and Duchess of York in 1899. The applications for admission are in excess of the accommodation, and funds are urgently needed for the building of additional homes as well as for other purposes which the development of the colony has rendered necessary.

## THE DRAPERS' COMPANY: THE "MERITS AND NEEDS" OF HOSPITALS.

IT is gratifying to report that the Worshipful Company of Drapers have sent their munificent annual subscription of £1000 to the Prince of Wales's Hospital Fund for London, and it is still more so to see that in forwarding their generous cheque they say that "they have learnt with much satisfaction that the committee have appointed visiting sub-committees consisting of persons practically acquainted with hospital management with the object of obtaining information as to the merits and needs of the various institutions. The company regard this as a most important step towards promoting the well-being of metropolitan charities and strengthening their claims on public benevolence." In having regard to the merits and needs of hospitals the Prince of Wales's Fund is following the excellent example of the Hospital Sunday Fund, though it takes perhaps a more practical way of carrying out the matter. If the public could be assured that hospitals acted discreetly in their charity there would be no end to its liberality.

## TREATMENT OF SIMPLE GOITRE IN YOUNG ADULTS.

PROFESSOR GEORGE MURRAY of Newcastle contributes to the August number of the *Edinburgh Medical Journal* a valuable paper on the Medical Treatment of Some Forms of Simple Enlargement of the Thyroid in Young Adults. He states that the results appear to be scarcely as well known in this country as they deserve to be and that he had seen several cases of goitre in which operative treatment had been proposed as the only means of relief but which improved so much under medical treatment that no operation was needed. The most favourable cases for treatment were those of simple parenchymatous enlargement of the thyroid gland occurring in adolescents and young adults. In these there was a uniform general enlargement of the whole gland which came on gradually and painlessly until it attracted attention by the discomfort it caused to the patient when wearing a collar. As the enlargement proceeded there might be dyspnœa from compression of the trachea. This was probably a true hypertrophy of the thyroid gland occurring in response to some demand for an increased supply of thyroid secretion. In some cases the gland if left untreated would continue to enlarge beyond physiological limits, and to arrest this growth it was necessary to give the thyroid gland a period of enforced rest by supplying to the patient by the mouth preparations of active thyroid substance. The gland then passed into a resting condition and underwent a partial atrophy with corresponding diminution of size. This may be compared to the mammary gland during lactation, which, as soon as the child is weaned and the demand for milk ceases, returns to a resting condition and decreases in size. In selecting suitable cases for treatment it is most important to ascertain that symptoms of exophthalmic goitre, such as frequent pulse, exophthalmos, nervousness, and tremors, are entirely absent, for in cases of this disease the symptoms are often aggravated by thyroid extract. In carrying out treatment either liquid thyroid extract (15 minims) or dry thyroid (three or more grains) may be given three times a day. Each lobe of the thyroid of a sheep should yield eight grains of the dry thyroid substance. The following two cases are given as illustrative instances. Case 1.—A girl, aged 13 years, noticed after an attack of bronchitis which occurred two years previously, a swelling in front of the neck which steadily increased. On admission to the Newcastle Royal Infirmary early in February both lobes and the isthmus of the thyroid were found to be enlarged uniformly. The superficial veins in front of the thyroid were conspicuous and there was a little dyspnœa which was increased on exertion. The circumference of the neck over the swelling was 16½ inches. When pressure was made on either lobe towards the opposite side the breath-sounds became stridulous. She was treated with dry thyroid substance as above three times a day, and within a few days the goitre had distinctly diminished in size, the neck being reduced to 15 inches in circumference, and with continuation of the treatment to 14 inches. The breathing became easier in consequence and she continued to improve till on April 12th, when she left the hospital, the neck was 13¾ inches in circumference and the thyroid gland had returned nearly to its normal size. Case 2.—A lad, aged 16 years, suffered from a gradual enlargement of the thyroid for six months, the enlargement involving both the lobes and the isthmus, till he was unable to wear a shirt collar 15½ inches in circumference but could button on one of 16½ inches. He was ordered three grains of the dried thyroid three times a day and ordered to rub red iodide of mercury ointment over the goitre every night. After a month the thyroid substance was taken only once a day and after another month the ointment was discontinued. The goitre steadily diminished until it was reduced to half its size, the circumference of the neck being reduced to 14 inches.

## CASE-MORTALITY IN METROPOLITAN ASYLUMS BOARD HOSPITALS.

THE Statistical Committee of the Metropolitan Asylums Board Hospitals have just issued their annual report for 1899 which as usual contains much valuable and well-arranged statistical information relating to the cases of infectious diseases treated in those hospitals during last year. The total number of admissions to the hospitals was 25,094 and considerably exceeded the number admitted in any previous year. The cases of scarlet fever, of diphtheria, and of enteric fever all showed a marked increase upon the number in the previous year. The increase in the cases of diphtheria and of enteric fever may be attributed to increased prevalence of those diseases in London, as the death-rate from each of those diseases was higher in 1899 than in the previous year. As regards scarlet fever, however, the metropolitan rate of mortality was very considerably lower last year than in any previous year on record and therefore if the increase in the admissions to the Asylums Board Hospitals was even partly due to increased prevalence of the disease, the type of disease must have been exceptionally mild. The report before us points out, however, that the proportion of total admissions to these hospitals to the total number of notified and legally admissible cases have increased from 33·6 per cent. in 1890 to 68·1 per cent. in 1899; the proportion of scarlet fever cases increased from 42·8 to 74·3 per cent.; of diphtheria cases from 17·9 to 69·7 per cent.; and of enteric fever cases from 22·5 to 40·8 per cent. The cases of scarlet fever admitted to the hospitals last year numbered 13,290, while the deaths did not exceed 353, the case-mortality being as low as 2·65 per cent., against 4·07 and 4·12 in the two preceding years. The decline in the case-mortality of scarlet fever in these Metropolitan Asylums Board Hospitals has been remarkable and constant during the past 25 years; the mean proportion was 12·88 per cent. in the five years 1875–79, whereas in the most recent

five years (1895–99) the mean proportion of case-mortality did not exceed 4·12 per cent. This marked decline may be partly due to the admission to the hospitals of a larger proportion of mild cases in recent years and partly to improved methods of treatment, but it seems impossible to doubt that it is mainly due to an alteration in the average type of the disease. Cases of diphtheria were first treated in these hospitals in the latter part of 1888, and the number of admissions have since steadily and rapidly increased from 722 in 1889 to 8676 in 1899, which exceeded by 2110 the number in the preceding year. With the increase of cases under treatment the proportional case-mortality has steadily declined from 35·0 per cent. in the three years 1889–91 to 15·7 per cent. in 1897–99; the proportion last year was 13·95, showing a marked further decline from the proportion in preceding years, in which it steadily fell from 30·42 in 1893 to 15·38 in 1898. It may be presumed that the same causes which have affected the rate of mortality from scarlet fever have also influenced the rate of mortality from diphtheria; it therefore seems impossible to attribute the marked decline in recent years, at any rate entirely, to the effect of antitoxin treatment. The number of cases of enteric fever admitted to these hospitals in 1899 (1535) was more than double the average number in recent years, and the nearest approach to so high a number since the hospitals were opened in 1871 was 869 in 1898. The case-mortality of enteric fever last year was 16·47 per cent., against 18·64 and 17·73 in the two preceding years. The case-mortality from this disease has fluctuated more or less from year to year since 1872, but has shown no marked decline; the lowest proportion was 13·20 per cent. in 1892, and the highest was 24·68 in 1875. 11 admitted cases of typhus fever are recorded in the tables, but none of them proved fatal, which suggests an exceptionally mild form of the disease. Not more than 18 cases of small-pox were admitted of which three proved fatal. Taking all notifiable infectious diseases in the aggregate, the rate of mortality resulting therefrom in the metropolis has shown a decided and marked decline since the Metropolitan Asylums Board Hospitals were established in 1870, and there is little reason to doubt that these hospitals constitute an important factor in the causation of this decline, which affords undeniable proof of improved sanitary conditions notwithstanding the constant growth of the population of London.

## LAPAROTOMY IN TYPHOID PERITONITIS.

A REPORT on this question presented to the Boston Society for Medical Improvement by Dr. G. B. Shattuck, Dr. J. C. Warren, and Dr. F. Cobb, and published in the *Boston Medical and Surgical Journal* of June 28th is of great importance. It is based on 24 hospital cases of typhoid fever in which laparotomy was performed for symptoms of peritoneal infection in the years 1895–1900. Of these 17 were cases of peritoneal infection from intestinal perforation; two from threatened perforation or areas of necrotic peritoneum; one from a ruptured mesenteric gland; and one from an unknown cause, presumably intestinal perforation. In the remaining three the cause of the symptoms could not be ascertained. As the title of this annotation indicates the laparotomy was performed in cases of acute peritoneal infection, not necessarily of perforation, for no differentiation can be made between the symptoms of perforation and of general septic peritonitis otherwise produced. This, of course, was previously known, but its logical implication that the question should be discussed as that of operation for typhoid peritonitis and not for perforation seems not to have been grasped. The titles of all the previous papers refer simply to operation for perforation and this was diagnosed in all the present cases. Of the 21 cases in which a cause of the peritonitis was found seven presented sudden acute symptoms of grave abdominal infection without any premonitory ones. It is noteworthy that of these fulminating cases, which conform most closely to the hitherto established idea of intestinal perforation, only five were due to actual sudden perforation; one was not a case of perforation at all, and in the other the perforation and progress of the localised peritonitis did not cause any symptoms. In the 14 other cases distinct warning symptoms were present and preceded equally distinct diagnostic symptoms. The symptoms which marked the beginning of the peritoneal infection in the second group were various degrees of abdominal pain and tenderness, either localised or general. The importance of these symptoms was not recognised, and, therefore, as complete physical examination as might be desired was not made. In three cases it was noted that pulse and temperature were rising at this early period. The warning abdominal pain preceded the severe symptoms by from three to 60 hours. The severe abdominal symptoms which determined the diagnosis and the operation were those of general septic peritonitis—general abdominal pain, severe general tenderness and rigidity, abdominal distension, collapse, weak pulse, and anxious face. In only three cases was there vomiting. The classical fall of temperature was not often present. Of eight cases in which the leucocytes were counted four showed leucocytosis, four did not. In only two cases was obliterated liver dulness observed. The early diagnosis of peritoneal infection is important in reference to operation. Cushing has described a "pre-perforative stage" in which the symptoms (the "warning symptoms" described above) are due to the commencing involvement of the serosa.[1] A study of the above-mentioned cases and of those reported by Cushing show that abdominal pain, especially if localised, and especially in mild cases, should always be regarded as a danger-signal. It usually means peritoneal infection. This pain is most frequent in the right iliac region. Associated localised tenderness, spasm, and leucocytosis, would confirm this view. A rise of temperature usually accompanies it. But by "pain" is not meant the discomfort or uneasiness accompanying meteorism or tympanites. A special study of 70 cases of typhoid fever in the Massachusetts General Hospital shows that in the majority of cases of mild and moderately severe typhoid fever no genuine abdominal pain is complained of, even when distension, diarrhœa, and hæmorrhage are present. Out of the 21 cases recovery took place absolutely in 3 (14·3 per cent.); in another case the patient recovered from the operation and died from intestinal hæmorrhage. The present writers insist on the great importance of early operation in typhoid peritonitis, and of frequent enumerations of leucocytes in every case of typhoid fever. In the presence of abdominal pain an early count of leucocytes is necessary. When the warning "pre-perforative" symptoms are present a surgical consultation should at once be held.

## THE PHYSICIAN'S DUTY.

THE *North Devon Herald* of August 16th contains a letter signed "A Physician," in which the writer lays it down as his opinion that it is justifiable for a physician to kill, or, as he prefers to call it, "to end a patient's inevitable suffering and hasten his certain death." He states with perfect calmness that he has relieved the sufferings of a good many patients in the course of 35 years' practice. So we trust has every medical man, but not in the sense in which "A Physician" evidently means it to be taken. He cites two instances in which he kept patients under chloroform for some six or eight hours until they died. With this procedure *per se* we

[1] THE LANCET, June 24th, 1899, p. 1730.

have no cause of quarrel. It is a recognised practice in cases involving great pain or suffering to keep patients under some anodyne until the end, and chloroform is as good as any other. But apparently "A Physician" gave the chloroform to kill, for he says, "I have always used chloroform ..... it arrests the heart's action in systole." We cannot see "A Physician's" line of reasoning. If he wanted to kill his patient why did he not push the chloroform, or directly that his patient was under its influence divide the medulla? According to him both the patient and the patient's friends were willing that life should be terminated. If so, why prolong the agony? We can only repeat the well-known opinion that it is not the duty of a medical man to take life.

## A COMMISSION ON DYSENTERY AND ENTERIC FEVER IN ARMIES IN THE FIELD.

ON August 18th the *Carisbrooke Castle* sailed for South Africa. Among her passengers were Dr. W. J. R. Simpson, Professor of Hygiene at King's College, London, and Dr. J. Lane Notter, Professor of Military Hygiene at Netley. On their arrival at the Cape they will be met by Major D. Bruce, R.A.M.C. These investigators have been commissioned by the Government "to inquire into the nature, causation, pathology, and modes of prevention (more particularly as affecting armies in the field) of dysentery, and its connexion, if any, with enteric fever." These two diseases are of course the scourge of armies in the field and there is unfortunately no lack of cases into which research may be made, so that we may hope that the labours of the Commission will result in some means being found whereby the appalling loss of life from dysentery and enteric fever may be lessened in future campaigns.

## A STUDY IN BACTERIOLOGY.

IN the July-August number of the *Bulletin of the Johns Hopkins Hospital* Dr. Harvey Cushing publishes a long and profusely illustrated paper entitled, "A Comparative Study of Some Members of a Pathogenic Group of Bacilli of the Hog Cholera or Bacillus Enteritidis (Gärtner) Type, intermediate between the Typhoid and Colon Groups." He says that in the large typhoid-colon group of bacilli very definite cultural and pathogenic peculiarities are possessed by the bacillus typhosus and the bacillus coli communis, the extremes of the group, but intermediate to these forms there is one especially recognisable sub-division, the clinical significance of which as a definite type has been much slighted. This intermediate group (including the bacillus enteritidis and its near allies) has been called the "Gärtner" group by Herbert E. Durham and the "hog cholera" group by Theobald Smith. Sanarelli's bacillus icteroides seems to belong to the same group. Norman B. Gwyn in 1898 reported in the *Bulletin of the Johns Hopkins Hospital* a remarkable case which presented all the clinical symptoms of typhoid fever, but in which no serum reaction was at any time demonstrable toward the bacillus typhosus. The subject of Dr. Cushing's communication was an organism almost identical with Gwyn's and belonging or closely allied to the hog cholera or Gärtner group; it was isolated from an abscess of the rib which appeared during convalescence from a prolonged fever of the enteric type. That a general infection had occurred was clear from the specific action of the patient's serum toward the isolated organism; there was no agglutinative reaction whatever evidenced toward the bacillus typhosus. Whether this infection was of intestinal origin and occurred through the typhoid lesions or whether it was itself the cause of the fever must remain undecided. The patient was a coloured man, 27 years of age, who was admitted into the surgical wards of the Johns Hopkins Hospital on March 1st, 1899, with a sinus on a level with the fifth rib at the edge of the sternum. From early in June, 1898, nine months before admission, he had suffered for ten weeks from what his medical attendant described as typhoid fever with a severe but typical clinical course. The bacillus was found in the pus from the sinus. It could not be distinguished from the typhoid bacillus in form or staining qualities. Dr. Cushing concludes that it might represent a division of the Gärtner group, growing less luxuriantly and more like the bacillus typhosus in various fluid media and resembling it in its pathogenic action on animals.

## VACCINATION STATISTICS.

A PARLIAMENTARY return which has just been issued gives some valuable statistics relative to the working of the Vaccination Acts in the years 1898 and 1899 respectively. Section 2 of the Vaccination Act, 1898, authorised justices of the peace and police magistrates to issue certificates of conscientious objection on the application of parents who desired that their children might not be vaccinated. The Act came into force on August 12th, 1898, between which date and Dec. 31st of the same year the vaccination officers in England and Wales received more than 200,000 certificates of conscientious objection. During the following year these certificates showed a great falling off, for the number received by the vaccination officers and dated between Jan. 1st and Dec. 31st, 1899, was only 32,341, relating to 32,357 children. The total numbers of certificates of successful primary vaccination received annually by the vaccination officers from Jan. 1st to Dec. 31st were 500,314 in 1898 and 669,349 in 1899, being an increase of 33·8 per cent. in 1899. The number of births registered in England and Wales during 1898 was 923,265, and during 1899 it was 928,640. The ratios per cent. of successful primary vaccination to births registered were 54·2 in 1898 and 72·1 in 1899, an increase in ratio of 33 per cent. in 1899 as compared with 1898. These figures seem to show that the noisy opponents of vaccination are losing their influence with the public and that the outlook as regards the prevention of small-pox is proportionately improved.

## SWELLING OF THE SUBMAXILLARY SALIVARY GLANDS IN PLUMBISM.

WE have recently called attention to parotitis in plumbism,[1] a condition which, though well known to French writers, appears to have been unnoticed in this country. The parotid is the salivary gland most usually involved, but others may be affected in rare instances. At the meeting of the Société Médicale des Hôpitaux of Paris on June 22nd MM. Louis Rénon and Latron described a case in which the submaxillary glands alone were affected. A painter, aged 45 years, entered hospital on March 23rd, 1900, suffering from lead colic. All the usual symptoms were present. The face was earthy and there was a characteristic blue line on the gums. The patient began to work as a painter at the age of 13 years, and had his first attack of plumbism in 1896 at the age of 41 years. He was in hospital eight months with paralysis of the upper limbs. Three months later he had gout in both great toes. In the present attack there was on admission almost complete saturnine paralysis of the right forearm. There was no albuminuria. On the 27th the submaxillary regions were swollen but painless. On each side was a rounded mass of the size of a chestnut, somewhat hard, slightly lobulated, and moveable on the deep parts. The superficial parts were moveable over the tumours and there was neither redness nor tenderness. The orifices of Wharton's ducts showed no signs of inflammation. This condition lasted for three days and then

1 THE LANCET, Jan. 13th, 1900, p. 114.

gradually diminished, disappearing entirely 20 days after its onset. On April 2nd there appeared on the dorsal aspects of the feet and lower thirds of the legs a symmetrical bullous eruption resembling herpes zoster. It disappeared eight days after the drying up of the bullæ. The patient left hospital on April 20th free from all symptoms excepting paralysis of the extensors of the right forearm. MM. Rénon and Latron consider that the absence of signs of inflammation of the glands and of the orifices of the ducts of Wharton shows that the swellings were not due to an ascending infection of the glands from the ducts, and makes it very probable that lead was exclusively concerned in the causation. The theory is that the lead in the process of excretion by the salivary glands exercises an irritating influence on them.

## NEGLECTED NOTIFICATION: A BAD EXAMPLE.

AT the Oakham Petty Sessions an unusually flagrant case of neglect to notify an infectious disease or to take the precautions enjoined by law has been brought before the magistrates. The culprit was described as a Primitive Methodist minister whose family of six children were, on the medical officer insisting on inspecting them, found to have had scarlet fever and to have reached the desquamation stage. The parents had had ample warning, for the sanitary inspector had already visited the house and had been told by the defendant and his wife that a daughter, the subject of his visit, was suffering only from nettle-rash. Charged, therefore, with failure to notify and with exposing his daughter in the public streets while suffering from scarlet fever the reverend gentleman in question may consider himself to have got off lightly with fines of £5 and £1. Ministers of religion of whatever denomination or sect are popularly supposed to be men of better education than the bulk of their congregations and to be qualified to instruct them by precept and example in their duty towards their neighbours. Those responsible for the public health of Oakham, where scarlet fever is stated to have been spreading rapidly, are to be congratulated on having, in a sense at all events, made an example of this minister, and it is to be hoped that his flock will regard his fate without sympathy. Those who may think themselves able to trace infection in their own families from contact with his family will at all events not feel disposed to subscribe to relieve him of his fine or to aid him in the purifying of a house which must need disinfection all the more from its owner's desire to regard scarlet fever as nettle-rash.

## THE LONDON CHILD'S PLAYGROUND.

IT was stated recently, in the course of an inquest held upon the body of a child of seven who had been run over and killed in St. Pancras while playing in the street, that he would not have been there had it not been that it was holiday time and that his school was consequently closed. This gave occasion for the suggestion made in a contemporary that during holidays the playgrounds of all such schools as have playgrounds attached should be kept open, some provision being made for the supervision of the children at a time when they have nothing to do but to play. That the children of London and other large cities are but scantily provided with playgrounds is patent to everyone who ever walks through streets where the traffic admits of any semblance of a game being carried on or of children lingering in the roadway, and it certainly seems desirable that the playgrounds attached to the schools should be made use of at all seasons. Many schools other than board schools have no playground worthy of the name, and those who reside in proximity to them are well aware that the street is, to put it mildly, an extremely undesirable place in which to play. The children when released from lessons crowd the roadway for some time to their own danger, to the danger of passers-by from such missiles as balls, tipcats, or stones and to the anxiety and inconvenience of all drivers of vehicles, while when they have dispersed no better space is provided for them than the roadway outside their homes which may or may not be less frequented than that near their school. Without dwelling upon the hardship to those who may be made criminally or civilly responsible for injury done to the children by passing vehicles we may illustrate the dangers of the streets by pointing to the police news in the *Times* of August 16th. Out of five cases reported three were charges of manslaughter brought against drivers and two of the deaths that had occurred were those of children, neither of them being the St. Pancras case referred to above.

## DISEASE OF THE MYOCARDIUM IN CONGENITAL SYPHILIS.

IT is not as yet sufficiently well known that congenital syphilis may produce grave vascular disease in children. G. Berghinz records in the *Gazetta degli Ospedale* of June 24th, two interesting cases which throw a light on the arterial and vascular lesions which may be produced in infants and which may result in death in the midst of apparent health. One case is that of an infant 18 months old who, while in apparent good health, suddenly developed a paroxysmal dyspnœa with cough and intense cyanosis, symptoms which possibly pointed to œdema of the lungs. There were no symptoms, however, of fever, renal disease, epilepsy, laryngeal spasm, or status thymicus, and the case ended fatally. The post-mortem examination disclosed syphilitic vascular lesions of a characteristic sort (arterio-sclerosis) such as occur in the subjects of congenital syphilis, and affecting especially the myocardium. No syphilitic history was ascertained in the parents, but in the second case in which the same group of symptoms occurred in a child and ended fatally inquiry revealed an undoubted syphilitic history in the child's father. Berghinz refers also to an article in the *Centralblatt für Kinderheilkunde* for June containing a summary of the post-mortem appearances in 22 cases of hereditary syphilis, in which it appeared that syphilis affected the ganglia of the heart and gave rise to a proliferation of the perivascular connective tissue of the blood-vessels in the cardiac walls which eventually resulted in arterio-sclerosis and death. It is clear, therefore, that arterial disease due to congenital syphilis may, when it affects the coronary arteries and nutrient vessels of the heart, result in rapid and sudden death when symptoms of dyspnœa and cyanosis supervene in a child otherwise apparently healthy. It is also interesting to note that many forms of cerebral palsy (hemiplegia and monoplegia) may likewise be the outcome of cerebral arterio-sclerosis when the latter occurs in the fœtus in utero or in infancy, the results appearing as various forms of paralytic idiocy and imbecility.

## PUBLIC HEALTH IN TRINIDAD.

IN his annual report for the year 1899 Mr. Francis H. Lovell, C.M.G., Surgeon-General of Trinidad, says that malarial fevers were less prevalent than usual and that the general state of the public health of the colony was not unfavourable. The death-rate for the colony of Trinidad and Tobago for the year 1899 was 24·10 per 1000. The population was given as 269,478 in 1899. Yaws showed a great increase in most parts of the colony. The total number of cases treated in Trinidad and Tobago during the year was 2803, with 1193 recoveries. Hospitals for yaws have been established at Arima and in Port-of-Spain. The Arima yaws hospital, which has accommodation for 25 patients, was always overcrowded and 112 patients (with 77 recoveries) were treated here from May to December, 1899. Mr. F. A. de Vertueil,

the medical officer, says that Donovan's solution, either alone or in combination with cinchona or syrup of iodide of iron, was responsible for most of the cures in children. Out of 20 very severe cases in which thyroid extract was used 13 were cured with an average stay in hospital of about eight weeks each. Mr. E. A. G. Doyle of the Colonial Hospital had five recoveries out of eight cases treated with guaiacol in doses of 15 minims thrice daily; the remaining three patients absconded not quite cured. He says that arsenic and iodide of potassium are uncertain in their results and always require prolonged treatment, that mercury has some controlling power over the disease, but requires to be pushed to the limits of toleration in order to produce an effect, and that thyroid tabloids appear to do good, but their action is neither certain nor constant. Dr. R. C. Bennett in his report says that yaws is a dirt disease existing almost without exception in dirty people and that it is "spread by contagion and direct contact." He has made bacteriological examinations of yaws scrapings, but without finding micro-organisms pathogenic of the disease. Dr. T. B. Kenny of Tobago says that in his district fully 15 per cent. of the population suffer from yaws.

## STREET NOISES.

A NEWSVENDOR was on August 14th summoned at Bow-street Police-court for shouting. Mr. De Rutzen is reported to have said that as the case was the first of the kind which had appeared in his court he would only bind the accused over to be of good behaviour and to pay costs. We must be thankful for small mercies, but why the negligence of the police in not summoning cases which they are empowered to do should result in a nominal punishment for one who is responsible for one of the greatest pests of modern life we do not know. If Mr. De Rutzen was only obliged to do his work in say the Strand instead of in the seclusion of Bow-street Police-court, we are quite certain that the number of arrests would vastly increase and we should hope that the full fines would be exacted. The constant howling of "Two o'clock winner," "Two forty-five winner," "Three o'clock winner," and so on up to 7 P.M., when the subject changes to "All the Cricket," is enough to exasperate the most placid nature and is by no means conducive to brain work. Let us, however, offer grateful thanks that the vendors of the dying Boer, of the Armenian paper, of the little penny pocket Bible, and other street toys and trifles do not yell their wares, but we sincerely hope that in future cases of news-yelling which come before Mr. De Rutzen the offenders will be mulcted in full.

## MODERN VIEWS ON LOVE.

"ONCE, in a word, I was a fool: and then I was in love." So wrote a cynical seventeenth century writer with let it be confessed a modicum of truth. We have recently received two American publications which claim to show that their authors have localised love. One of these, Dr. Wallace Wood, places it in what he calls the "anterior metopic lobule." The other, Mr. John M. Dagnall, crudely states his idea thus—"Love is in the stomach not the heart." Dr. Wood's thesis, which is reprinted from the *New York Medical Journal* for June 23rd, 1900, is as follows: A "ramp" is an S-shaped curve and "every fibre and artery in the living body is a ramper. ..... The humblest worm aspires, ramps, stands upon his base, and lifts nose and feelers skyward." Darwin, it will be remembered, studied worms with peculiar care but we do not recollect that he mentions their ramping. On the other hand, we do remember that he mentions that they were quite indifferent to the loudest sounds of the bassoon. Perhaps, however, Dr. Wood's worms would moderate their rampings if he were to play to them. However to proceed. The brain, says Dr. Wood, flowers at both holes, the brain surges forward and upward, and overarching, the Psyche seems to lift up her head. The top of the forehead appears to be ever ramping heavenward or sunward and life is rampancy, perennial life is double rampancy, immortal life is supernal rampancy. We must confess that we have not the slightest idea what this last sentence means, but somehow "supernal rampancy" does not seem a thing to which to look forward. But we understand from Dr. Wood that in this godlike peak, the anterior metopic lobule, lies the centre for the higher sympathy. "As *eunoia*, or the *vis passiva*, this divine force is willingness to give your heart away; as *prothymia*, or the *vis activa*, it is uncontrollable impulse forcibly to give or *throw* your heart away." Further, "it is a divine artery through which is poured the milk of women and the blood of men; it is the navel string that connects the faithful hound to his master." A divine force which is at once a willingness to give your heart away, an artery which carries both blood and milk, and is a navel string, is, to quote Calverley, "a thing imagination boggles at." Mr. John Dagnall writes in what he calls "rhythmical phraseology." We do not find the rhythm although the sentences are cut up into lines, e.g.:—

> "But now comes the mystery of locating
> Love's permanent seat. Is it in the bosom
> Or in the stomach? It is so believed
> That the bosom hath yet Love for a tenant:
> But I can prove that Love's lease there hath
> Long since expired, and that it hath vacated
> The apartment it once occupied in the heart
> To dwell in the stomach."

Needless to say, Mr. Dagnall does not prove this remarkable thesis. If he has not already done so he had better communicate with Dr. Wallace Wood.

IN our issue of August 18th (p. 495) we referred to a report that the members of the expedition of the Liverpool School of Tropical Medicine had telegraphed that they had discovered the filaria in the proboscis of the mosquito. The actual discovery was, however, we may point out, due to two independent observers, Dr. G. C. Low working in the London School of Tropical Medicine, and Captain James working independently in India, who noted filariæ in the proboscis of the mosquito in April, 1900. Probably the telegram really meant to say that the members of the expedition had confirmed the discovery.

IN a telegram to the Colonial Office the Governor of New South Wales gives the following statistics of plague in Sydney up to August 18th, namely: Remaining for treatment August 11th, 13; admitted during the week, none; discharged recovered during the week, five; died during the week, one; remaining for treatment August 18th, seven. Total cases, 303; total deaths, 103; total discharged recovered, 193; total contacts isolated, 1707; total contacts remaining, seven; total Chinese attacked, 10; total deaths among Chinese patients, eight.

A TELEGRAM from the Officer Administering the Government of Mauritius to Mr. Chamberlain, received at the Colonial Office on August 17th, states that for the week ending August 16th seven fresh cases of bubonic plague with three deaths occurred.

A TELEGRAM from the Governor of Hong-Kong, Sir H. A. Blake, to Mr. Chamberlain, received at the Colonial Office on August 20th, states that 26 cases of bubonic plague with 26 deaths occurred last week.

IT is announced that H.R.H. the Prince of Wales has been pleased to appoint Dr. William Job Collins, L.C.C., to be a

member of the Council of the Prince of Wales's Hospital Fund for London.

THE authorities of the Paris Exhibition, 1900, have awarded to Sir F. Seymour Hadden, F.R.C.S., the Médaille d'Honneur for Engraving and Lithography in Group II., Class 8.

DR. GEORGE WM. BALFOUR has been appointed Physician in Ordinary to Her Majesty in Scotland in the place of the late Sir Thomas Grainger Stewart.

## THE WAR IN SOUTH AFRICA.

WHEN we wrote last week the interest was centred in the pursuit of General De Wet by Lord Kitchener's and Lord Methuen's troops and we said that nothing short of the capture of that energetic and skilful Boer leader being an accomplished fact would remove all our doubts or put an end to the harassing raids and surprises to which the British forces have been subjected. That De Wet has again eluded his pursuers and made his escape is now beyond question. He is ubiquitous in his tactics. Presumably he will try to effect a junction with Delarey's or with Botha's force. The theory is that when closely pressed he orders his following to dissolve and meet at some distant rendezvous and that their facilities in getting supplies and their familiarity with all the topographical features of the country enable them to do this with comparative ease. Be this as it may, Mr. Kruger and his followers show no sign of being willing to submit to their fate, and there yet remain De Wet, Olivier, Botha, and Delarey to be reckoned with. Meanwhile the junction of General Buller and General French and their progress towards Mr. Kruger's last stronghold seem to indicate an attack on Botha's force and an attempt to cut off the Boers' railway communication with Lorenzo Marques. Moreover, in view of bringing the war to an end, Lord Roberts has issued an important proclamation, and has reluctantly adopted a far more severe line of policy towards those recalcitrant Boers found guilty of treacherous conduct.

Amid so much unfriendly criticism as has taken place in regard to our military operations in South Africa it will prove refreshing to the officers and men of the force to read what Colonel Tolschin of the Imperial Russian Army has to say of them, for he recognises the exceptional difficulties that had to be encountered and, speaking generally, gives high praise to those charged with the conduct of the war. He expresses his profound admiration for the British troops and evidently has the highest opinion of Lord Roberts, General French, and of many of the other generals. Colonel Tolschin does not at all agree with the attitude assumed by some of the unfavourable critics in this country. Although it is very pleasant to read such generous expressions of praise on the part of a Russian officer actually present in the field, and while we have very little sympathy with much of the captious criticism which has taken place, the fact still remains that the campaign in South Africa has taught us a good deal from which we may hereafter hope to benefit.

That there should be a large amount of disease, and more especially of enteric fever, in South Africa was only to have been expected, for this fever occurs in every campaign, and our experience in previous wars in that country must have led the medical branch of the War Office to anticipate the occurrence of a large amount of it. But it seems clear that a sudden and devastating epidemic such as actually took place was not foreseen. The time of its occurrence after the more or less worn out and badly supplied army, exhausted by fatiguing marches, had reached Paardeberg and had been exposed to all its insanitary conditions, points to that source as the beginning of that particular epidemic. It will be remembered that the enemy's forces at Paardeberg also suffered from an outbreak of enteric fever. Unfortunately its extent and severity among Lord Roberts's force were greatly augmented by the subsequent capture by the Boers of the waterworks at Bloemfontein and the inadequacy and probable fouling of the water-supply, for the sickness and deaths afterwards went up at enormous rates as compared with what they had been. It looks, therefore, very much like a case of water-poisoning on a large scale. We must, however, be content to await the results of further investigation as to the real explanation and causes of this epidemic outbreak. Be the true cause of enteric fever what it may, whether the typhoid bacillus or not, there can be no doubt that troops in the condition in which the British are described to have been were eminently predisposed to become the victims of any disease causes. The bacillus must also be much more widely distributed in nature than it is commonly supposed to be in order to account for the occurrence of all the cases of a disease which is so commonly the scourge of European and American armies in modern warfare.

Of course modern armies are composed of young soldiers of the enteric fever age, but, if we may judge by our statistical experience of the British army in India, recent arrival in a country is a more powerful factor than immaturity of age, for it is notably during the first and (though to a less extent) during the second years of his Indian service that the British soldier is most liable to contract enteric fever, after which the liability rapidly decreases. Our army in South Africa was mainly composed of young men and all were new arrivals there, so that conceding the presence of the disease-cause they made up a very susceptible material for the spread and development of this fever. The climate of South Africa is notoriously a healthy one, but it is, nevertheless, very hot during the hot season—that is at the time when our troops were in the field—and the diurnal changes of temperature are marked at the present time, which is the cold season. In addition to the enteric fever cases there has been a good deal of dysentery as well as many cases of pulmonary disease. The total deaths from disease among officers and men since the beginning of the war amount to over 5000, exclusive of those that have occurred among the sick invalided home and among the patients now in British hospitals in South Africa.

### THE PORTLAND HOSPITAL.

Major-General the Honourable Herbert Eaton, 43, Upper Grosvenor-square, W., has by this week's mail (August 13th) received the following final report of the work done by this hospital since it has been in South Africa:—

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|---|---|
| Total patients received ... ... ... ... ... ... | 1009 |
| Total patients discharged ... ... ... ... ... ... | 560 |
| Total deaths ... ... ... ... ... ... ... ... ... | 37 |
| Patients transferred to base and other hospitals ... | 412 |

In sending his final report Major C. R. Kilkelly, R.A.M.C., of the Grenadier Guards, principal medical officer, mentions that five of his hospital orderlies still remain on the sick list, and that in closing the Portland Hospital these have been transferred to No. 10 General Hospital (Dames' Institute, Bloemfontein). These men, Major Kilkelly adds, are all doing well, and he expects to send two if not three of them home on the transport *Canada* with the rest of the hospital staff. Major Kilkelly further reports that Nursing Sister Cox Davies has been transferred by request of the army authorities to work at Pretoria and that Nursing Sister Pretty (who had been seriously ill with enteric fever) was at the date of writing quite convalescent and was returning with Nursing Sisters Davies and Russell in the *Canada*.

The civilian medical officers attached to the Portland Hospital were leaving to visit various hospitals in Pretoria and elsewhere before sailing for England. Staff Sergeant Noble, R.A.M.C., and Staff-Sergeant Favrell, R.A.M.C., were being transferred to No. 3 General Hospital at Springfontein. Ward Orderly Private Collins had been allowed to take permanent employment on the Imperial State Railways. Ward Orderly Pottinger had been allowed to join the Langman Hospital and left for Pretoria.

The subscribers and those who are interested in the hospital will be gratified to read the following order which has been published officially by the Lieutenant-General Commanding at Bloemfontein, in respect to the work of the Portland Hospital:—

> The Lieutenant-General Commanding cannot allow the staff of the Portland Hospital to leave this station without expressing his appreciation of the good work and devotion to duty performed by all ranks therein.
>
> Bloemfontein, July 28th, 1900.

The Surgeon-General has also written a most gratifying letter of thanks to Major Kilkelly who has now transferred

his services to the new branch of the Imperial Yeomanry Hospital which has been opened at Pretoria.

## THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

We have not had any ambulance train-load sent to us for over a fortnight, but the stream of small arrivals of Yeomanry has been kept up so regularly that, with the large staff of our new branch hospital lodging with us, the wards are kept pretty full. The second instalment has now arrived and has completed the new staff, and it is waiting here until facilities are given to it for going up to Johannesburg. We have had to turn the patients out of one of our huts so as to find sleeping accommodation for the 36 sisters and eight wardmaids, while the 80 orderlies are housed in the tents usually used by convalescent patients, and room is made for the nine medical officers in some of the other tents. As it is such a long time since we have taken in any large batch of acute cases the wards throughout the hospital are what is known technically as "light." A couple of months ago the work was so heavy that we should have been glad to have had these 36 new sisters as a reinforcement, but really now there is not enough work to occupy our own 48, and it is very much to be hoped that the new arrivals will, without much waste of time, be got on to Johannesburg.

Telegrams have just come in from Surgeon-General Wilson saying that the idea of Pretoria has been given up and that a site has been selected at Johannesburg. As a matter of fact, I believe Mr. Barnato's house has been lent for the purpose, and as it has never been occupied and contains no furniture but is complete as to the building it ought to prove very suitable. One of our sergeant-majors, who has proved himself a very good man here, went up there some fortnight ago to make preparatory arrangements, and last Tuesday Colonel Sloggett went up again, accompanied by Dr. Barclay Black, who has done such good work here as sanitary officer that it was felt by Colonel Sloggett and myself that the greatest help we could render to the new hospital would be to spare him for a time from his work here, so that he might go up and scheme out the working details of the new hospital on lines similar to those which have proved so successful here.

De Wet's swoop upon the railway last week seems to have been particularly daring and very skilfully carried out. He knew, it seems, that a quarter of a million of specie was to be taken up from Bloemfontein to Johannesburg and he lay in wait for the train in which it was to travel, allowing two other trains to pass him before he captured the one which he thought would contain the money. Luckily they had been unable at the last moment to get the money away by that train and so, though he was right in his calculations, he most fortunately failed in his object except that he has again buoyed up the spirits of his followers and dislocated our railway service. Colonel Sloggett and Dr. Barclay Black happily left here just too late to be in any danger of finding themselves among the 200 prisoners. They were delayed at Bloemfontein, and we are told that since this last swoop trains have only been allowed to run past the region of De Wet's operations during daylight. The continuance of these difficulties of the railway service makes it very doubtful how soon it will be possible for any or all of the staff of the new branch to get away from here to Johannesburg. The stringency with which any but military travellers are prevented from proceeding north of Bloemfontein may be gathered from the fact that even our civilian director, who has just left us after a visit of 24 hours and who wanted to go on to Johannesburg, although he was well known in that place had to travel as a civilian medical officer. I hope he got through safely, for he was very anxious to get up there. Whether the rest of the staff of the branch hospital are able to follow him soon or not, the Yeomanry hospitals are, we hear, already represented in the Tranavaal, for Surgeon-General Wilson telegraphs that our field hospital which is established in Pretoria has detached part of its staff to open a small hospital in some building in the same town, in which, he adds, it is "doing good work." At least they will not find themselves deficient in supplies, for in addition to a lot of equipment and stores sent out from England for the new branch, a great quantity of things sent up from Cape Town for our use here has by mistake been carried on up-country, and a good deal of shortage has resulted here in consequence. For instance, for the first time in our existence we have run short of tobacco for the patients and I am afraid they will have to go without it for some few days.

From accounts of officers just down from Pretoria there seems to be very little enteric fever there or at Johannesburg, and the opinion of those who know the climate and place is that there will not be any increase in that disease until the spring weather sets in at the end of September, when we ought, they say, to anticipate an even heavier epidemic than the one which is just dying out. Unless, as we all hope, the war has ceased and the bulk of the army has been got out of the country by that time—though as we are already within two short months of it—it is none too soon for precautionary measures to be taken.

What with the arrival of so many new faces and the departure of several of the faces we are accustomed to there is quite an air of change about this place. From among our staff Mr. Raymond Johnson and Dr. Saunders have gone home this week and Mr. Turner and Mr. Thornton have gone down to Cape Town to take over the work of the hospital at Maitland Camp in view of the probable re-massing there of the Yeomanry prior to their departure from the country. Three sisters also are going. Mr. Newland-Pedley, Mr. Hay, and Mr. Ayre Smith have already left us some time ago for home. Mr. Parker has been back at work some time and Mr. Blathwayt has just returned after several weeks' imprisonment in the scarlet fever camp, but Dr. Elliot and Mr. Greenfield, though quite convalescent, have not yet recovered sufficient strength to return to work. In our sisters' sick ward there are several of our own sisters slightly indisposed, but the only serious case is that of a nursing sister whom we were asked to "take in" from De Aar. She had enteric fever, but there was no accommodation or facilities for nursing her at that place and therefore our sisters' sick hut has proved a godsend to her. I am glad to say that she is doing well.

A smart epidemic of what has now become known as "Karoo-itis" has been going the round of the new-comers from England with just the same symptoms as were presented by those of our own staff who were attacked when we first came here. One at least of the many reputed causes of this complaint has disappeared since then—namely, the hot weather; and if a similar process of exclusion can, by comparing notes with other places—for the disease has affected a very wide area—be applied to some of the other theories, we shall perhaps arrive at a true explanation of its cause, and then I hope we shall know how to prevent these distressing symptoms. At present we certainly do not.

The high wind continues and is a great nuisance in many respects, as we have been quite unable to get the large tent which formed the body of the church to stand up, and as only 50 persons at the most can be crowded into the small wood-and-iron structure which hitherto has been looked upon as the chancel we have had to enlarge it, a process which was easy, thanks to the method of construction of the huts in ready-made sections. All the name-boards are stuck up outside the huts now and the interiors are in many cases most prettily decorated with cuttings from the illustrated papers which, thanks to friends at home, come to us in great profusion. Another decoration, the arrival of which has given very great pleasure, is a large signed portrait of the Princess of Wales which Her Royal Highness, as president of the Yeomanry Hospital, has most kindly sent out. A concert is still given each week and at the last one a little play was produced. There is a fresh variety of talent and there are banjos and bagpipes too here now, so that music is generally to be heard in some part or other of the camp throughout the day. One comes upon listening groups outside the tents and huts, several of the audience being busy meanwhile with needlework and woolwork of one sort or another. At the present moment no fewer than 70 patients are working themselves gorgeous belts.

P.S.—Since dictating the above a later telegram has come from Surgeon-General Wilson saying that Lord Roberts has decided after all to have the branch hospital located in Pretoria. It is a splendid thing that Major Kilkelly's services have been secured. His services to the Portland Hospital were of the greatest value and conduced not a little to the success of that institution, and it is most fortunate that its disbandment has come just in time to enable Major Kilkelly to become commandant of our branch hospital.

Deelfontein, July 30th.

## CAPTURE OF THE IMPERIAL YEOMANRY FIELD HOSPITAL.

Major C. Stonham, writing on July 6th, sent to Lady Georgiana Curzon an interesting account of the capture and subsequent release of the Imperial Yeomanry Field Hospital

at Roodeval. The letter has been submitted to us and we are glad to give the following extracts:—

"The Imperial Yeomanry Field Hospital and Bearer Company, Camp, Pretoria, July 6th, 1900.

"On June 6th we camped two or three miles beyond Serfontein—i.e., on the Roodeval side—having come up with 14 scouts under Sergeant May of the New Zealand Contingent. These men camped close to us. We heard at Kroonstadt that the Boers were about, and this evening on camping were told that Captain Knight, D.A.A.G. Imperial Yeomanry (who left Bloemfontein two days after we did), and the men with him had been captured by the Boers about four or five miles further on our line of march; but we hear so many rumours that now we hardly take any notice of them. This time we were to find that the cry 'wolf' was well justified.

"*June 7th.*—Reveille at 5.30. Shortly after we had started the scouts, who had camped near us, came galloping by and made for the crest of some rising ground ahead of us. When we had almost reached this point the scouts, who had remained mounted on the ridge, came galloping back in a procession with the Boers—Boers behind. The Boers fired on the scouts, who made for our wagons, and in spite of our orders to the contrary fired from the other side of them, thus drawing the Boer fire on us. A horse was shot in the leg just in front of me and one bullet passed between a driver's legs and the box of the wagon; fortunately no harm was done. As the wagons were moving from the high ground I rode along them (Hale was seeing after a broken wagon) and ordered the men to wave the flags. As soon as this was done the Boer fire ceased and I was assured by an officer later that they ceased firing as soon as they saw we were an ambulance. When I had reached the last wagon but two I saw the Boers had come up and taken possession and one came riding towards me and directed me to their lieutenant. I found him with about eight Boers by our last wagon, with one scout as a prisoner. He behaved very courteously, regretted that we had been fired on, but said that we must halt our convoy and wait for the general's orders. He had one of our conductors a prisoner, but on my pledging my word that he should not act in any way against the Boers the lieutenant at once handed him over. While we remain halted before going on to the station, about a quarter of a mile distant, I will tell you what we found (subsequently) had actually happened.

"About 150 of the 4th Derby Militia had been trying to hold the station, which they had roughly protected with bags of mails, clothing, &c. The rest of the regiment—about 600—had been attacked in their camp under the kopje. For some reason or another these men had camped at the foot of the kopje and had fought there instead of on the top, although some men were posted there also. At reveille the Boer guns had shelled them and had thus got them most completely, shelling them out of rifle range, or nearly so, and as the Derbys had no gun they were completely at the mercy of the Boers. These men gave it up by 10 A.M. During this attack one Boer gun was engaging the station, but the Derbys remained behind their improvised defences and did not attempt to come out in extended order and capture the gun. At about 11 A.M., when the main body had capitulated, the Boers brought up another gun and shelled the station, which capitulated about 12 o'clock. It was then we drew into the dip, as we thought the gun was being trained on us. As soon as the firing had ceased we marched to the station, although De Wet had not sent orders for us to move, where we found General De Wet, Commandant Faurie, and about 200 Boers. I am sorry I am not of a literary turn of mind, so that I might adequately describe to you a scene which none of us are likely to forget. The bags of clothing, mails, provision boxes, indeed anything which would answer the purpose, had been piled up between the station sheds to form a defence against the shells. The railway trucks were splintered and in places shattered by shell and rifle bullet. The Boers were busily engaged in looting. About 2000 mail bags were being torn open, and letters, parcels, and all conceivable things were scattered out, being tossed from hand to hand and duly investigated. Warm clothing and blankets seemed to attract special attention, most of the Boers carrying off some. Cigarettes, tobacco, socks, cocoa, and milk, and luxuries of all kinds simply littered the place. On the siding were heaps of shells of all kinds, huge lyddites of 280 lb. each, many howitzer shells, shrapnel, solid armour-piercing, and various others. In the tin sheds and behind the improvised defences were the dead and wounded, eight dead, including Colonel Baird Douglas. These were buried by the Derby prisoners before they were marched off, but there was no time for any formal funeral. I saw the graves subsequently neatly marked out with stones by our own men after Methuen's arrival on June 11th. The wounded (14) had been dressed with the first field dressing. This had been done by the Boer doctor, Commandant Faurie's son. I visited all these and saw that they were as comfortable as circumstances permitted. I heard then that there were many wounded in the Derbys' camp about two miles off on the other side of the river below the kopje. I at once arranged with Major Hale that the bearer company should remain at the station and bring on the wounded in the ambulances, while I went on to the camp and pitched the hospital. Commandant Faurie gave me permission to advance, and without delay the hospital moved forward to the drift across the Rhenoster, towards which also the Boers were moving with their buck wagons and guns. The guns, by the way, were some of our own which they had captured some time previously. I rode with a lieutenant who discussed the war with me, and was quite friendly, as, indeed, I found all the Boers were during the time we remained in their hands. Arrived at the river I found four bullock wagons were coming over and that many of the Boer wagons were ahead of our convoy. This necessarily meant a very long delay in our reaching the camp, a delay which might have serious consequences for the poor fellows whom we were hastening to help. On my representing this to the commandant he at once stopped the wagons and allowed all the hospital transport to pass over first. As soon as my first tin wagon, which contained our dressings, &c., had safely crossed the drift I rode on to the camp leaving the others to follow. The full extent of the disaster was now apparent—huts were riddled with bullets, ammunition, papers, provisions, clothing, were all scattered about, and were being turned over by the Boers. In the centre of the camp the dead, dying, and wounded Derbys were collected together, some moaning with pain, others crying for water, and the least severely wounded smoking and doing what they could for the less fortunate. I at once gave orders to have the dead removed to a tent, that those in pain should be given morphia, and that one of our marquees should be pitched as an operating tent, and all things prepared. The Boer commandant told me I might take any tents I liked for hospital purposes, and eventually we were allowed to keep all the huts, although they had intended to burn some of them. The Derby men were delighted at our arrival, and it is not too much to say that so far as the wounded were concerned we saved the situation, for they had but one doctor (Dr. Buchanan, a civil surgeon), who had not the appliances which were necessary, nor, indeed, could he have done the work single-handed, for we found nearly 100 wounded, many of them requiring operations. Dr. Buchanan had dressed most of the cases, and had done everything in his power to give relief.

"Meanwhile Hale was busy at the station. In order to accommodate the wounded we had to throw out of the wagons most of our provisions—a very serious matter, as we had started from Kroonstadt with only enough for four days and we did not know when we could get any more under present circumstances. Hale saw De Wet and represented to him the difficulty we might be in. De Wet at once gave Hale permission to load an empty railway-truck with food, milk, and, indeed, anything he might require. This was done and the truck was moved about a quarter of a mile along the line towards the Rhenoster. Unfortunately it was blown up with the station, the Boers evidently thinking that the bearer company had taken with them all we needed, whereas they had moved on with the wounded first and intended to return for the food immediately on arriving at the Derbys' camp, and finding out about the mishap to the truck Hale collected all the food he could find and set about arranging matters in the camp.

"By this time we were hard at work with the wounded and operations and dressings went on till far into the night, when we all went to bed thoroughly tired. My tent was riddled with bullets and splashed with blood. The next two days we were again all very hard at work in the hospital, but I need not recount to you the horrors of the operating tent. I will only say that we found our equipment most excellent. We had all we wanted and more, and everyone was delighted with the facilities we had for carrying on our work.

"On June 8th many Boers came to see us, and Commandant Duplovy came into the theatre while an operation was going on. He expressed much surprise at our arrangements and was so impressed with the work being done that he at once gave an order that no Boers were to come along the sick lines for fear of disturbing the wounded and hampering our work. I may say at once that the Boers behaved most admirably throughout, asking for next to nothing, not taking that unless permitted by us, and, as you will see if you read on, giving us much.

"I went out to see General De Wet, accompanied by Lieutenant H. Langman of the Langman Hospital, who had come up with us from Bloemfontein, and escorted by Du Wit (De Wet's secretary), Steyn, a relation of the late President, and his son. At last De Wet came—a man of powerful physique, but with weak eyes which necessitated his wearing tinted glasses in the sun, a good face, and one showing, as I thought, shrewdness and determination, a quiet, kindly manner, and the general bearing of a gentleman. He shook hands cordially, and not speaking more than a few words of English, asked me through Du Wit what he could do for me. I asked him to send my casualty list and some telegrams (one to you—did you get it?) if he had the opportunity. This he agreed to do. I also asked for a safe conduct for a sick convoy to go to Kroonstad, but he said that at present he could not accede to this but would give me one in a few days. He also said that I might come to him when I wished to, only accompanied by an orderly with a white flag. We then left him and were allowed to go right across the Boer laager, so that we had an excellent chance of seeing a good deal. I forgot to say that as soon as the bearer company had left Roodeval station on June 7th the Boers fired it. All that night the most terrific explosions took place, and these recurred at intervals until June 11th, at about 9 A.M., so that no one was allowed to go anywhere near the station. The wreck of this was complete and astonishing. The situation was merely marked by holes made by the lyddite shells, and the veldt for about half a mile round was littered with burnt clothes, blankets, mail bags, letters, parcels, unexploded shells, fragments of shells, and of the station buildings. Anything more desolate it is difficult to imagine."

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### NOTES FROM BLOEMFONTEIN.

(FROM OUR SPECIAL CORRESPONDENT.)

Bloemfontein is now a healthy station, while the tonic and bracing qualities of its climate render it most suitable for convalescents, to which class a large majority of the patients in the military hospitals belong. Cases of enteric fever in the garrison are now rare, and the few brought down the line from the north are of a mild type or convalescent. Sporadic cases of catarrhal dysentery are still frequent, but the ulcerative form is seldom seen, and as a matter of fact was never truly epidemic. Notwithstanding the sudden fall of temperature at sundown and the cold nights, bronchitis, pneumonia, and acute rheumatism are uncommon, though many cases of sub-acute and muscular rheumatism have lately been admitted from the front. A very large number of cases of "simple continued fever," "diarrhœa," "diarrhœa and debility," have been admitted to the various hospitals since the occupation; many of these, I think most, were probably cases of mild, ambulatory, or aborted attacks of enteric fever, and had they been so diagnosed the subsequent official statistics would show a strikingly low mortality for an army in the field—probably the lowest on record. An experienced medical officer in charge of the medical division of one of the general hospitals informs me that he kept notes of 1000 consecutive cases admitted into his division during the epidemic. Of this number over 100 had been sent in as "simple continued fever," "diarrhœa," &c., but, in his opinion, they were undoubtedly cases of enteric fever. The mortality in the 1000 cases was only a little over 12 per cent., a low one compared with the ratio in civil hospitals at home, and strikingly low compared with the ratios of the American and other armies. It must be admitted that the diagnosis of mild cases of enteric fever, especially of the ambulatory form, often presents almost insuperable difficulties out here; some cases of fever are very difficult to classify, such as the so-called "veldt fever" and "African fever." Probably a few of these are cases of Malta fever and some recent serum experiments tend to support this view, but the question is hardly ripe for discussion yet. Cases of malarial fever are frequent enough, but they occur in men who have previously suffered from malaria in India and elsewhere. None have been shown to have originated in this colony.

Of the surgical cases in the hospitals at the present moment few present features of special interest and the wounded are, almost without exception, convalescent or on a fair road to recovery.

A brief sketch of the medical arrangements in Bloemfontein at the time of writing should prove of interest to your readers in the present dearth of "interesting" cases here and may be of service in removing misconceptions.

The three general hospitals (Nos. 8, 9, and 10) and the stationary hospital (No. 5) at the Raadzaal, provide a total of over 1750 beds for the reception of sick and wounded. At present these hospitals are not nearly full. The Langman Hospital and the Irish Hospital were recently sent on to the front, while the Portland Hospital has left, or is about to leave, for home. During the epidemic of enteric fever bell-tent annexes to No. 8 and No. 9 General Hospitals were established and were employed for convalescent patients, who spent a few days there before proceeding to the convalescent or rest camps. The system worked so well that there was never the slightest overcrowding of the marquees or bell-tents. No. 8 General Hospital, a marquee hospital, occupies an excellent site on the veldt about a mile to the south-west of the town. No. 9, also a marquee, is pitched on a gentle slope about half a mile to the north-east, between the large kopje known as "Bloemfontein mountain" and the railway, and has the advantage of a special railway siding running into the camp. No. 10 is distributed amongst various buildings in the town, Grey's College, Dames' Institute, St. Michael's Home, Industrial House, and the Volks Hospital. These three hospitals, No. 8, No. 9, and No. 10, provide 1650 beds now and have surplus beds, marquees, and equipment sufficient to increase the accommodation to over 1800. No. 5 Stationary Hospital occupies the Raadzaal (House of Parliament), is fully equipped for 100 patients, and is a model of what military medical organisation can do at short notice.

The "convalescent camp"—a distinct establishment not to be confounded with the bell-tent annexes of the general hospitals—is situated on the veldt behind the fort to the south of the town; here men who are practically well, but debilitated, remain till they are fit for duty, when they are transferred to the large "rest camp" close to the station, whence they are sent back to their units or to garrison duty. The convalescent camp is in charge of a commandant and two medical officers and has a large detention ward.

Saloon trains with lying-down accommodation and medical comforts, with a medical officer in charge of each, and hospital trains—fully equipped hospitals on wheels—leave periodically for Cape Town, carrying men who are convalescent but who are unlikely to prove efficient soldiers within a reasonable period.

On the whole the arrangements for the treatment of the sick and wounded are wonderfully complete and have borne the strain of the recent epidemic with conspicuous success. As regards the alleged overcrowding of field hospitals before the establishment of general hospitals I have no personal knowledge and in any case I would refrain from comment as the matter is *sub judice*. The same remark applies to the allegations as to defects of transport, as regards which, however, it is permissible to point out that transport arrangements are not under the control of the Royal Army Medical Corps.

July 27th, 1900.

# Public Health and Poor Law.

## LOCAL GOVERNMENT DEPARTMENT.

### REPORTS OF MEDICAL OFFICERS OF HEALTH.

*The City of London.*—In relation to its resident, or what may be termed its night, population the City of London possesses altogether a unique interest. Much of this is doubtless due to the traditions and associations of the corporation and to the fact that the City embraces within its limits many historical and world-influencing institutions; but although looked at in contrast with the civic grandeur of the City its sanitation may be regarded by some as holding but a secondary position, there is occupying the

City by day an enormous population the environment of which is a matter of grave concern not only to the City but to the country as a whole. Moreover, there are in one or another of the 113 parishes which make up the sub-districts of St. Botolph, Cripplegate, St. Sepulchre, and All Hallows, Barking, food-distributing centres, such as Billingsgate and the London Central Meat Market, the proper control of which is a matter of considerable importance to the vast population in and around the metropolis. It is from considerations such as these that the position of the medical officer of health of the City is no mere sinecure but carries with it enormous responsibilities. The general death-rate of the City during 1899 was 18·5 per 1000 as against 19·8 for the metropolis and 20·2 per 1000 for the 33 great towns, but in the absence of a proper correction for age and sex distribution these figures for the City do not afford much indication of its sanitary condition, and the same remark, of course, applies to the other City rates. It is of interest, however, to note that of the City deaths 6·56 per cent. were the result of injury or violence, a rate which is 1·96 below the average for the previous five years. This may be regarded, perhaps, in one sense as a tribute to the City police. In the matter of public lavatories the City is relatively to other districts well provided, there being 24 such conveniences, and it is satisfactory to be able to record that the accommodation for women includes 33 water-closets. Dr. Sedgwick Saunders furnishes in his report a map of the City, showing among other things the lavatories in question, and it might prove advantageous if these maps were exhibited in certain convenient situations. There is no doubt that as regards public lavatories England is behind many other European countries. Some idea of the meat-supplies dealt with in the City may be gathered from the fact that during 1899 there was delivered at the corporation markets, Smithfield, over 405,456 tons of meat—the average supply per diem being 1321 tons, and the largest monthly supply being in December. Of the amount in question during 1899, 27·3 per cent. was "country killed" (including American meat killed at Birkenhead); 15·5 per cent. "town killed" (including American and continental cattle slaughtered at Deptford), 14·2 per cent. "foreign killed," 23 per cent. "American killed," and 20 per cent. "Australian and New Zealand killed." The most noteworthy feature of the year's statistics in this sense is the marked increase in the American and foreign deliveries. Dr. Sedgwick Saunders points out that the figures tell two tales: firstly, that London depends more than heretofore upon her dead-meat supply, and, secondly, that as the sources of supply become more and more distant the risk of decomposing meat arriving in the market is increased. The latter fact would seem to point to the necessity of some sort of preservation whether by cold or chemicals. But more rapid transit might, perhaps, modify matters a little. Upon the question of tuberculous meat Dr. Sedgwick Saunders takes a firm stand and he disagrees *in toto* with the views of certain veterinary surgeons to the effect that unless the whole mass of muscular tissue shows signs of degeneration the meat may be eaten with impunity if properly cooked. The medical officer of health of the City will have nothing to do with the thesis of "localised tuberculosis"—a proposition which he regards as based upon "the inexcusable ignorance of the elementary principles of physiological induction," and, in his opinion, "no competent pathologist would dare to assert that where pathogenic organisms have once entered the body of an animal one part of its anatomy (the muscles) is free from infection, and another part (the viscera) infected." But we expect the tendency of opinion to which Dr. Sedgwick Saunders refers may have its origin to some extent in the report of the Royal Commission on the Administrative Control of Tuberculosis which reported in 1898. The seizure of diseased and unsound meat during 1899 amounted to no less than 1172 tons, the largest amount on record. Importation of rabbits into this country is on the increase, and last year Australia and New Zealand furnished over 2,000,000 of these animals. They are imported in crates, and as many as 20,000 have been daily received, their frozen state rendering it difficult to ascertain their precise condition, and Dr. Sedgwick Saunders states that at times as many as 20 per cent. are unsound. As regards fish 179 983 tons were received at, or near, Billingsgate during 1899, the amount condemned being 0·42 per cent. There would appear to be a house-to-house inspection in progress throughout the City, and the result of such progress should be interesting reading. There must be much antiquated property within the boundaries, and it is to be expected that the housing of the day population leaves in certain instances much to be desired.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

In 33 of the largest English towns 6014 births and 4520 deaths were registered during the week ending August 11th. The annual rate of mortality in these towns, which had increased from 14·5 to 20·5 per 1000 in the five preceding weeks, declined again to 20·3 during the week under notice. In London the death-rate was 20·5 per per 1000, while it averaged 20·2 in the 32 provincial towns. The lowest death-rates in these towns were 11·2 in Burnley, 11·9 in Halifax, 12·1 in Cardiff, and 12·2 in Bradford; the highest rates were 25·6 in Brighton, 26·1 in Sheffield, 26·3 in Liverpool, and 26·8 in Preston. The 4520 deaths in these towns included 1263 which were referred to the principal zymotic diseases, against numbers increasing from 346 to 1330 in the five preceding weeks; of these 1006 were referred to diarrhœa, 84 to whooping-cough, 65 to diphtheria, 64 to measles, 23 to scarlet fever, and 21 to "fever" (principally enteric). The lowest death-rates from these diseases occurred in Cardiff, Blackburn, Halifax, and Bradford, and the highest rates in West Ham, Norwich, Liverpool, Salford, and Sheffield. The greatest mortality from measles occurred in Brighton and Derby, from scarlet fever in Blackburn; from whooping-cough in Brighton and Bolton; and from diarrhœa in West Ham, Norwich, Liverpool, Salford, and Sheffield. The mortality from "fever" showed no marked excess in any of the large towns. The 65 deaths from diphtheria included 25 in London, nine in Sheffield, seven in Leeds, four in Leicester, and four in Liverpool. No fatal case of small-pox was registered during the week under notice in any of the 33 large towns. There were five small-pox patients under treatment in the Metropolitan Asylums Hospitals on Saturday August 11th, against numbers decreasing from 17 to seven at the end of the four preceding weeks. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1838, against 1877, 1859, and 1827 on the three preceding Saturdays; 155 new cases were admitted during the week, against 222, 207, and 156 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 196 and 136 in the two preceding weeks, further declined during the week under notice to 128, and were 47 below the corrected average. The causes of 56, or 1·2 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Bolton, Oldham, Bradford, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in West Ham, Birmingham, Liverpool, Salford, and Sheffield.

In 33 of the largest English towns 7074 births and 4346 deaths were registered during the week ending August 18th. The annual rate of mortality in these towns, which had been 20·5 and 20·3 per 1000 in the two preceding weeks, further declined to 19·5 last week. In London the rate was 19·4 per 1000, while it averaged 19·6 in the 32 provincial towns. The lowest death-rates in these towns were 12·7 in Bristol, 13·0 in Huddersfield, 13 8 in Burnley and in Bradford, and 14·0 in Cardiff; the highest rates were 23·6 in Salford, 23·9 in Sheffield, 24·2 in Manchester, and 25·0 in Norwich and in Liverpool. The 4346 deaths in these towns included 1061 which were referred to the principal zymotic diseases, against 1330 and 1263 in the two preceding weeks; of these 797 resulted from diarrhœa, 90 from whooping-cough, 62 from measles, 59 from diphtheria, 35 from "fever" (principally enteric), and 18 from scarlet fever. No fatal case of any of these diseases occurred last week in Huddersfield; in the other towns they caused the lowest death-rates in Bristol, Burnley, Halifax, Oldham, and Blackburn, and the highest rates in West Ham, Leicester, Sheffield, and Hull. The greatest mortality from measles occurred in Brighton and Swansea; from whooping-cough in West Ham, Nottingham, and Derby; from "fever" in Portsmouth, Swansea, and Halifax; and from diarrhœa in West Ham, Leicester, Salford, Sheffield, and Hull. The mortality from scarlet fever showed no marked excess in any of the large towns. The 59 deaths from diphtheria included 17 in London, 8 in Leicester, 7 in Leeds, and 6 in

Sheffield. No fatal case of small-pox was registered in any of the thirty-three large towns; and only three small-pox patients were under treatment in the Metropolitan Asylums Hospitals on Saturday last, August 18th. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1793, against 1827 and 1838 on the two preceding Saturdays. 157 new cases were admitted during the week, against 207, 156, and 155 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 136 and 128 in the two preceding weeks, rose again last week to 132 but were 35 below the corrected average. The causes of 47, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, and in 11 other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Liverpool, Manchester, Halifax, and Leeds.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·5 and 17·2 per 1000 in the two preceding weeks, further declined to 17·0 during the week ending August 11th, and was 3·3 per 1000 below the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·3 in Paisley and 13·7 in Dundee to 19·9 in Leith and 24·0 in Greenock. The 526 deaths in these towns included 60 which were referred to diarrhœa, 27 to whooping-cough, 11 to measles, five to "fever," three to scarlet fever, and one to small-pox. In all 107 deaths resulted from these principal zymotic diseases, against 87 and 109 in the two preceding weeks. These 107 deaths were equal to an annual rate of 3·5 per 1000, which was 2·2 per 1000 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 36 and 60 in the two preceding weeks, were again 60 during the week under notice, and included 39 in Glasgow, seven in Edinburgh, six in Greenock, and four in Dundee. The deaths from whooping-cough, which had been nine and 12 in the two preceding weeks, further rose during the week under notice to 27, of which 19 occurred in Glasgow, three in Dundee, two in Edinburgh, and two in Greenock. The fatal cases of measles, which had been 24 and 19 in the two preceding weeks, further declined to 11 during the week under notice, and included eight in Glasgow and two in Edinburgh. The deaths referred to different forms of "fever," which had been six and 11 in the two preceding weeks, declined again during the week under notice to five, of which four were registered in Glasgow. The three fatal cases of scarlet fever showed a slight decline from recent weekly numbers and included two in Glasgow, where the death from small pox was also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 67 and 73 in the two preceding weeks, declined again during the week under notice to 52, but were slightly in excess of the number in the corresponding period of last year. The causes of 23, or more than 4 per cent., of the deaths in these eight towns were not certified.

The annual rate of mortality in the eight Scotch towns, which had declined from 19·0 to 17·0 per 1000 in the four preceding weeks, further declined to 16·9 during the week ending August 18th, and was 2·6 per 1000 less than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·7 in Dundee and 13·9 in Leith to 19·1 in Glasgow and 21·9 in Perth. The 523 deaths in these towns included 56 which were referred to diarrhœa, 18 to whooping-cough, 16 to measles, seven to diphtheria, six to scarlet fever, and five to "fever." In all 108 deaths resulted from these principal zymotic diseases, against 109 and 107 in the two preceding weeks. These 108 deaths were equal to an annual rate of 3·5 per 1000, which was 1·3 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 60 in each of the two preceding weeks, declined last week to 56, of which 31 occurred in Glasgow, seven in Dundee, six in Edinburgh, and five in Aberdeen. The deaths from whooping-cough, which had increased from nine to 27 in the three preceding weeks, declined again to 18 last week, and included 13 in Glasgow and two in Aberdeen. The fatal cases of measles, which had declined from 24 to 11 in the three preceding weeks, rose again last week to 16, of which 13 were registered in Glasgow and two in Edinburgh. The deaths from diphtheria, which had been five and none in the two preceding weeks, rose again to seven last week, and included three in Edinburgh and two in Aberdeen. The six fatal cases of scarlet fever showed an increase of three over the number in the preceding week, and included four in Glasgow. The deaths referred to different forms of "fever," which had been 11 and five in the two preceding weeks, were again five last week, and were all recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 80, 67, and 52 in the three preceding weeks, rose again last week to 59, and were slightly above the number in the corresponding period of last year. The causes of 16, or more than three per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 18·3 and 24·0 per 1000 in the two preceding weeks, declined again to 23·0 during the week ending August 11th. During the past four weeks the death-rate in the city has averaged 22·2 per 1000, the rate during the same period being 19·4 in London and 16·8 in Edinburgh. The 154 deaths belonging to Dublin registered during the week under notice were seven below the number in the preceding week, and included 23 which were referred to the principal zymotic diseases, against five and 14 in the two preceding weeks; of these 19 resulted from diarrhœa, three from diphtheria, one from whooping-cough, and not one either from small-pox, measles, scarlet fever, or "fever." These 23 deaths were equal to an annual rate of 5·2 per 1000, the zymotic death-rate during the same period being 5·6 in London and 2·1 in Edinburgh. The deaths from diarrhœa, which had been four, four, and nine in the three preceding weeks, further rose during the week under notice to 19. The three fatal cases of diphtheria exceeded the number recorded in any previous week. The 154 deaths in Dublin last week included 45 of infants under one year of age and 28 of persons aged upwards of 60 years; the deaths of infants exceeded the numbers in the preceding week, while those of elderly persons showed a decline. 10 inquest cases and five deaths from violence were registered; and 57, or more than a third, of the deaths occurred in public institutions. The causes of six, or nearly 4 per cent., of the deaths in the city were not certified.

The death-rate in Dublin, which had been 24·0 and 23·0 per 1000 in the two preceding weeks, further declined to 21·2 during the week ending August 18th. During the past four weeks the death-rate in the city has averaged 21·6 per 1000, the rate during the same period being 20·3 in London and 16·2 in Edinburgh. The 142 deaths belonging to Dublin registered during the week under notice showed a decline of 12 from the number in the preceding week, and included 28 which were referred to the principal zymotic diseases, against five, 14, and 23 in the three preceding weeks; of these, 24 resulted from diarrhœa, three from "fever," one from whooping-cough, and not one either from small-pox, measles, scarlet fever, or diphtheria. These 28 deaths were equal to an annual rate of 4·2 per 1000, the zymotic death-rate during the same period being 4·4 in London and 2·1 in Edinburgh. The fatal cases of diarrhœa, which had been 4, 9, and 19 in the three preceding weeks, further rose to 24 last week. The three deaths from "fever" were in excess of the numbers recorded in recent weeks. The 142 deaths in Dublin last week included 37 of infants under one year of age and 30 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons exceeded the number in the preceding week. Six inquest cases and four deaths from violence were registered; and 43, or nearly a third, of the deaths occurred in public institutions. The causes of nine, or more than 6 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon J. C. Dow to the *Dædalus*. Staff Surgeons: W. J. Maillard, V.C., to the *Archer;* H. Canton to the *Tamar;* D. T. Hoskyn to

the *Jupiter*; J. Acheson to the *Warspite* for the *Phaeton*; and R. Miller to the *Arrogant*.

### IMPERIAL YEOMANRY.

14th Battalion: Sergeant Richard Galway Murray, to be Medical Officer, with the temporary rank of Captain.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Miller, Captain Riddick, and Lieutenant Gwynn are detailed for duty with the general hospital going to Ceylon for the Boer prisoners. One warrant officer and 59 men under the charge of Lieutenant W. Jagger, have embarked on the s.s. *Aurania* for South Africa. Lieutenant A. D. Jameson has joined the hospital ship *Princess of Wales* for duty.

### INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following promotion among the officers of the Indian Medical Service:—To be Surgeon-General: Colonel George William Robertson Hay, Bombay Establishment. The Queen has also approved of the retirement from the service of the under-mentioned officers:—*Bengal Establishment:* Colonel John Henry Newman. *Madras Establishment:* Surgeon-General Charles Sibthorpe, C.B., and Lieutenant-Colonel James William Evans.

### VOLUNTEER CORPS.

*Artillery:* 1st Essex (Eastern Division, Royal Garrison Artillery): Surgeon-Lieutenant C. Forsyth to be Surgeon-Captain. 1st Renfrew and Dumbarton: Surgeon-Captain W. R. Sewell to be Surgeon-Major. *Royal Engineers* (Volunteers): 1st Sussex: Surgeon-Captain W. P. Morgan resigns his commission. *Rifle:* 1st Volunteer Battalion the Lincolnshire Regiment: Surgeon-Lieutenant J. W. Nicholson to be Surgeon-Captain. 9th Lanarkshire: Surgeon-Lieutenant T. W. Banks to be Surgeon-Captain.

### VOLUNTEER OFFICERS' DECORATION.

The Queen has conferred the Volunteer Officers' Decoration upon the undermentioned officers of the Volunteer Force:—*Home District: Rifle:* 4th Volunteer Battalion the East Surrey Regiment: Surgeon-Lieutenant-Colonel Edmond James Lawless. *North-Western District: Engineers:* 1st Flintshire (Buckley) Royal Engineers (Volunteers): Surgeon-Major Robert Thomas Alexander O'Callaghan. *Rifle:* 2nd Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Major Charles Henry Gwynn. 2nd Volunteer Battalion the Prince of Wales's (North Staffordshire Regiment): Surgeon-Major Herbert John Fausset. *Western District: Artillery:* 1st Cornwall (Duke of Cornwall's) Volunteer Artillery (Western Division, Royal Garrison Artillery): Surgeon-Lieutenant-Colonel William Mason.

### TRANSVAAL WAR NOTES.

Mr. J. Paul Bush, M.R.C.S. Eng., L.S.A., surgeon to the Bristol Royal Infirmary, who has been in medical charge of the Princess Christian Hospital, sailed from Durban on August 6th, having under his care the sick and wounded troops on the *Lismore Castle*. He is due to arrive in Bristol the first week in September.

The Welsh Hospital is now completely established at Pretoria after its transfer from Springfontein, and 122 patients were admitted on August 14th. At a meeting of the executive committee of the hospital held on August 15th it was decided to erect memorial crosses over the graves of those members of the staff who had died at Springfontein.

Of the 180 invalid soldiers from South Africa who arrived in Plymouth last week only 38 are being treated at the Military Hospital, Devonport. The remainder have been sent to the Raglan Barracks, Plymouth, and when outfits can be procured for them from their respective depots they are to be sent on sick furlough.

The Lady Georgiana Curzon has received a cable from Lady Roberts, stating that her ladyship had opened the Imperial Yeomanry Branch Hospital at Pretoria, and concluding with the words "everything is perfect." Surgeon-Major C. R. Kilkelly of the Grenadier Guards, principal medical officer to the hospital, cables that a convoy of 100 sick and wounded was hourly expected to arrive at the hospital, and that everything was in excellent order for their reception. Major Stonham, R.A.M.C., of the Imperial Yeomanry Field Hospital, reports that he had up to July 20th treated 312 cases.

Major Stonham, with the field hospital and Imperial Yeomanry bearer company under command of Major Hale, D.S.O., R.A.M.C., is at present engaged on active service with Colonel Mahon's force. Colonel Sloggett, commandant and principal medical officer of the Imperial Yeomanry Base Hospital at Deelfontein, reports that there are amongst other patients in this hospital (numbering over 1000) 337 of the Imperial Yeomanry, seven of whom are officers.

The following have been discharged from hospital for duty:—Lieutenant H. P. W. Barrow, R.A.M.C., Major Kirkpatrick, R.A.M.C., Captain Watson, R.A.M.C., Lieutenant Faulkner, R.A.M.C., Lieutenant R. D. Jephson, R.A.M.C., and Civil Surgeons Betts, Watson, Steele, Ekins, and Bayley.

Among those who arrived in England last week in the transport *Canada* from South Africa was Mr. Raymond Johnson who has for six months been serving with the Imperial Yeomanry Hospital.

The Queen paid a visit to the convalescent homes at East Cowes on August 21st and also on August 22nd. The men being treated there visited Osborne and were conducted over the palace. Subsequently they were entertained to tea in the servants' hall.

### THE CRISIS IN CHINA.

The American hospital ship *Maine*, entirely equipped and maintained by a committee of American ladies in London, has now been sent to China after her six months' work in South Africa. Her expenses on this new mission will be greater than hitherto, but it is hoped that she will be as generously supported. The *Maine* will receive American, English, and other sick and wounded. The following subscriptions have been received since August 3rd, 1900:—Baron Alphonse de Rothschild, £100; Mr. M. P. Grace, £50; Miss Elena M. Grace, £50; Mrs. Adair (two months' subscription). £40; collected on White Star s.s. *Cymric*. £30 13*s.* 6*d.*; Mr. Jules Porges, £26 5*s.*; Mr. Ferdinand Bischoffsheim, £10; and Lady Stanley Clarke, £2. Subscriptions may be sent to Mrs. Adair at the headquarters, 30, Curzon-street; Mrs. Arthur Paget, 35, Belgrave-square; Mrs. Bradley Martin, 4, Chesterfield-gardens; and to the honorary treasurer, Mrs. Ronalds, 7, Cadogan-place, S.W.

### VOLUNTEER AMBULANCE SCHOOL OF INSTRUCTION.

The autumn classes for the training of stretcher bearers will commence on October 4th, 1900, at 7.40 P.M., at the headquarters of the London Rifle Brigade, 130, Bunhill-row, E.C., by permission of Lieutenant-Colonel E. Matthey, commanding the London Rifle Brigade. There will be the usual class for new members and also a class for passed members under the charge of Surgeon-Captain E. M. Callender, Prince of Wales's Own, 12th Middlesex (Civil Service) V.R., and Surgeon-Lieutenant G. A. Cohen, 1st Volunteer Battalion Middlesex Regiment. Officers, non-commissioned officers, and men will be admitted to the classes on presentation of application forms properly endorsed by their adjutant or captain. Application forms can be obtained from the honorary secretaries, from Ambulance-Sergeant H. J. Bussell, 13, Gower-street, W.C., and from Ambulance-Corporal E. G. Davies, 1, Lombard-court, E.C., or at the office of the school, 8, Portman-street, W.

### THE RELIEF OF KUMASI.

Public attention has been so exclusively drawn to the stirring events which have been taking place in China and South Africa that those connected with Ashanti have failed to attract the attention which they deserve, for the services of our officers in that unhealthy climate have been heroic. Major Morris, for example, although he was badly wounded, displayed great courage and fortitude and did some brilliant work with his small native force under the most trying circumstances. In addition to an insufficient amount of food-supply and ammunition the force suffered a good deal from sickness (mainly fever and dysentery) as the result of their long march in the rainy season through the forest jungle and they had too a good deal of fighting on the way. Major Morris's small force of Haussas had lost one officer and 80 men on their arrival at Cape Coast Castle.

### DEATHS IN THE SERVICES.

Deputy Inspector-General John Burton St. Croix Crosse on August 21st at Leigh House, Surbiton, aged 85 years. He entered the Army in 1840 and served with the 11th Hussars during the Eastern campaign of 1854-55 (medal with four clasps, Turkish medal, and the Legion of Honour).

### THE SOUTH AFRICAN ROYAL COMMISSION.

The Commissioners have resumed work at Cape Town, where several witnesses have been examined. Woodstock and Greenpoint have been visited.

# THE BRITISH MEDICAL ASSOCIATION.

## MEETING AT IPSWICH.

## THE SECTIONS.

### SURGERY.

THURSDAY, AUGUST 2ND.

*Lateral Curvature, Knock-knee, and Flat-foot.*

IN the absence of Mr. ARBUTHNOT LANE (London) this discussion was opened by Mr. JACKSON CLARKE (London). After defining the meaning of the terms the scope within which the discussion should be limited was then suggested. It was only when these three deformities were considered as *habitual pressure deformities* that they could profitably be compared. Thus cases of lateral curvature due to paralysis or consecutive to empyema, &c., and instances of knock-knee or of flat-foot due to severe arthritis, need not be considered save for purposes of comparison. By a habitual pressure deformity was meant a deviation from the normal form caused by the force of gravity acting on the ligaments and bones owing to the preponderating use of one to the exclusion of other attitudes. In certain circumstances a *habitual posture* was gradually converted into a *deformity*. As applied to the subjects under discussion Mr. Clarke observed that the majority of cases of lateral curvature arose from faulty attitudes assumed by school-children when sitting at a desk, especially during writing. Knock-knee and flat-foot arose in what Annandale had termed the "attitude of rest," as seen, for instance, in the apprentice who stood with the feet everted and somewhat widely separated. The main point for discussion might be formulated thus: "To what extent do pathological processes enter into the causation of pressure deformities?" The danger in giving names was that they might be misinterpreted. The term "pressure deformity" originated in Germany with Roser and Volkmann and Mr. Clarke thought it was as good a one as could be found; at the same time he strongly believed that in the vast majority of cases of these deformities there was something more than the force of gravity and a habitual attitude at work. There was, he believed, a pathological predisposing cause to be found in nearly every case at the time of the development of the deformity. Healthy children did not long remain in any one posture. According to Danish observers about 1½ per cent. of school-children became affected with lateral curvature. According to German observers about 90 per cent. of school children assumed abnormal spinal postures during writing. Why did not more than a fraction of those who assumed faulty attitudes become deformed? Mr. Clarke had no hesitation in expressing his belief that it was only those who suffered from some abnormal softness of ligament and bone who became affected by these pressure deformities. Slight rickets and an inherited tendency to rheumatoid arthritis were the two chief causes of this diminished resisting-power of the skeleton and ligaments. These same two affections were, he believed, the chief causes of naso-pharyngeal adenoid vegetations which played no small part in the production of deformities of the chest. If this contention were correct the physician could do much towards the prevention of pressure deformities by insisting on a rational diet for children. If all school-children could have an abundance of fresh—i.e., unboiled and unsterilised—milk cases of deformity of this class would be diminished and, he believed, almost abolished. Failing a safe milk-supply raw eggs or raw meat might be substituted. In comparison with this broad prophylactic or medical aspect of the matter the strictly surgical aspect was unimportant; to the individual patients, however, proper surgical treatment was of the highest moment. Mr. Clarke then reviewed muscular training, instrumental, and operative treatment. Seeing that the majority of the patients who came for treatment during the course of development of the deformity required supervision on an average for a period of two years he found that routine courses of special gymnastic treatment of two or three months' duration were less effectual than simple exercises devised for each patient and practised at home under the supervision of the patient's medical adviser. Of instruments some form of the rigid splint was of most service: in flat-foot an outside leg-iron, in knock-knee an outside splint or iron, and in lateral curvature a posterior support with lateral plates. At some children's hospitals it was still recommended that for these deformities the patients should be taken "off their feet" for a year or more. Save for rare complications this was not necessary. All these conditions could be treated successfully on the ambulant plan and thus no interference with the course of education was involved. There was room for much improvement in this department, an improvement that, in Mr. Clarke's opinion, could only be brought about by arranging for a more systematic scheme of teaching orthopædic surgery in the medical schools.

FRIDAY, AUGUST 3RD.

*The Use of Roentgen Rays in Surgery.*

Mr. J. MACKENZIE DAVIDSON (London) gave an account of the recent progress in this direction. He showed that a single skiagram was often very misleading, as the relative position of parts might be completely misrepresented. He now took two photographs with the Crookes's tube in different positions, about two and a half inches apart. These two pictures differed slightly from one another and they were combined by a Wheatstone's stereoscope so that one mental image was obtained in which the relative depths of objects could be distinguished. He had also been able to adapt the stereoscopic method to the fluorescent screen by employing two Crookes's tubes, which were alternately eclipsed, and the eyes of the observer were correspondingly shut out from a view of the screen. (A demonstration of this important step in stereoscopic radiography was afterwards given by Mr. Davidson.)

*The Open Incision for Club-foot, its Indications and Abuses.*

Dr. A. M. PHELPS (New York) read a paper on this subject. In 1878 Dr. Phelps performed his first operation by open incision on a relapsed club-foot and since that date he had operated on 1650 cases. In the last 700 cases he had not performed a single osteotomy and the mortality of the whole 1650 had been *nil*. Up to the age of four months it was unnecessary to do more than attempt to straighten the foot by the employment of the surgeon's hands and the use of adhesive strapping, but if the fourth month had passed and the foot refused to straighten then the surgeon should perform subcutaneous tenotomy, dividing first those tendons which were most tense. The tendo Achillis generally first needed division. It was only after tenotomy had failed that any open operation should be considered. The soft parts were really responsible for all forms of congenital talipes and the complete division of any restricting band would nearly always suffice for the straightening of the foot. The incision was made on the inner side of the foot from just in front of the internal malleolus to the neck of the astragalus. The foot was then wrenched into an over-corrected position and fixed in that position. The most important structure to divide was the anterior limb of the deltoid ligament. In most cases the wound filled up with blood-clot which organised. If, however, as occasionally happened, it were found impossible to get the foot straight an osteotomy might be done, the simplest being division of the neck of the astragalus, or, if that were not sufficient, a wedge-shaped piece of the os calcis might be removed. Very rarely indeed it might be necessary to amputate and then Pirogoff's operation should be performed. The results of the open incision could not be surpassed by any other method of treatment and much time was saved.

Mr. JACKSON CLARKE (London) said that he would much like to see the present condition of Dr. Phelps's earlier cases. He considered that treatment should guide the growth of the foot, and by manipulation with one or two tenotomies it was possible to make any congenital club-foot into a perfect foot in two or three years.

Mr. A. H. TUBBY (London) did not consider Dr. Phelps's operation a good surgical procedure. The scar filling the gap on the inner side of the foot must contract and cause a return of the deformity which would then be irremediable. The results of the mechanical treatment were, in his opinion, better than those obtained by any other method.

Mr. NOBLE SMITH (London) thought that if all cases which could be treated by manipulation and tenotomy were excluded none would be left for the more severe operations. He considered that Dr. Phelps's operation would leave a very inelastic foot.

Mr. CHISHOLM WILLIAMS (London) had never seen a case

in which he had considered it advisable to recommend any such operation as that described by Dr. Phelps.

Dr. PHELPS, in reply, expressed his pleasure in being criticised, but he thought that the criticisms were founded on a misunderstanding. Experience showed that the scar formed did not contract, and cases had been followed up for 12, 15, and, in one case, even for 20 years.

*The Substitution, when Practicable, of Subastragalar for Syme's Amputation.*

Mr. JONATHAN HUTCHINSON, jun. (London), read a paper on this subject. He acknowledged that the results of Syme's amputation were sometimes very good and he had seen one case in which the stump had remained in perfect condition for 22 years. For several reasons, however, union by first intention was somewhat rare in Syme's amputation and in many cases some months elapsed before the stump was healed. Mr. Hutchinson had performed the subastragalar amputation six times, five times according to Faraboeuf's method which was the best. The advantages of the subastragalar amputation over that of Syme were: (1) that the stump was some two inches longer; (2) that it gave a broader base of support; (3) that the elasticity due to the ankle movements was a marked advantage in walking; (4) that the pad of soft tissue at the end of the stump was much thicker; (5) that the arterial supply of the flap was better; and (6) that an artificial leg could be better fitted to the stump. Syme's amputation could, however, sometimes be done when the tissues were quite insufficient for the subastragalar method. For the subastragalar amputation the flap could not be too thick and it was remarkable how much movement was retained at the ankle. Sometimes it was advisable when the flap was scanty to remove the head of the astragalus.

Mr. WALTER G. SPENCER (London) agreed that the subastragalar operation should be better known and he was specially inclined to think that the operation would usefully replace Chopart's amputation.

*Observations upon Injuries to the Internal Lateral Ligament and to the Internal Semilunar Cartilage of the Knee-joint.*

Mr. JOSEPH GRIFFITHS (Cambridge) in a paper on this subject pointed out that the internal lateral ligament only prevented the giving way of the knee-joint during semiflexion. The tearing of this ligament was one of the chief causes of a "weak knee" after an injury, such as a sprain. He had devised an apparatus which prevented the separation of the femur and tibia on the inner side, and so took the place of the torn internal lateral ligament. It consisted of a band above and below the knee connected by a metal band at the back which allowed flexion. Its effect in suitable cases was frequently very marked and immediate. The internal semilunar cartilage was fixed in position chiefly by what might be called its suspensory ligament, which fastened it to the internal lateral ligament of the knee-joint. When either of these ligaments was torn the two bones might separate and the cartilage might be displaced outwards. The treatment of this condition was by an apparatus very similar to the other and the results were equally satisfactory.

Mr. NOBLE SMITH expressed his approval of the apparatus exhibited.

Dr. TURNER thought that rupture of the coronary ligament had much to do with displacement of the internal semilunar fibro-cartilage, which was liable to be rotated outwards when the knee was flexed.

Mr. JOSEPH GRIFFITHS could not agree that rupture of the coronary ligament only would allow of displacement of the cartilage.

*Three Cases in which the Superior Cervical Ganglia were Excised, with Remarks on the Operation.*

Mr. F. F. BURGHARD (London) communicated notes on these cases. The first case was one of chronic glaucoma in a woman. When the patient recovered from the anæsthetic she complained of intense pain in the head; at times it was excruciating, requiring morphia. Gradually the pain decreased but the glaucoma was in no way relieved. The best incision was in front of the sterno-mastoid and then the internal jugular vein was drawn inwards and the sympathetic was exposed. The vagus was usually not seen at all. The double operation took half an hour. Jonnesco of Bucharest performed the operation eight times for glaucoma, in all cases with much improvement of the symptoms. Mr. Burghard's second case was one in which a recurrent epitheliomatous gland caused pain in the neck and arm. The gland was excised and was found to involve the ganglion. The pain was at once removed. In the third case the patient, a man 44 years of age, had a swelling in the neck which was thought to be a gland but when it was removed it was found to be a false diffuse neuroma of the cervical sympathetic. The constant symptoms which followed removal of the superior cervical ganglion were: (1) ptosis; (2) severe pain in the head with flushing of the face; and (3) contraction of the pupil. There was neither alteration of intra-ocular tension nor change in the pulse.

Mr. WALTER G. SPENCER remarked that Jonnesco's results had been received with some hesitation. He was inclined to think that the operation might be usefully employed for some cases of severe persistent pain in the head and neck.

## OBSTETRICS AND GYNÆCOLOGY.

### FRIDAY, AUGUST 3RD.

*Post-partum Hæmorrhage: its Prevention and Treatment.*

In the unavoidable absence of Dr. W. R. DAKIN the discussion on this subject was opened by Professor J. W. BYERS (Belfast). He defined post-partum hæmorrhage as excessive hæmorrhage after labour, depending on certain pathological conditions. The amount of blood necessary to mark the case as one of post-partum hæmorrhage could not be arbitrarily defined; the case must be judged by the effect of the bleeding on the general condition of the patient and by the local conditions found. The pathological conditions leading to hæmorrhage were—(1) abnormal state of the blood and atony of the vessels; and (2) lacerations of the genital tract. The indications of predisposition to hæmorrhage were as follows: (*a*) Conditions during pregnancy: (1) history of hæmorrhage in previous labours; this was of value in two sets of cases—viz., among the poor where pregnancies succeeded each other rapidly, and among the wealthier classes where there had been over-feeding or over-drinking; (2) over-distension by hydramnion, twins, or a tumour; (3) albuminuria; and (4) extreme mental depression, as, for instance, when delivery followed soon after the death of the husband. (*b*) Conditions found during labour, such as a persistently quick pulse or a type of pains characterised by sharpness and short duration with long intervals. With regard to the influence of chloroform some obstetricians seemed inclined to regard it as predisposing to hæmorrhage, but Professor Byers thought that this was not so, at least when chloroform was given only with the pains. And although when given in full surgical quantity, as in cases of forceps, version, &c., post-partum hæmorrhage might follow, the result here was probably due rather to too rapid delivery than to the chloroform. Passing on to the question of prophylaxis Professor Byers observed that the treatment of post-partum hæmorrhage consisted mainly in its prevention, and for this purpose two points especially were to be borne in mind—viz., first, the importance of not delivering in the absence of a pain, and secondly, the necessity for careful management of the third stage. As to the first point, the case might be one of secondary inertia and the temptation to use forceps might be great, but the proper treatment was to give opium, and after a rest the pains would come on again. Or, again, they might have to do with placenta prævia, where the proper treatment was bimanual version; but this should not be followed by immediate extraction, for this would bring about precisely the two conditions he had first mentioned as leading to hæmorrhage. With regard to the management of the third stage he believed that there was some meddlesome midwifery done. The separation of the placenta should be allowed to be effected naturally, and it was bad practice to squeeze out the placenta before it had become naturally separated. Twenty minutes or more might be necessary for this purpose. Special measures of precaution when hæmorrhage was to be feared consisted in the adoption of hygienic measures during pregnancy; and chloride of calcium might be given for a short time before labour. The modes of treatment on which chief reliance was to be placed were as follows: in the first place external uterine massage; then the injection of hot salt solution. For injection it was important not to use mercurial solutions, since the vessels were open and absorption might occur very readily. The introduction of the hand into the uterus should not be resorted to unless one felt sure

that some portion of placenta or membrane had been left behind. The use of perchloride of iron was, he thought, rightly going out; it was risky and was not always of use. If these measures failed the uterus should be plugged and it should be done thoroughly. Gauze ready sterilised in tins could be obtained for this purpose. If this failed the gauze should be withdrawn, the uterus washed out, and the packing replaced; and if bleeding still went on they had to do with a very serious state of things. In one case, under these circumstances, he adopted the plan of taking hold of the cervix and drawing down the uterus, the result being satisfactory. Wounds of the parturient canal were important, as they might lead to errors of diagnosis. The uterus might then be firmly contracted while bleeding went on—a condition described in the old text-books as post-partum hæmorrhage with contracted uterus. They could be sure that with a firmly contracted uterus the bleeding was not from the placental site and they should then look for injuries. The after-treatment was the treatment of anæmia. Quiet was necessary. Saline solution was of the greatest value and intravenous injection was best, but was often very difficult to carry out single-handed, and nearly as good results followed injection into the connective tissue under the breast. This was better than injection into the rectum.

Dr. ROBERT BOXALL (London) considered that 20 ounces of blood lost constituted a pathological quantity and on this estimate the cases of post-partum hæmorrhage at the General Lying-in Hospital amounted to about 10 per cent. He had paid some attention to the subject of the collarette placenta as described by Auvard and it had seemed to him that this might have a relation to post-partum hæmorrhage. On further inquiry he found that out of 22 cases of post-partum hæmorrhage the collarette placenta was found in no fewer than 15 cases. The causation of hæmorrhage under these circumstances was not difficult to understand, because the turned-up placental edge which characterised the "collarette" placenta was very soft and friable, tearing very readily.

After some remarks by Dr. JOHN HADDON (Hawick) Mr. E. STANMORE BISHOP (Manchester) advocated greater simplification of the subject of post-partum hæmorrhage; such rare or theoretical causes as hæmophilia or the influence of the ganglion cervicale uteri should be eliminated from their teaching, and the really practical aspects of the matter dwelt upon. The most frequent cause of hæmorrhage was a tired condition of the uterine muscle, which was apt to be brought about by prolonged labour, chloroform, alcoholism, and mental depression. Venous hæmorrhage could be arrested simply by raising the foot of the bed.

Mrs. SCHARLIEB (London) mentioned that in India and other hot climates post-partum hæmorrhage was common, especially in Englishwomen exhausted by the climate, and that quinine given during labour strengthened the uterine contraction, accelerated the labour, and was also a prophylactic against hæmorrhage.

Dr. JOHN CAMPBELL (Belfast) said that the duty before them in a case of hæmorrhage was at once to get as near the source of bleeding as possible. To do this they should seize the anterior lip of the cervix and draw it well down into the vulva with a strong volsellum. This would stop or materially diminish the hæmorrhage. If the bleeding were intra-uterine they might then wash out the cavity with hot sterilised salt solution, using a flushing curette, which removed thoroughly all clots and placental débris which might have remained behind. After this the gauze-packing might be applied.

Dr. C. E. PURSLOW (Birmingham) differed from Professor Byers in that he placed plugging of the uterine cavity before the introduction of the hand as a method of treatment. He thought the latter plan should be used only as a last resource.

Dr. W. J. SMYLY (Dublin) said that Dr. Haddon had properly called attention to two striking conditions; in the first of these the uterus might be relaxed and yet no hæmorrhage take place, and if violent measures were adopted to make such a uterus contract the effect would be like flogging a tired horse, and it was better to leave it alone. This condition was sometimes met with after chloroform had been given. The second condition was that in which the uterus was firmly contracted and yet hæmorrhage was going on. Such bleeding could not come from the placental site and it was necessary to look carefully for its source. If it were a case in which forceps were applied before full dilatation of the cervix, or in which early rupture of the membranes had taken place, then the hæmorrhage was very likely to be from a torn cervix. Otherwise it might be from the vulva or the vagina. An exact diagnosis was of the utmost importance, for to go through the usual programme of uterine massage, hot douche, packing, &c., and other means of inducing contraction while bleeding was going on from other causes might lead to much loss of valuable time. With regard to prophylaxis he thought that this should go back much further than the third stage of labour; not only the tired uterus but also the diseased uterus would bleed—for example, the hæmorrhage might be due to an antecedent metritis or endometritis. Consequently from one point of view post-partum hæmorrhage in one labour might be looked upon as the punishment for neglect of asepsis in a previous labour.

Dr. HENRY BRIGGS (Liverpool) said that he had shown some time ago before the North of England Obstetrical and Gynæcological Society that drawing down the uterus would check hæmorrhage; he employed the plan of seizing the cervix with volsella forceps. He believed that Dr. Galabin had advised iodoform gauze packing before it was suggested by Dührssen and had remarked that enough gauze might be stuffed into the uterus to supply material for two ball dresses. If the uterus were drawn down in the way he had suggested while packing much less gauze would be required.

The PRESIDENT (Dr. W. S. A. GRIFFITH) endorsed Mr. Stanmore Bishop's view that the whole question ought to be simplified and believed that much had been done in this direction by the introduction of heat for the checking of hæmorrhage. The first thing was to aim at securing an empty and contracted uterus, and this was not always an easy matter. The only way to be sure about it was by introducing the hand into the uterus, and this was not to be undertaken lightly. It was to be remembered that clots as well as placental fragments might be keeping the uterus from proper contraction. He wished to emphasise the necessity of managing the third stage of labour with the patient lying on her back; this not only made the control of the uterus much easier but greatly facilitated the detection and repair of lacerations. The latter were most important; he had seen a case in which death resulted from the laceration of the vestibule during the application of the forceps. He felt sure that chloroform, when given deeply, did interfere with the power, duration, and frequency of uterine contractions. This effect was exactly the opposite of that produced by ergot; and he had for some time been in the habit of giving ergot in cases in which he was about to administer chloroform. The administration of ergot before delivery was, of course, contrary to the usual rules given in text-books, but he could testify that when used with discretion it answered very well. It must be remembered that there were times when the administration of opium, allowing the patient to sleep for several hours, would result in a stillborn child. He did not agree with a previous speaker that an approximate estimate of the heat of a douche was sufficient. On the contrary, the temperature should be regulated with the thermometer, the best temperature being from 117° to 120° F. The use of this plan would make gauze-packing very seldom necessary; he had only had to pack once since using the douche as described. If packing were required and gauze were not at hand other things would answer very well; for instance, strips of clean linen boiled and then soaked in weak perchloride of iron, if at hand, or in whisky or some other spirit. The effect of passing such strips right up to the fundus of the uterus was nearly always immediate.

After a brief reply by Professor BYERS two papers were read, one by Mrs. STANLEY BOYD (London) on the Conservative Surgery of the Tubes and Ovaries; and the other by Dr. C. E. PURSLOW, being an Account of a Case of Complete Inversion of the Uterus of Three Years' Duration.

The proceedings of the section then terminated.

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## STATE MEDICINE.

### THURSDAY, AUGUST 2ND.

*The Hygienic Aspect of the Use of Water Gas.*

Mr. J. C. MCWALTER (Dublin) read a paper on the above subject. He considered that great dangers were attached to the increasing use of water gas by many gas companies. The risk he attributed not only to leakage but also to actual osmosis through the walls of the pipe. He traced an increased mortality of deaths from carbon monoxide poisoning in towns where water gas was used. The saturation of

the ground air with carbon monoxide he thought was a cause of endemicity of such diseases as enteric fever and cerebro-spinal meningitis.

The paper was discussed by Dr. H. PECK (Chesterfield), Dr. J. C. THRESH (Chelmsford), and others.

FRIDAY, AUGUST 3RD.

*Should Municipalities provide Common Lodging-houses and Workmen's Dwellings?*

A discussion on this subject was opened by Dr. H. COOPER PATTIN, medical officer of health of Norwich. He said: "I apprehend that the reply of those of us who are medical officers of health will be in the affirmative with varying reservations. My own reply is a distinct affirmative with, however, definite limitations. About what we mean by common lodging-houses there can be little doubt, but I think what most of us have in our minds when we speak of workmen's dwellings are the wants of poor men rather than artisans, at any rate, skilled artisans; and those of us who are medical officers of health will inevitably look at the problem from the standpoint of officials who are anxious to have what I may call 'slummers' provided with healthy and cheap habitations. I think we mostly find that the average workman, certainly the average skilled workman, can and does provide himself with the home he wishes. So if we are to keep to our definition let us agree that we are considering the question of municipalities providing dwellings for workmen below the rank of skilled artisans and poor men and women generally, and in particular those of our brethren to whom we may give the designation of 'slummers.' The general propositions in favour of municipalities providing common lodging-houses and poor men's dwellings are something like these. That anything which damages the health of the community included in a municipality injures that municipality in its most valuable asset—vigorous humanity. That inefficiently equipped and managed common lodging-houses and badly situated tenements and dwellings do this. That the credit of the municipality being greater than that of an individual it can erect and carry on common lodging-houses and provide poor men's dwellings more cheaply than private persons trading for profit are likely to do, or as experience teaches us can do. That the direct control which it obtains over common lodging-houses enables a municipality more easily to check the importation and the propagation of various communicable diseases, and that by securing to its people more air space and healthier surroundings than these find in the slums, &c., it is laying up a richer harvest of healthy dwellers for the succeeding generation as well as actually diminishing ill-health and disease in the existing community. The general objections to all schemes may be summarised thus: that the carrying of them out commits the municipality to trading; that it interferes very seriously with private enterprise; that it will add to the already enormous amount of municipal debt; that it imposes an improper amount of strain upon members of municipalities in the matter of management; and that the further progress of such socialism threatens municipalities with becoming in time, not the servants, but the slaves of their tenants. Well, then, I say municipalities should provide common lodging-houses upon precisely the same principle which leads the State to insist that every child shall have a certain amount of education or every starving person a certain amount of food and shelter—the principle of common interest dictating a minimum standard below which the education, the sustenance, or in the special case before us the lodging of the poorest members of the community shall not be suffered to fall. Pray do not misunderstand me. I by no means believe that it is the duty, that it is wise, or even prudent for the municipality to provide all the common lodging-house accommodation which may be needed by its permanent and temporary population. What I do feel is that it is desirable, wise, and prudent for a municipality to say: 'We will not, out of regard alike for the healthiness of our city and for the welfare of our common humanity, suffer any persons to be lodged in a common lodging-house within our boundaries below a certain minimum standard of healthiness and comfort, and to insure this we will provide such minimum ourselves and leave it for private enterprise to attract custom by offering a higher standard of comfort, &c., for the same money, or, for those who can pay it, for a higher sum of money.' Of course, I know that it may be urged that by owning all common lodging-houses a municipality can simplify administrative control and inspection, but I am at present satisfied that the principle I urge is the soundest basis for action—viz., the establishment by the municipality in its own common lodging-houses of the minimum standard of accommodation, &c., it will tolerate; just as although a starving man is now fed and sheltered by the community in a workhouse one by no means desires to see every other place where food and shelter can be obtained in the direct possession of the State. There can be little doubt, too, that the provision of all the lodging-house accommodation needed in any locality of the municipality will favour the tendency to crowd large numbers upon a given site, if only to reduce administrative expenses—a tendency I regard with disapproval. Moreover, it is hard upon the wayfarer to be compelled to tramp perhaps right across a town before he can reach a common lodging-house in which he can find accommodation. My personal attitude of approval of the provision of dwellings for poor people by municipalities is conditioned by the limitation I apply to the provision of common lodging-houses—viz., that the municipality is entitled to say, and wise to say, "We will not permit any members of our communal family to be housed under conditions below a certain standard in healthiness, which minimum standard we will ourselves supply, leaving private enterprise to provide greater conveniences, &c., for those who desire to live on a scale exceeding our minimum," just as we now say that it is to the public advantage that every child shall receive a certain minimum amount of education, which minimum we provide, but leave the way open for the attainment of any desired maximum through private expenditure. I feel tolerably sure that the influence of what I may term 'standardising' municipal common lodging-houses and poor men's dwellings will be of even more indirect than direct benefit to the affected municipality—they will act as perpetual spurs to private competition, which to prove remunerative must offer accommodation more attractive."

Dr. A. HILL (Birmingham) said that the common lodging-house was one of the least difficult kinds of building to provide. Men who had only 18*s.* per week could not pay a rent of 5*s.* or 6*s.*; what was most wanted in his opinion were rooms at 1*s.* per week. Unfortunately, however, houses with such rooms could not be furnished by the municipalities except at a loss. He thought that could be done only by throwing the cost upon the ratepayers. Lodging-houses, on the other hand, could be directed by private enterprise. It was, therefore, only necessary for municipalities to supply lodging-houses where private enterprise failed. At present in Birmingham they were trying the dual system, one house above the other, let at a weekly rent of 4*s.* 6*d.* One of the great difficulties to the supply of houses for the very poor was the dirty and destructive habits of that class.

Dr. E. P. MANBY (Liverpool) gave some account of what had been done in Liverpool for the housing of the working classes.

Dr. WALTER SMITH (London) was in favour of the municipality providing houses for the poorer working classes, but there were obstacles in the way of carrying it out owing to the difficulty of obtaining land and to the complication of administering the Act. He brought forward a motion to the effect that Government should be petitioned to amend the Act with a view to its simplification and that the time for repayment of loans be extended for buildings to 60 years, the land being considered as a permanent asset.

Dr. J. S. TEW (Tonbridge) observed that at the Conference on the Housing of the Working Classes lately held in London the plans of the Liverpool cheap dwellings, designed by Mr. P. Boulnois, were shown, and he gathered that the 3½ or 4 per cent. paid referred to the total revenue derived from the rents, less repairs and management, but did not represent profit. It appeared quite impossible to provide municipal dwellings at anything like 1*s.* per room per week. The municipal dwellings erected in London and other large centres cost an amount requiring a weekly rent of from 2*s.* to 3*s.* a room to pay their way. The three-room and four-room dwellings erected by the Richmond Corporation and letting at a rental of from 4*s.* 6*d.* to 5*s.* 6*d.* respectively were comfortable and healthy and self-supporting. These were built as double cottages in flats with a small garden for each tenant at the rear and were well worth a visit by anyone interested in the question. All details were given in Alderman Thompson's excellent description of these dwellings.

Dr. COOPER PATTIN, in reply, said that in dealing with cottages in rural districts it was necessary to simplify legislation. He agreed with Dr. Hill and the President that

the position that a loss would be incurred by the erection of proper houses for the poor must be faced.

The following was the motion which Dr. WALTER SMITH brought forward. It was seconded by Dr. PECK and carried *nem. con.* :—

The public must be taught that money would have to be sunk as an investment which would not make an immediate money return.

*Food Preservatives and Colouring Matters in Food, with Reference also to Foreign Law and Conditions.*

Dr. A. S. GRÜNBAUM (Liverpool) then read a paper upon this subject. The enormous extent, he said, to which food preservatives were now being used, the abuses to which they were put, and the injuries which they might cause, made stringent and definite legislation on the subject necessary. At present the law was too vague and narrow, and trade interests were too selfish and magistrates for the most part were too ignorant for much progress in this direction. Meanwhile continental nations were going rapidly ahead and they would, if they were not careful, soon lose their front place in matters relating to public health and state medicine. The addition of preservatives, regarded independently of their action, might be classified as follows. They might be added (1) either (*a*) *bonâ fide* or (*b*) with fraudulent intent; or (2) with a view to either (*a*) permanent (e.g., ham) or (*b*) temporary (e.g., milk) preservation. The addition might be considered *bonâ fide* if (*a*) the purchaser was made aware of the addition, and (*b*) if the article was well known to usually contain a preservative, always provided that the preservative had no injurious action. The use was fraudulent if (*a*) the addition was concealed, (*b*) if used to make a stale article appear fresh, and (*c*) if the preservative was injurious. Consequently preservatives added to articles intended for consumption when fresh were generally added with fraudulent intent, since they concealed the inferior quality of the article to the prejudice of the purchaser. Milk might be taken as the most important type of food under this heading. Dr. Grünbaum thought that in a strictly legal sense any addition of preservatives to milk was illegal, because any customer if offered his choice of fresh milk or of milk apparently fresh to which the preservative had been added would undoubtedly choose the former; that would be the quality demanded. The saving clause in the statute did not cover milk, since it was not produced nor did it require preparation as an article of commerce. In the case of cream the defence had sometimes relied upon the fact that the addition of the preservative had been noted upon the bottle, but he was not aware of any case in which the milk-dealer had informed his customers of the presence of a preservative. Continental opinion seemed pretty unanimous regarding the inadvisability of permitting the addition of preservatives to milk. Although not specifically prohibited by the Foods Act the German Ministry in a circular letter as far back as 1884 advised the local authorities to make by-laws to this effect, and repeated the advice in another letter last year. In Hamburg the local law had been so effectual that in milks examined with that object the percentage of those containing boric acid fell from 23 in 1895 to 4·9 in 1897. A similar regulation held good in Vienna. It did not, therefore, appear that such restrictions caused difficulty in the adequate supply of milk to large towns. He wished to emphasise that point because the opponents of preservatives were usually considered to be mere theorists. In regard to wine the German law was very particular and there was a statutory prohibition against the addition of certain things to wine or to drinks like wine. Amongst these were salicylic acid, glycerine, and aniline dyes, also the addition of saccharin to sparkling or fruit wines. It would be well if precautions were instituted in this country against the addition of salicylic acid and dyes to the so-called fruit wines. A favourite preservative on the continent was sodium sulphite. It was used principally for giving a fresh appearance to minced meat. There had been numerous convictions against its use, sometimes with imprisonment. There was reason to believe that the sulphites were used also in this country, although for a different purpose, but Dr. Grünbaum was not aware that any cases had, although such cases certainly should be, taken into court. In examining into the question of preservatives and colouring matters he had not, unfortunately, been able to find evidence of a high standard of commercial morality. He would take two instances from the price lists of firms engaged in supplying confectioners and brewers. Concerning saccharin there was the following paragraph: "As a cure for 'sick' beers.—Even when such a dubious lot of beer already begins to show signs of incipient 'taint' there may yet be time to save it by quick action in introducing, as may be needed, from one to two ounces of saccharin per 500 gallons and thereby arresting the souring process and at once making the beer drinkable and marketable." Even apart from its preservative qualities the substitution of saccharin for sugar was undesirable as diminishing the nutritive value of the food. Another list had amongst its "brewers' materials" in the largest letters potassium metasulphite, directing one ounce per barrel to be used, with the remark that "it is a perfect antiseptic in crystals, &c." This quantity was equivalent to 1·5 grains per pint. On another page was a list of brilliant aniline colours for boiled sugars, fondants, lozenges, jujubes, &c. The law was at present somewhat too lenient since it permitted imprisonment as punishment only with the second offence and if the fine amounted to £50. If it could be relied upon that the quantity and quality of a preservative would always be intimated to the purchaser it might be possible to permit the use of preservatives within certain limits, but Dr. Grünbaum could see no hope of inducing any trade at large to make such intimation. Occasionally and exceptionally instances were met with where the addition of a preservative was noted on the label; but having regard to the inherent selfish characteristics of commerce the regulations should be definite and the punishment severe. In most articles of food the addition of preservatives should be uncompromisingly forbidden and the only class in which it seemed in any way admissible was that of preserved meat of various kinds—e.g., ham, bacon, &c.—but not potted meat. The chief reasons for this hostile attitude to preservatives were the following. 1. The addition of a small quantity of a preservative like borax did not hinder the growth of micro-organisms as a whole, although it did repress the putrefactive ones and interfered with the digestive functions. As Professor Halliburton had shown, the addition of even a small quantity of borax (0·05 per cent.) inhibited the action of rennet ferment. Dr. Grünbaum confirmed this experiment and could add that the reason was to be found in the precipitation of the calcium by the borax. It exerted practically no antiseptic action. [A photograph showing this was passed round.] Adding calcium to make up for that precipitated only made matters worse from a bacterial point of view. 2. The addition of a large quantity sufficient to inhibit all growths was injurious to the cells of the digestive tract. These cells were known to be more sensitive than bacteria. Milk treated with 0·1 per cent. of formalin formed larger clumps in the stomach, which thereafter were digested with more difficulty than those formed from pure milk. 3. The same end could be attained by harmless means. He considered the occurrence of putrefaction to be a good indicator of when other bacteria were assuming dangerous proportions, and to repress their growth in an article like milk was like sitting on the safety-valve of a steam-engine. If milk had once gone bad the dealer could mix it with that which was new and sweet; if a preservative were added and it remained apparently good, no doubt yesterday's milk or that of the day before would be added to to-day's and indefinitely, and no legal prohibition without inordinate expenditure on inspection could control such a procedure. The experience already gained in surgery should be put to use. Asepsis now ruled instead of antisepsis and what was required was aseptic, not antiseptic, food. Two physical means were at command for this purpose—heat and cold. The former was chiefly applicable to articles not intended for fresh consumption, the latter chiefly to more perishable foods, like milk and cream. That they were effectual was well known; certainly they were more effectual than antiseptics at ordinary temperatures. Cooling and keeping cool would keep the number of bacteria in milk down to that with which it started. Colouring matters were, he thought, even less defensible than preservatives, especially those containing aniline dyes. To add colouring matter to milk, butter, cream, &c., for the purpose of apparently improving its quality was not, of course, as culpable as the addition of a preservative, but their addition for making a food more attractive required restraint. Nearly all colours could be obtained by harmless although sometimes more costly means. The addition of copper sulphate was quite indefensible. Coming to the conclusion of his remarks Dr. Grünbaum said that he was anxious that the blame in this matter should be correctly apportioned. As regarded colouring matters the public were chiefly to blame, but they could soon be educated to a sanitary level. If brightly coloured foods could

nowhere be obtained the public would buy the other. As regarded preservatives in milk, cream, &c., the blame seemed to rest chiefly with the railway companies and with the ice-vendors. Ice was used far too little in England principally on account of its exorbitantly high price, for most people, he imagined, preferred to have their summer drinks cold. He believed the cow-keeper would use a refrigerator if ice could be obtained at a reasonable price. But the railway companies were the chief offenders. They did not supply refrigerator vans, they required milk-cans to be sent open (unless they were full) in spite of the obvious risks of contamination, their rates were too high, and their servants were too careless. Indeed, they seemed almost to take a malicious pleasure in putting milk-cans in the sun. It would appear, therefore, that some injustice might be done by legislating too hardly for the purveyors of perishable foods, unless at the same time rational treatment of the same from their carriers were required.

Dr. A. HILL unreservedly endorsed the views set forth in Dr. Grünbaum's paper. He himself two years ago, at the meeting of the Sanitary Institute in Birmingham, proposed similar measures, and emphatically laid down the proposition that no antiseptic should be added to food unless its nature were declared. He also maintained that in cold a perfect means of preservation existed, while it had the advantage of adding nothing, subtracting nothing, and of not affecting the flavour or digestibility of the article. He had also brought forward a motion, which was carried unanimously, advising that Government should take steps to prevent the use of antiseptics in food. He quite agreed with Dr. Grünbaum as to the danger of using aniline or other dyes and he described a case of prosecution for dyeing sugar with an aniline dye in which the surprising decision of the bench was in effect that though they found it was proved that the sugar was dyed, yet *it was of the nature, substance, and quality demanded by the purchaser.*

Mr. W. C. C. PAKES (London) said that sodium sulphite was largely used by pork-butchers. Although he agreed entirely with Dr. Grünbaum as to the desirability of preventing the addition of preservatives to such food-stuffs as milk and butter, he doubted whether they would be able to prevent such additions in the immediate future.

Dr. D. WALSH (London) said that though the vendor might declare the addition of a preservative and the purchaser might buy the food so preserved with his eyes open, and the transaction would then be *bonâ fide* according to Dr. Grünbaum's definition, nevertheless, a vast amount of harm might be done to the individual by their consumption. What was wanted was a more accurate knowledge of the remote effects of the drugs so used on the human system. Without such knowledge the demonstrated facts upon which to base legislation on the matter of food preservatives were lacking. While the whole matter was in this transition stage Dr. Grünbaum's suggestion of food asepsis as against antisepsis was of great practical value and formed one of the most important contributions yet made to the subject.

Dr. MCWALTER thought that the motion was far too sweeping. It would involve the disuse of salt in food and would injure trade.

Dr. THRESH thought that salt must be left out of the list of condemned preservatives because it was a necessary article of food and must be used in many instances to procure palatability.

Dr. GRÜNBAUM, in replying, thought that if a strong enough stand were taken it would be possible to enforce any standard of purity that might be considered necessary.

Dr. GRÜNBAUM'S motion was then put:—

That in the opinion of the Section of State Medicine of the British Medical Association the addition of preservatives to milk, butter and similar products, beer, and wine should be prohibited and their additions to other foods regulated by statute.

Dr. COOPER PATTIN seconded the motion and it was carried unanimously.

## PSYCHOLOGY.

FRIDAY, AUGUST 3RD.

Dr. C. C. EASTERBROOK (Edinburgh) read a paper on

*Organo-therapeutics in Mental Diseases.*

Brown-Séquard in 1889 enunciated his doctrine of internal secretions as the results of experiments made with the extracts of healthy organs and stated that "all glands and all tissues have an internal secretion: all injected subcutaneously have a tonic effect." The use of the thyroid first as a grafting and then as a preparation to be administered by the mouth, due to the work of Mr. Victor Horsley (1891) and Dr. G. R. Murray in this country, gave a further impetus to organo-therapeutics. Organo-therapeutics in the insane was based on the assumption that the various organic substances administered had a therapeutic effect on the brain and nervous tissues. During the five years past Dr. Easterbrook had administered to patients suffering from insanity the following organic extracts: thyroid gland, thymus, pituitary body, cerebrin, splenin, orchitin, ovarin, supra-renal extract, &c., to determine their value and to ascertain their pharmacological action. An essential point in the work thus undertaken was to administer the organic extracts only to patients whose insanity was definitely making no progress towards recovery under the methods adopted in the asylum, or whose insanity was becoming chronic or incurable. It was necessary always to exclude the effects of "mental suggestion." The sheep was the animal used to supply the organic extracts and these were administered in dry tabloid forms as prepared by Messrs. Burroughs and Wellcome. Each patient was put to bed during the period of experiment and was given a staple diet sufficient to maintain body-weight at its usual level, the administration of the extract beginning on the fifth day. The patient was weighed weekly during treatment and for a month after. The urine was regularly examined and the urea was estimated by the hypobromite method. The phosphates in the urine were determined by the uranium method. The thyroid extract was administered in 130 cases of insanity (45 males and 85 females) with the following results. Where large doses were given there followed pyrexia in most of the cases to a slight or moderate degree. Loss of weight was a constant symptom, also increased sweating, pains, and tinglings in various parts of the body, and a slight or moderate degree of exaltation or restlessness. There was tachycardia in most cases, and the respirations were increased by about six per minute. Appetite and thirst increased, and in females menstruation was made more profuse than usual. Urea and nitrogenous products were increased in the urine, showing an enhanced metabolic activity. Slight transitory albuminuria was found in 10 per cent. of the cases. In moderate and small doses the above results were present in a correspondingly less degree, and it was concluded that the thyroid extract acted as a powerful metabolic (katabolic) stimulant. The patients included five idiots and imbeciles, seven pubescent or adolescent cases, and cases of mania, melancholia, myxœdema, alcoholic, and general paralytic insanity, &c. Of a total of 130 patients 12 recovered, 29 were improved, and 89 were unimproved. The recoveries included four cases of stupor, three of puerperal mania, one of lactational melancholia, one of myxœdema, one of simple melancholia, and two of climacteric melancholia. These patients also improved physically. The threatened attacks of *folie circulaire* were aborted by thyroid administration. Parathyroid extract was given to a few patients with slight or practically negative results. Thymus extract given in two cases produced no improvement, and pituitary extract given in four cases (two being cases of general paralysis, one of adolescent melancholia, and one of monomania of persecution) produced no improvement. Cerebrin was given in 19 cases; in 14 the patients remained unimproved, three were improved (females with adolescent, climacteric, and senile mania), and two recovered (females). Orchitic extract was given in eight cases and three were slightly improved. Ovarian extract was given in 36 cases (all females); four of these were stuporous and improved temporarily, the others were unimproved. It was concluded that the thyroid had an active principle (Baumann's iodothyrin) the effect of which was to increase tissue-oxidation far above all other substances, and this continued so long as the drug was taken, so that the beneficial changes in metabolism (in suitable cases) might be made to endure for a considerable period.

Dr. J. G. SOUTAR (Gloucester) regarded the subject of organo-therapeutics as one of great importance, and the statements in Dr. Easterbrook's paper as cautious and moderate. It brought them to the point which those of them who were not over-sanguine had desired to reach—viz., the value of organic extracts as an aid to treatment in a limited number of cases of mental disease. The first case treated at Barnwood House Asylum was apparently one of confirmed dementia of long standing secondary to puerperal mania, which improved rapidly and surprisingly under thyroid treatment. Since then cases of many types of

insanity had been treated, but although a degree of improvement was obtained in some cases no other recovery had followed.

The PRESIDENT (Dr. PERCY SMITH of London) said that like Dr. Soutar he had expected a great deal from the treatment of mental cases with thyroid extract, but had been on the whole disappointed. He had seen marked improvement up to a certain point result in some chronic cases but without positive recovery.

*On some Cardio-psychical Associations.*

Dr. JAMES WHITWELL, medical superintendent of the Suffolk County Asylum at Melton, read a paper on this subject. He pointed out that imbecility might be associated with cardiac hypoplasia and gave an account of a case (non-syphilitic) in illustration. Two cases of a similar type had been previously recorded by Hagen.[1] In a second class of cases congenital or infantile cardiac disease was present and compensation had been established. The intelligence in such cases remained at the childish level. Varieties of mood and disposition towards impulsiveness, sexuality, &c., might be present in different subjects of this class, the permanent condition common to all being that of physical and psychical immaturity. In cases of another class—viz., adults with cardiac disease—the symptoms varied as follows. A class of case showing mitral disease (especially stenosis) had gradually developing irritability, distrustfulness, and impulsiveness. Such patients were hyper sensitive and morbidly suspicious, sometimes apparently with definite hallucinations. In connexion with aortic disease Dr. Whitwell had no case showing any evidence of intimacy of association leading to the production of mental symptoms. These cases, he added, were complicated by syphilis or general paralysis, themselves such potent bases of cerebral and mental disorders. A final group included cases of senility with cardiac asthenia and associated cerebral erethism, the evidence suggesting that the cardiac condition was primary, the mental symptoms being but an exaggeration of the mental condition typically present in acute cardiac asthenia. In advanced and hopeless cardiac cases where the heart refused to respond any longer to cardiac stimulants and failed beyond hope of recovery the patient might exhibit a condition of mental buoyancy and *bien-être*, this condition being probably due to an illusion of the muscular sense, so that the patient put forth unusual muscular efforts which he would not attempt in health, with the result that sudden death was frequently the result.

*Blood-pressure in the Insane.*

Dr. MAURICE CRAIG, assistant medical officer at Bethlem Hospital, read a paper on this subject. He stated that the blood-pressure was high in cases of simple melancholia and low in mania and agitated melancholia. Altered blood-pressure was a symptom rather than a cause in these mental disorders. A parallel was drawn between mania and the condition of sleeping and dreaming in regard to the absence of attention and the fantastic arrangement of ideas. In both conditions the blood-pressure was low. In general paralysis, after the initial stage, the blood-pressure was remarkably low and it was surmised that the same would probably be found in somnambulists. Low blood-pressure was present in states of restlessness, and with the idea of raising the blood-pressure a saline injection into the bowel should be attended with good results. In several restless patients, otherwise also suitable for treatment, the injection of from eight to 10 ounces of water into the rectum every morning was followed by an improvement of symptoms if the water was retained. The observations collected were necessarily few and not complete enough to make definite and reliable statements and more might be learnt could the experiences of other observers be collated.

Brief remarks on the above papers were made by Dr. E. S. PASMORE (Banstead Asylum), Dr. HARRY CORNER (London), Dr. ROBERT JONES (Claybury), Dr. LLOYD ANDRIEZEN (London), Dr. SEYMOUR TUKE (London), and the PRESIDENT, after which Dr. WHITWELL and Dr. CRAIG briefly replied.

The PRESIDENT read a paper on

*Peripheral Neuritis and Insanity*,

referring especially to the conditions described as "psychosis polyneuritica" by continental alienists. This condition was always secondary to toxæmia resulting from either alcohol, metallic intoxication, acute or chronic fevers, or septic processes. The mental disorder in these cases was a disturbance of attention, a loss of memory (amnesia) and of orientation, mental confusion and restlessness, especially at night, together with hallucinations. A summary of cases of peripheral neuritis associated with insanity at Bethlem Hospital during the years 1885 to 1898, and private cases during the past two years, included 20 in all, four being males and 16 females. Of the male patients, three were undoubtedly alcoholic, and of the females 11 were certainly alcoholic. Varying degrees of anæsthesia, analgesia, and paralysis were present in the limbs and body, with tenderness in the muscles and nerve-trunks. The mental symptoms were well-marked as stated above and could be variously grouped as maniacal, amnesic, delirious, hallucinatory, &c. He had not seen a single case of polyneuritic psychosis due to septic or metallic poisoning.

In the discussion following the paper Dr. JAMES P. STEWART (Clifton) mentioned two cases, one associated with alcoholic intemperance and the other with lead poisoning, while Dr. J. G. SOUTAR had seen two cases due to sulphonal poisoning. In all four cases the characteristic symptoms of polyneuritis, marked amnesia, loss of orientation (sense of locality), and more or less loss of the sense of personal identity were present.

Dr. E. S. PASMORE had seen two cases, one of alcoholic origin and the other associated with diabetes, both suffering from polyneuritis and amnesia as described by the President.

The following resolution was then passed by the meeting unanimously:—

That this section of the annual meeting held at Ipswich, 1900, begs to draw the attention of the Council of the Association to the fact that the present title of the section—viz., "Section of Psychology"—is a misnomer, and recommends that in future the section should be called "Section of Psychiatry."

A vote of thanks to the President and secretaries brought the meeting to a close.

[1] Psychiatrisches Centralblatt, 1872.

## PHYSIOLOGY.

FRIDAY, AUGUST 3RD.

*Anæsthetics and Urinary Secretion.*

Dr. W. H. THOMPSON, Professor of Physiology in Queen's College, Belfast, read a paper on the above subject. He had worked with dogs and had obtained the urine usually through a cannula in the ureter, though occasionally from the bladder. The anæsthetics studied were (1) ether, (2) chloroform, (3) the A. C. E. mixture, and (4) ether-chloroform (2 to 1). Ether usually produced diuresis, with increase in the total nitrogenous excretion. Chloroform, on the other hand, generally reduced the quantity of urine as well as the total nitrogenous output; the diminution, however, was followed by increase in both during the hour following the anæsthesia. The immediate effects of the A.C.E. mixture were variable, but its administration was invariably followed by diuresis. The ether-chloroform (2 to 1) mixture produced negligible effects on the renal secretion. After all anæsthetics the urinary chlorides were reduced in quantity. Albuminuria also occurred in some cases, probably rather from hæmorrhage due to mechanical injury than to renal disturbance. Grape sugar was found in most cases after anæsthesia. Glycuronic acid compounds and pentose could not be detected.

Dr. DUDLEY W. BUXTON (London) and Dr. A. G. LEVY (London) read a paper on

*The Effect of Some Anæsthetics on the Kidney.*

These observers had made physiological experiments on animals, and observations on human beings undergoing surgical operations. In dogs they had repeated experiments published by Kemp and Thomson, who found that ether produced shrinkage of kidney volume, accompanied by albuminuria and partial or complete suppression of urine. Dr. Dudley Buxton and Dr. Levy had only been able to corroborate this in five dogs out of 12, although the anæsthetic was fully pushed, and then only when the administration had been prolonged and the dosage great. They had never observed complete suppression, and such retardation as did occur passed off on cessation of anæsthetisation. In man they found that during the 24 hours following anæsthetisation the urine was diminished in quantity, but of higher specific gravity. The latter suggested that excretion had not been impaired by the anæsthetic, and the former was (at all events largely) due to—e.g., purgation, diminution of intake, and occasionally to vomiting. In only 2 7 per

cent. of their cases had they found albuminuria after anæsthetics unless present before, though albuminuria when already present was not infrequently increased by the anæsthetic. They attributed Kemp and Thomson's "ether-effects" to excessive use of the drug.

The paper by Professor W. H. THOMPSON and that by Dr. DUDLEY BUXTON and Dr. LEVY were discussed together.

Dr. AUGUSTUS D. WALLER, F.R.S. (London), commented on the great difference between the anæsthetic properties of ether and chloroform, the relative strength of which he estimated as being in the ratio of 1 to 8. He referred to the supposed injurious effects of ether, intimating that in spite of the apparently greater safety attached to the use of that drug, he would prefer chloroform in the hands of an expert anæsthetist.

Mr. B. MOORE (London) asked Professor Thompson whether he had observed the rate of flow of urine when ether was pushed so far as to bring about a fall in blood-pressure. He also asked how soon after the commencement of anæsthesia sugar and albumin appeared in the urine. He had himself failed to find either sugar or albumin in urine excreted immediately after operations.

Professor R. J. ANDERSON (Galway) alluded to the well-known direct action of chloroform on mucous membranes and to possible reflex effects on other organs arising therefrom. He advocated detailed study of the effects of anæsthetics on the mucosæ with which they came in contact, suggesting that the renal effects of anæsthetics might possibly be conditioned by influences reaching the organ from the central nervous system and initiated in the respiratory mucosæ.

Professor THOMPSON, in reply, stated that he had never pushed ether to the extent of causing a fall in blood-pressure. He had never estimated the quantity of sugar found, although it was usually present in measurable quantity.

Dr. DUDLEY BUXTON, in replying, expressed great appreciation of Professor Thompson's paper. He had not attended to the possible effects of anæsthetics on the respiratory mucosæ. He regarded the initial rise in blood-pressure which sometimes occurred in the early stages of chloroforming as being due less to the direct action of the drug than to the muscular movements which were incidental to its administration. He thought that much distrust of ether was caused by clumsy administration. It was not unusual to see ether pushed to a largely unnecessary extent. Once anæsthesia was established the amount of anæsthetic necessary to maintain the state was very small. This fact was overlooked by many administrators of ether.

Dr. AUGUSTUS D. WALLER, lecturer on physiology at St. Mary's Hospital Medical School, London, read a paper on

*A Digital Sphygmograph,*

and gave a demonstration of the instrument. The instrument consisted essentially of a stiff spring on which lay a light lever which when in use rested on the nail of the middle (or other) finger. The finger rested on a support which could be screwed towards or from the spring, and so the finger could be subjected to any desired pressure. The "law" that the "pulsations of an artery are at maximum when the pressure on it externally is equal to the pressure of the blood within it" enabled them to use this instrument to ascertain the pressure in the vessels of the nail bed. This the digital sphygmograph indicated to be about 2 cm. of mercury. Measurement of the interval between the "digital pulse" and the heart-beat suggested that the pulse in question was that of pre-capillary arterioles. The pressure (2 cm. of mercury) above quoted was not a constant one, but varied in different individuals and in the same individual at different times.

The PRESIDENT (Professor W. D. HALLIBURTON) had seen and used Dr. Waller's sphygmograph before and had a high opinion of the possibilities that it offered for future investigation.

Dr. WALLER also read a paper on

*The Retinal Response to Light.*

Frogs' eyes were employed and connected with a galvanometer in such wise that their electromotive condition was shown by movements of the galvanometric mirror. The eyes were subjected to alternate light and darkness. At the commencement of illumination the galvanometer indicated a "positive variation" of the initial current of injury, and at the close of illumination another variation in the same direction. Massage of the eyeball reversed this variation. At the close of the paper Dr. Waller alluded to a distinction between living and non-living matter exemplified in his above-quoted experiments, to which he had lately devoted his attention and which he proposed to demonstrate on a subsequent occasion.

*The Intermittent Pulse.*

Professor A. R. CUSHNY (Ann Arbor, Michigan) demonstrated tracings of an intermittent pulse. He had already read a paper on the subject in the Section of Medicine. He called attention to occasional omission of a pulse-wave in the sphygmograms, and pointed out variations in the interval between the waves preceding and following the one dropped. He had succeeded in experimentally producing a like phenomenon in dogs.

*The Structure of the Mucous Membrane of the Œsophagus.*

Professor D. J. COFFEY (Dublin) read a paper on this subject. Rüdinger had noticed in 1879 certain glands in the human œsophageal mucosa, and Schaffer had described them in detail some 18 years after. They were restricted to the upper end of the tube and were said to lie in the lateral "bays" of the mucosa. They were confined to the mucous membrane itself, whilst the ordinary, well-known mucous glands of the viscus reached beyond the muscularis mucosæ. They differed morphologically from mucous glands in being markedly tubular. They were, according to Schaffer, very like the cardiac glands of the stomach, even at times to the extent of possessing "oxyntic" cells. Where they were found the muscularis mucosæ was quite distinct and their relation to it was beyond doubt. They exhibited *inter se* minor differences in structure and distribution.

The PRESIDENT and Professor W. H. THOMPSON expressed great appreciation of Professor Coffey's paper. The latter had had the privilege of seeing many of Professor Coffey's sections and was much struck with their clearness.

*Influence of Salicylate of Sodium on General Metabolism.*

Dr. FRANCIS W. GOODBODY, Assistant Professor of Pathological Chemistry in University College, London, read a paper on the above subject. He had experimented on two individuals, one of whom had a tendency to excessive excretion of uric acid and to occasional gravel, whilst the other appeared to be free from such tendencies. Both were fed on a carefully-weighed and analysed diet, and their excreta were analysed daily, both prior to and during adminstration of salicylate of sodium. He concluded (1) that sodium salicylate increased the quantity of water excreted and also the specific gravity of the urine, the latter being due to increased elimination of nitrogenous substances, especially urea; (2) that the drug increased the breaking up of the proteids in the body; and (3) that in spite of its cholagogue action the drug had no influence on general metabolism so far as the absorption of proteids and fats was concerned.

*Changes in Volume of the Sub-maxillary Gland accompanying Secretion.*

Dr. J. L. BUNCH (London), Research Scholar of the Association, read a paper on this subject. The gland was found to vary in volume through change (1) in the amount of blood going to it, or (2) in the amount of secretion coming from it. It reacted passively to changes in general blood-pressure and actively by local vaso-dilatation and secretory discharge. Pure vascular effects were shown by an atropinised gland on excitation of the chorda tympani. Excitation of the chorda tympani in the absence of atropin caused shrinkage of the gland in spite of vascular dilatation therein. Allowing for this dilatation the shrinkage due to extra-vascular structures (cells) could be estimated. Comparison of the volume of saliva secreted during an experiment, with the volume lost by the extra-vascular structures in the gland, showed that at least 90 per cent. of the secretion came from the extra-vascular structures in question.

The PRESIDENT complimented Dr. Bunch on his interesting results, commenting on the great value of the plethysmograph as a means of research.

Mr. W. LEGGE SYMES (London) showed an Embedding Bath designed with special reference to stability, constancy, economy, and convenience. The most striking features were the shape of the bath and the means by which the size of the by-pass of the thermostat was controlled.

## PATHOLOGY.

THURSDAY, AUGUST 2ND.

*The Etiology of Tropical Dysentery.*

Professor SIMON FLEXNER (Philadelphia) in reading a paper on this subject stated that attempts to establish a common etiological factor for all cases of dysentery had thus far

failed. As must always happen when classification of a disease proceeded upon clinical and pathological rather than upon etiological lines the literature of dysentery was burdened with an interminable mass of appellations indicating either the nature of the disorder or the individual author's conception of its pathological anatomy. Dysenteries, however, were now divided by the chief writers into several groups depending upon the clinical history or the mode of prevalence. Thus Osler wrote of the acute catarrhal, the tropical or amœbic, the diphtheritic, and the chronic dysentery. Davidson considered the subject under two headings; first according to prevalence, as epidemic, as endemic, and as the dysentery of war and famine; secondly, and clinically, as acute, as fibrinous or pseudo-diphtheritic, and as chronic dysentery. Kartulis described endemic, epidemic, and sporadic varieties. Manson spoke of catarrhal and ulcerating dysentery; whilst Delafield distinguished at least five distinct types of the disease as occurring in the environs of New York, and only one of these five types appeared to be due to a specific agent, the amœba coli. The history of the bacteriological investigation of dysentery was then referred to, but the majority of the micro-organisms enumerated, except that described by Chantemesse and Widal, did not appear really to be possessed of any specific properties. Investigations carried on by Ogata in Japan in connexion with an epidemic of dysentery had given more convincing results. Ogata had isolated a fine bacillus, which stained by Gram's method, which liquified gelatin, and which caused intestinal ulceration in guinea-pigs and cats. Vivaldi in Padua had isolated from cases of dysentery a bacillus which resembled Ogata's, but the organism had not been isolated again. Shiga investigated the dysentery which occurred in Tokyo in 1897, and succeeded in isolating from the intestinal dejecta and from the mesenteric glands a bacillus which appeared to bear a causative relation to the cases of disease in which it occurred, and which resembled a bacillus which Professor Flexner himself had isolated from cases of dysentery occurring amongst American troops in the Philippines. In the Philippines the disease had occurred mainly in two forms—the acute and the chronic. Amœbæ were either absent or very difficult to find in the dejecta from the acute cases, whilst they were commonly found in the chronic cases in which ulceration was present. In the chronic cases, however, they were variable both as to occurrence and as to the number of them present. Large hepatic abscesses, usually single, were met with in a number of these cases. In the bacteriological examination of both acute and chronic cases pyogenic bacteria were always present, but their presence was held to be accidental. From many of the cases a bacillus undoubtedly identical with that isolated by Shiga from cases of dysentery in Japan was identified. The cultural characteristics of this organism, its morphology, and the evidence connecting its presence with the causation of the disease were then fully described. In concluding, Professor Flexner said that he was disposed to view tropical dysentery as including a bacillary variety and an amœbic variety, separable both in their early and later stages by their clinical history, by their etiology, and by their morbid anatomy. Whether epidemic dysentery might have a simpler etiology future studies would be necessary to decide.

Dr. PATRICK MANSON (London) in his remarks on Professor Flexner's paper, agreed that they must look for more than a single cause for cases of dysentery. There were clinical varieties of dysentery, each of which probably had its specific cause. He felt sure that recurring or relapsing dysentery was not always due to the presence of amœba coli.

Papers by Dr. LAZARUS-BARLOW (London) on Lipomata of the Kidney and by Dr. WILFRED J. HARRIS (London) on the Pathology and Significance of the Argyll-Robertson Pupil concluded the proceedings of the section.

## DISEASES OF CHILDREN.

THURSDAY, AUGUST 2ND.

Mr. NOBLE SMITH (London) read a paper on

*Ambidexterity as a Method of Teaching Children.*

Replying to the President's query concerning fencing in the discussion upon lateral curvature he said that there were a few cases in which lateral curvature had been attributed to its influence, but more evidence was wanted. Given a predisposing cause a very small exciting cause was needed to develop lateral curvature. One patient he had cured who having taken to fencing relapsed. When the fencing was stopped the patient at once improved. Mr. Noble Smith advocated fencing with both hands alternately. He then dwelt on the great value put by employers on ambidexterity in all trades and arts. For this reason pianoforte players were superior to their fellows as they were able to use both hands. There was a popular idea that right-handedness was natural. There were disadvantages in onesidedness, as it led to over-work of one-half of the brain. It was curious and interesting that evidence showed that if the left hand was being educated the right hand did better work also, especially in drawing and writing. He then drew attention to the production of deformity by the use of one side, hand, and arm, especially in lateral curvature of the spine. It was noteworthy that in so many of these cases there was a bend to the right of the upper part of the spine. The exciting causes were mainly unilateral, standing on one leg, playing the violin, wrong position in sitting, and use of the right arm. In his experience shortness of one leg had produced lateral curvature in many cases, the lumbar curve being the chief and primary one, the dorsal one being the secondary one. The left leg was the short one most frequently. The onesidedness in such patients was undoubtedly a great cause of curvatures. They seemed to have a great tendency to lean to the left and to walk in the dark or when they had lost their way to the left, the right side leading, so to speak. He here mentioned cases of right- and left-sidedness among the lower animals and mentioned that flies seemed to move to the right, as they always flew into his left eye.

The PRESIDENT (Dr. FREDERICK TAYLOR of London) questioned whether they might not be retrograding in civilisation by becoming ambidextrous after one hand had got so specialised for many generations. He then dwelt humorously on the many inconveniences which might occur if bimanualism became common, the difficulties of knowing which hand to shake hands with, how to place the knife, fork, and spoon on a table, and the like.

Mr. W. GREEN (Portsmouth) made a few remarks.

Mr. MUIRHEAD LITTLE (London) drew attention to the great slowness with which the left hand learned any new movement.

In reply Mr. NOBLE SMITH said that he had only dealt with the fringe of the subject and hoped to pursue further investigations.

Mr. MUIRHEAD LITTLE read an analysis of

*A Series of Cases of Infantile Paralysis with some Notes on Treatment.*

There were over 115 cases with 147 limbs involved. The palsies were much more severe in the legs. The palsy was on the left side in 78 cases and on the right in 68 cases. One-third of the cases occurred in the second year of life. In some there was no acute loss of power. In 43 there was a sudden paralysis. In 19 the child was found palsied in the morning after having been put to bed all right overnight. There were convulsions (fits) only in four cases and there was unconsciousness in six others. Teething was hardly ever a cause of infantile palsy. Accidents, including falls, accounted for nine cases. One case only was said to come from sitting on damp grass. There were 20 cases of talipes equinus, 20 cases of talipes varus, 14 of talipes equino-valgus, 5 of talipes calcaneus, 18 of talipes calcaneo-valgus, 21 of talipes valgus, 14 of pes cavus, 15 of "flail ankle," 1 of weak foot, and 1 of weak knee. In four cases the upper extremities were involved. Probably the proportion given was not a true one of the ratio of affection of the upper limbs, because disease of the upper portion of the spine was more likely to kill and deformities of the feet and legs were more likely to be brought before the notice of the surgeon by the parents. Among the principal muscles affected were the following: the flexors of the great toe in 64 instances, those of the four outer toes in 66 cases, the tibialis posticus in 90 cases, the tibialis anticus in 100 cases, the extensor proprius pollicis in 79 cases, that of the four outer toes in 88 cases, the peroneus longus in 74 cases, the triceps cruris in 55 cases, the flexors of the knee in 66 cases, and the quadriceps extensors in 52 cases. Attention was drawn to the cases wherein a wasted thigh was succeeded by a well-developed and well-nourished leg and calf. Under the head of treatment Mr. Muirhead Little considered tenotomies and

the suitable training of weak muscles. Eight cases were dealt with by tendon grafting, of which details were quoted. In four cases a stiff ankle was purposely made.

Mr. NOBLE SMITH remarked on the transplantation of tendons, or rather the transference of muscular power from one place to another. This should be considered, to be successful, as, in fact, an addition to their methods of treatment, not as a substitute. The deformity should be removed first, then the tendons might be transplanted. The improvement in the nutrition of the foot was very marked after tenotomy, although the operation was not on or very near the palsied muscles. This fact suggested whether it might not be well to try doing tenotomy of the palsied muscles in order directly to affect their nutrition in the same way.

Mr. JACKSON CLARKE (London) was glad that the question had been brought forward by Mr. Little as Mr. Little's father had introduced the subject of the surgical treatment of paralysis to the profession. He discussed the effects of the transplantation of tendons.

Mr. NOBLE SMITH related one case of transplantation of tendons with complete success.

Mr. MUIRHEAD LITTLE, in reply, dwelt more fully on the tenoplastic operations. He was always careful to get reduction as far as possible of the deformity first. He also advocated the use of instruments after the operations to support the new tendons.

### FRIDAY, AUGUST 3RD.

Dr. SAMUEL WEST (London) introduced a discussion upon

*Enlargement of the Spleen in Children,*

as follows. Children are subject to the same enlargements of the spleen as adults, but with a frequency which varies according to the degree to which they are exposed to the common exciting causes. In childhood growth is active; this presumes active growth in the blood and blood-making organs to keep pace with the general demands of the body. Active growth implies instability of structure, so that slight causes may produce great disturbing effects. It might therefore *a priori* be expected that children would be subject to enlargements of the spleen of a kind and with a frequency uncommon in the adult. Besides this, enlargements of the spleen are more easy to detect in the child. In what now follows I shall address myself to enlargement of the spleen as it is met with in children, drawing attention to the points in which adults and children differ, and finally dealing fully with the forms of splenic enlargement which are more or less peculiar to children and infants.

In all the specific fevers and the septic diseases alike post-mortem observation proves the spleen to be almost without exception enlarged, though it is by no means always easy to demonstrate this enlargement during life. I do not know that there are any post-mortem statistics to prove that enlargements of the spleen are more common in these fevers in the child than in the adult.

*Malaria.*—Malarial enlargement of the spleen in this country is certainly rare in children, for ague is rare, but not so in countries where malaria is common. It may then be found where there is little or no evidence of definite malarial attacks.

*Leucocythæmia* is usually met with in the middle periods of life and is comparatively uncommon in children and very rare in the very young, yet well-marked instances have been recorded in infants of a few weeks—e.g., from eight to ten weeks old.

With *Hodgkin's disease* the difficulties are greater but they arise chiefly from the indefinite character of the disease itself. Hodgkin's disease occurs fairly frequently in children but it is very rare before the age of eight years and is, I believe, unknown in infants. Regarded as the cause of splenic enlargement the difficulty of diagnosis with Hodgkin's disease is not nearly so great as it appears, for the spleen becomes enlarged as a rule only subsequently to the enlargement of the lymphatic glands in general, so that there is this general glandular enlargement to assist the diagnosis.

*Tubercle.*—The spleen is almost the favourite seat of tubercle and rarely, if ever, escapes when tubercle is disseminated either in the acute or chronic form. In the chronic form the enlargement may be considerable, for the spleen may be stuffed with caseous nodules as large as a cob-nut.

*Syphilis.*—Syphilitic enlargement of the spleen is of clinical importance in one class of cases only—viz., that of infants and very young children.

*Splenic anæmia.*—All that has been hitherto said has been somewhat of a preliminary and introductory nature leading up to the important subject which we have now more especially to consider—viz., that in which the enlargement of the spleen is associated with profound anæmia and which has been named "splenic anæmia." The name is unfortunate for two reasons: first, that it seems to imply or assume what really is not yet proved, that the anæmia in some way depends upon, and is caused by, the affection of the spleen; secondly, because the same term is applied to two entirely different clinical affections—the one a rare disease affecting adults chiefly and only very rarely children and so far as I know not recorded at all in very young children and in infants, and the other a not uncommon disease to which infants are especially liable, though it may continue from infancy through the first two or three years of life. In either case splenic anæmia has many synonyms—e g., splenic cachexia, splenic pseudo-leucocythæmia, lymphadenoma splenica, splenomegalie primitive, and many others—names which, on the one hand, indicate the difficulties of diagnosis and, on the other, show how much there is still to be learnt of the real nature of the disease. If the term "splenic anæmia" be retained we must distinguish the two groups as splenic anæmia of the adult and splenic anæmia of the infant.

I do not think it is necessary in this connexion to enter into any details of cases of splenic anæmia of the adult, for they are so rare in children.

*Splenic anæmia in the infant.*—The nature of the case is often clearly indicated by the peculiar anæmia and the enlargement of the abdomen. The complexion has a peculiar, waxy, ivory-like colour with a tinge of olive-green in it which is very characteristic. The abdomen is tumid and the enlargement of the spleen is often obvious to the eye. The child is usually not emaciated and may be plump, but is very feeble. The blood shows no changes but those of simple anæmia and there is little or no general enlargement of the lymphatic glands. The child is brought under observation usually on account of general ill-health, weakness, and pallor, occasionally on account of respiratory catarrh or gastro-intestinal disturbance or some other accidental complication, but only rarely because the abdomen is enlarged. Most of the other symptoms are accounted for by the extreme anæmia. The splenic enlargement is easy to make out; it may be enormous, so that the organ may extend forward beyond the umbilicus and downwards as far as the anterior superior iliac spine. It moves freely on respiration, is smooth on the surface, and even when much enlarged is not tender to palpation. The changes in the blood are those of simple anæmia, the cells being greatly reduced in number but retaining their relative proportion to each other. The number of red cells may fall as low as 40 per cent. of the normal; if below this the result is almost invariably fatal. The red cells retain their normal amount of hæmoglobin, though some writers maintain that it is reduced as in chlorosis. Nucleated red cells and megalocytes are often present in small numbers, but the eosinophile cells do not vary. If there be any increase in the number of white cells it affects only the lymphocytes and this stands in direct relation, it appears, with the fever. The affection commences almost invariably in infants or very young children, and when discovered for the first time in older children has in all probability dated from infancy. The liability of the sexes is equal. The affection runs a chronic course, lasting some months, but in the end many patients get quite well. But on the ultimate prognosis in general very varying opinions are held by different writers.

The treatment is that of anæmia, and consists of good food, plenty of light and air, cod-liver oil, hypophosphites, iron, and similar remedies. Quinine is useful in malarial cases, mercury and iodide of potassium in syphilitic cases, but the specific remedies, especially mercury, not only do no good, but are actually harmful where the specific cause is absent. Arsenic is a favourite remedy as in other forms of anæmia, but is far inferior to iron.

The association of enlargement of the spleen with rickets and syphilis has been already mentioned, but it is important to consider the relation in which these conditions really stand to one another. Enlargement of the spleen is almost constant in active syphilis of the child. Among infants with congenital syphilis it is found in at least 50 per cent. and in a yet larger percentage among still-born syphilitic fœtuses. The association of syphilis with enlargement of the spleen is, as already stated, held by many to be unfavourable and it is

only in the syphilitic cases that antisyphilitic remedies do good. No doubt rickets and syphilis are often associated, but the figures given by different authors vary. On the other hand the enlargement of the spleen is not constant in rickets. There is no relation between the degree of the rickets and the size of the spleen. Further it must be borne in mind that most of the children of the poor attending hospitals are rickety, irrespectively of the complaint for which they present themselves. The facts bearing on the relation between syphilis, rickets, and enlargement of the spleen appear to be these—(1) that syphilis is occasionally, and rickets frequently, associated with splenic anæmia; (2) that in neither case is the association constant; and (3) that they are neither of them the sole cause and are probably not the cause at all, except perhaps indirectly by means of the ill-health to which either leads.

Another question of interest remains—viz., the relation which exists between the anæmia and the splenic enlargement. There are three possible alternatives: (1) the enlarged spleen may be the cause of the anæmia; (2) the anæmia may be the cause of the enlarged spleen; and (3) both the anæmia and the splenic enlargement may be joint results of some common cause. To the first two there are very strong objections. If neither of these be correct it would seem to follow that the third explanation must be the true one—viz., that both conditions depend upon some common cause. It may be, as some hold, that any condition of the health serious enough to lead to profound anæmia in infants may be associated with splenic enlargement. If this be true it would follow as a corollary that when the health is restored the splenic enlargement would disappear. At the same time there are many objections to so wide a view as this, and it follows that if there be a common cause we do not yet know what it is.

The points to which I would specially draw attention in the discussion which is to follow are:—

1. In the splenic anæmia of infants: (*a*) to its course and duration; (*b*) to its prognosis as regards life and recovery; (*c*) to the relation in which it stands to rickets and syphilis; (*d*) to the relation in which the enlargement of the spleen and the anæmia stand to one another; and (*e*) to the treatment. 2. In other forms of splenic enlargement in children to the frequency in the very young of malaria, leucocythæmia, and Hodgkin's disease.

Dr. MURRAY LESLIE (London) asked for the distinctions between splenic anæmia in adults and in children. He quoted a case in a child, aged 18 months, in which after death simple hyperplasia of the spleen with some fibrosis was found. He also quoted a case of enlargement of the spleen without anæmia or marked leucocytosis.

Dr. A. M. GOSSAGE (London) quoted two cases of splenic anæmia in children in which there was slight increase in number of the leucocytes of all classes and in which there were some myelocytes. One patient died and showed only hyperplasia of the splenic tissue. In his experience syphilis was a more common cause of splenic anæmia than Dr. West had represented. Some cases showed no evidence of either syphilis or rickets. The majority of patients recovered. The anæmia was not proportional to the splenic enlargement.

Dr. THEODORE FISHER (Clifton) said that splenic anæmia was rare in Bristol. In the post-mortem room he did not find the spleen more often enlarged in children than in adults, and sometimes in the specific fevers the spleen was notably small. He had seen several cases of large spleen occurring in members of the same family.

Dr. JOHN THOMSON (Edinburgh) also found that a large proportion of the patients recovered. The anæmia was not proportional to the splenic enlargement. The prognosis was worse with the greater severity of the anæmia. He had seen a large spleen in twins.

The PRESIDENT referred to Dr. C. Wilson's and Dr. J. D. Stanley's cases of enlarged spleen in several members of one family.

Dr. WEST, in reply, stated that the clinical course of splenic anæmia in adults was different from that in children: the result was fatal, and pathological changes were found in the Malpighian bodies. The splenic enlargement was possibly due to a chemical poison absorbed from the intestine. Much attention should not be paid to slight changes in the blood.

Dr. J. H. NICOLL (Glasgow) read a paper on

*Congenital Hypertrophic Stenosis of the Pylorus with an Account of a Case successfully treated by Operation.*

The patient at birth was healthy, but had always vomited 15 minutes after food, bringing up the whole contents of the stomach, and had rapidly wasted. There was no nausea and constipation was complete. Operation was performed at the age of six weeks. The stomach was found to be much dilated and the pylorus could be felt as a thick ring. The stomach was opened and a pair of forceps was passed into the pyloric opening, which was stretched until the peritoneum burst. The wounds were then closed. There had since been complete relief of the symptoms, and the child, 12 months after operation, was well. Several other cases had been operated on by gastro-enterostomy and pylorectomy but with fatal results. He believed that two successful operations had been performed since his own.

Dr. THOMSON had seen six cases of the complaint in which all of the patients died. Two had been operated on but unsuccessfully.

*The Causation of Infantile Scurvy.*

Dr. C. E. CORLETTE (Sydney, N.S.W.) in a paper on this subject considered that infantile scurvy was due to the use of boiled or sterilised milk or cooked infant's foods, and was therefore commoner amongst the upper classes. He considered that the anti-scorbutic element in milk was citric acid which existed in milk as calcium citrate to the extent of one gramme per litre (one quart of milk contained as much citric acid as a large lemon). The neutral calcium citrate existed in two forms, the amorphous and the crystalline, the former being much more soluble than the latter. The more soluble form was converted into the other on boiling, and hence when milk was boiled calcium citrate was partly thrown out of solution. Scurvy might be prevented by adding alkaline phosphates which helped to keep the citrate in solution, or by merely pasteurising the milk when so much of the citrate would not be deposited.

Dr. GOSSAGE suggested that alkaline citrates might be added to the milk instead of the phosphates. Scurvy was not really common even amongst children fed on boiled milk. It was met with not so very infrequently amongst the poorer classes in the East End.

## PHARMACOLOGY AND THERAPEUTICS.

FRIDAY, AUGUST 3RD.

Dr. F. W. BURTON-FANNING (Norwich) opened a discussion on what he preferred to call

*The Hygienic Treatment of Pulmonary Tuberculosis.*

The result of living in the open-air was a feeling of well-being, increased appetite, improved sleep, and an inability to remain in a closed room; with this change there was a decided reduction of the micro-organisms in the sputum. The remedial effects were not limited to pulmonary affections but could be extended to other forms of tuberculosis, whether affecting bones, joints, or serous membranes. Lupus also was benefited. Modern experience also pointed to the amelioration of such specific fevers as enteric fever, variola, morbilli, and pertussis treated by the open-air method. Functional nervous diseases, like neurasthenia and migraine, were also benefited.

Sir J. W. MOORE (Dublin) referred to his experiences in the grounds of the Dublin Hospital. He insisted specially on the importance of free ventilation at night, windows being opened to leeward.

Dr. CHOWRY-MUTHU (London) attributed much of the benefit of sanatorium treatment to variety and excellence in cooking. A gain of about eight pounds a month was usual. Chronic cases and those complicated with gastric or bronchial catarrh were less suitable. The inhalation of igazol seemed to accelerate the cure. The principal elements in sanatorium treatment were a strong head and good organisation.

Dr. ERNEST KINGSCOTE (London) dwelt on the importance of avoiding draughts though following an open-air life.

Dr. W. CALWELL (Belfast) said that under systematic treatment gain in weight took place in spite of fever. Ordinary catarrh did not occur in the absence of artificial heating. Complicated cases were ill suited to the method. He recommended abundance of fresh air in the nursery.

Dr. JANE WALKER (London) thought that the patients did better in warm weather, though wind was injurious. Warmth and comfort could be maintained by proper clothing and management without artificial heat. Diminution of expectoration was noticed in most cases. She agreed that bronchitic cases did not do so well as others.

Mrs. ESTHER COLEBROOK (Peppard, Oxon.) referred to the overcrowding of the shelters in windy weather, which had an unfavourable influence.

Dr. D. SOMMERVILLE (London) stated that under the influence of light and oxygen tubercle bacilli might lose their pathogenic qualities and become saprophytic. He quoted instances of patients who had successfully carried out the treatment without going to a sanatorium.

Dr. S. WOODCOCK (Manchester) also spoke.

Dr. F. HOWARD SINCLAIR (Belfast) read a paper on

*The Open-Air Treatment of Consumption in Ireland,*

in which he showed that in spite of the greater humidity of the atmosphere results were as favourable as elsewhere. He dwelt on the necessity of consulting the individuality of patients both in the matter of exposure and food.

Dr. BERNARD O'CONNOR (London) spoke of 16 years' experience of the open-air method at the Hampstead Hospital, where the patients wore no head-covering.

The PRESIDENT (Dr. W. G. SMITH of Dublin) referred to the method as one of organised common-sense.

Dr. WOODCOCK also read a paper on the Transplantation of Phthisical Patients to the Country, in which he said that the onset of phthisis was largely a matter of income, occupation, and exposure to infection. It was two and a half times as common among the industrial classes as among other classes. The remedy he advocated was the establishment of consumption colonies where out-door occupations, such as gardening, forestry, stock-tending, and harvesting, could be followed by the patients. Judging by the German sanatoria, which were in close apposition to towns, there was no fear of local infection.

Dr. WILLIAM EWART (London) read a paper on the Subcutaneous Administration of Oxygen, either as free gas or solution of hydrogen peroxide. He described his method and also gave an account of some cases so treated. They were desperate from the outset and none actually recovered, though no harm was done and temporary improvement occurred in some.

## LARYNGOLOGY AND OTOLOGY.

### THURSDAY, AUGUST 2ND.

Dr. HERBERT TILLEY (London) described

*Two Cases of Chronic Frontal Sinus Empyema presenting Features of Unusual Interest,*

to illustrate some of the difficulties in the diagnosis and successful treatment of the disease.

CASE 1.—A girl, aged 19 years, sought relief on account of left nasal obstruction and severe frontal headache of 12 months' duration. Examination showed the left nasal cavity to be full of large polypi bathed in pus. The post-nasal space was occupied by a large adenoid mass and the faucial tonsils were hypertrophied. The anterior wall of the left frontal sinus was distended over an area of the size of a five-shilling piece. The right nasal cavity was in all respects normal. The polypi, adenoids, and tonsils were removed. Exploration showed the left antrum of Highmore to be free from pus, while irrigation proved that pus was present in the left frontal sinus in considerable quantity. The anterior half of the left middle turbinal was removed and the ethmoidal region was cleared as far as possible of all pathological products. In the course of a few days the left sinus was freely opened from the outside and its cavity, which was a very extensive one, was curetted free from all degenerate mucous membrane, a free opening was made into the nose, and the sinus cavity was packed with a strip of iodoform gauze two inches wide and three feet 10 inches long. It was noted during the operation that a curette could be passed well beyond the middle line towards the right sinus; it was thought that the extension was a diverticulum of the left sinus, and this surmise was strengthened by the sensation of a blind end given by the curette during the operation. The continuance of free suppuration from the left sinus showed, however, that some suppurating focus remained, and a week after the first operation the right sinus was opened and found to be as much diseased as the left. Both cavities were packed and irrigated every day for three weeks until covered with a healthy mucous membrane when the external wounds were allowed to close. The patient completely recovered and two months after the operation was perfectly free from any nasal discharge. The case illustrated that although both sinuses might be equally diseased and might communicate with one another through a pathological opening in the sinus septum, yet the pus might escape from only one nostril. In this case it was impossible to pass a probe into the right frontal sinus from the nose and hence the diagnosis of pus in that sinus could scarcely be made without an external operation. It would be interesting, Dr. Tilley said, to know the course of events in this case. If the left sinus was first diseased, he asked whether the ethmoiditis on the left side ought to be attributed to the irritation of pus flowing from the sinus above? Since there was no disease in the right ethmoid but advanced disease in the corresponding frontal sinus the view that pus might set up chronic disease of the ethmoid with its associated polypi, he considered, was not an impossible one.

The second case illustrated a difficulty met with in the successful treatment of the disease—namely, when all had been done to remove intra-nasal disease as a preliminary to the external operation, and when by the latter the diseased products had been carefully removed from the sinus, and a free passage into the nose ensued and careful after-treatment had been carried out, yet a small quantity of pus sometimes continued to flow from the sinus.

CASE 2.—A woman, aged 30 years, applied for relief from offensive nasal discharge of two years' duration. The frontal sinuses were both found to be diseased as was also the left antrum which was drained by the alveolar method. The external radical operation was performed on the left frontal sinus, a free passage was made into the nose, and a healthy granulation surface covered the walls of the sinus cavity before the external wound was allowed to close. The patient did fairly well, but there was always a slight discharge of pus into the nose, and a month after the operation an external fistula formed leading into the sinus. Three months later the sinus was again explored and the cause was found to be an extension of suppurating anterior ethmoidal cells outwards between the floor of the sinus and the orbit. These cells communicated with the sinus proper by a small aperture and thus this cavity was infected, although the greater part of it was obliterated by cicatricial tissue. By free removal of the partition walls these ethmoidal cells and the frontal sinus were thrown into one cavity; this was skin-grafted a week later by Thiersch's method. The plan adopted was the same as was carried out in the mastoid operation. Dr. Tilley said that it was too early to speak of the result of the skin-grafting, but so far as he could see it would be eminently satisfactory and in future he would adopt this method of dealing with frontal sinuses in the hope that by its means the same successful and ideal results would be gained together with the great saving of time to the patient that had been secured by skin grafting in the operation for chronic suppuration of the mastoid antrum.

### FRIDAY, AUGUST 3RD.

*Some Points bearing on the Pathology and Prevention of Loss of Voice in Singers.*

Dr. JOBSON HORNE (London) made a communication on this subject and illustrated it with lantern photographs. He alluded to the often heard lament of the present age over its poverty in fine voices and the want of lasting power in singing voices generally. Various explanations had been offered. Some had attributed the decline in singing to the rise in pitch which had been gradual, yet very considerable, during the past century; others had held composers responsible for not having sufficiently considered the voice with the result that the vocalist had had to disregard his capabilities and put his vocal cords at everything—singable or unsingable. It was not the purpose of the paper to consider whether these explanations were or were not sufficient; it was to discuss the pathological processes that would take place in the vocal cords from excessive or unnatural use, processes which represented in modern language the result of "strain" and the cause of "loss of voice." The excessive use of the so-called "chest" register and the disregard for the so-called "falsetto" and "head" register were taken as instances of unnatural use of the voice. Reference was particularly made to the work of Dr. Musehold of Berlin which had advanced the photography of the living larynx to a point that had not been surpassed, and photographs by Dr. Musehold were shown on the screen demonstrating the condition of the vocal cords during the production of the middle "C" in the "falsetto" and "chest" registers respectively. Dr. Musehold had shown that in the falsetto register the glottis was only widened and narrowed, whereas in the "chest" register the glottis was opened and closed, and the cords themselves became more rounded or sausage-shaped in

contrast with their condition in the "falsetto" register. This, Dr. Horne pointed out, entailed greater muscular tension and a greater flow of blood to the submucous and superficial vessels. It was possible to verify this by transillumination of the larynx; if in a darkened room the electric lamp used for transilluminating the frontal sinus was placed against the thyroid cartilage and the image of the cords was observed in a mirror in the pharynx it would be noticed that during the production of a "chest" note the cords became more opaque. This increased opacity was partly due, perhaps, to increased muscular tension, but it was mainly due to increased congestion of the vessels of the vocal cords. Dr. Horne did not wish it to be thought that he was arguing against the use of the "chest" register; he only desired to draw attention to the condition of the cords during its use—or rather excessive or unnatural use—with a view to considering the pathological changes that might result. The superficial vessels, owing to the determination of blood to the surface of the cords, might become tortuous to a degree almost amounting to varicosity. The increased vascularity if often repeated acted as an irritant and the minute capillaries and vascular elements proliferated. This was illustrated by sections through cords the subjects of "chronic laryngitis," which was not necessarily the outcome of an inflammatory process. Hyperplasia of the connective tissue elements and of the glandular structure ensued. Increased functional activity accompanied the latter and was evidenced by a greater flow of mucus on to the surface of the cords and more frequent efforts to clear the voice. The formation of new connective tissue was progressive and the strands of fibrous tissue finding their way in amongst the glandular structure compressed and gradually obliterated it. The glands degenerated and were replaced by fibrous tissue. It was further shown that the muscle fibres themselves become surrounded by connective tissue, isolated areas were cut off and degenerated and the degenerated muscle fibres eventually being replaced by fibrous tissue, the progressive nature of the morbid process was renewed. With this progressive fibrosis the newly-formed vessels were also compressed and gradually disappeared; their disappearance might be partly accounted for by the cords becoming less active in proportion to the loss of muscle tissue. The epithelium undergoes, *pari passu*, a hyperplasia, in time followed by a metaplasia, with, perhaps, the development of warty excrescences about the vocal processes and a diffuse pachydermia laryngis. The terms "chronic laryngitis" and "chronic inflammation," Dr. Horne considered, were not applicable to the morbid process that had been described. The process was not essentially an inflammatory one; moreover, "chronic inflammation," like negative pressure, was non-existent. It would be better for the present to refer to the whole process by its prominent feature as a *fibrosis*. In even quite the earlier stages of this fibrosis the singing function must become seriously impaired. The intrinsic muscles, highly differentiated and specially trained, only too readily forget their office. The changes in the epithelium must materially affect the vibratory power of the cords and the quality of the notes produced. The treatment indicated by a study of the pathogenesis was rest—absolute rest; local applications, local remedies of all kinds, could only aggravate and irritate the process it was sought to arrest. As regards prevention it was of first importance to ascertain the capabilities of any individual vocal organ and then develop rather than train them, and above all things to let the voice be natural.

Dr. STCLAIR THOMSON (London) inquired whether Dr. Jobson Horne from his researches into the pathology of the vocal cords was able to offer a satisfactory explanation for the constant site of singers' nodules on the vocal cords.

Mr. E. WAGGETT (London) asked, if the use of the "chest register" was a cause of loss of voice, why baritones and basses did not lose their voices more readily than tenors.

Dr. W. A. AIKIN (London) asked what meaning Dr. Horne attached to the terms "falsetto," "chest," and "head" registers. He considered that these terms occasioned a good deal of confusion and it would be better to give them up for more scientific ones.

Dr. LAMBERT LACK (London) said that after looking into books on the subject he had found himself in the same difficulty as the last speaker.

Dr. HORNE, in reply to Dr. StClair Thomson, regretted that he was not at present prepared to usefully answer the question. He considered that an explanation not based upon histological evidence would be premature. In reply to Mr. Waggett he said it was rather the abuse than the use of the "chest register" to be considered a cause in "loss of voice" and for that reason it was more often a cause amongst tenors than baritones. He fully agreed with Dr. Aikin and Dr. Lack that the time had come when the terms referred to might be given up for others denoting the physical appearances of the cords during the use of these registers observed and described by laryngologists.

Mr. ERNEST WAGGETT read a paper on

*Bezold's Complication of Suppurative Mastoiditis.*

Escape of pus, he said, from the mastoid cells into the digastric groove was not extremely rare, but the following instance was worthy of attention on account of certain diagnostic features which were unusual, while points in the history of the case raised questions of practical value. The patient was a man, aged 30 years, with muco-purulent otorrhœa of three months' duration. A minute perforation of the anterior inferior region of the drumhead was enlarged by linear incision, and antiseptic treatment was prescribed coupled with repeated Politzerisation. Three weeks later the patient returned with true pus issuing from the perforation which had assumed its former minute dimensions. Occipital pain was present, but no local tenderness. Incision of the drumhead was repeated. Within 24 hours an area of œdema developed over the site of the exit of the mastoid vein from the posterior aspect of the mastoid process. Sinus phlebitis was therefore suspected, but within a few hours swelling and œdema appeared in the situation of the infra-auricular gland behind the maxillary articulation and a diagnosis of suppurative adenitis was made. Positive evidence either of mastoid suppuration or sinus phlebitis was completely wanting. An attempt was made to exclude Bezold's complication just before operating, firm pressure being exercised over the external swelling while the perforation was observed through the speculum. After such pressure had been exerted for about 20 seconds pus was seen to spurt from the perforation, establishing the diagnosis of Bezold's complication. The mastoid operation was performed and the greater part of the mastoid process was removed. A small fistula piercing the roof of the digastric groove was found leading to an abscess cavity which extended forwards from under cover of the digastric muscle. The mastoid cells were filled with inodorous pus and evidence of caries or necrosis was wholly wanting. Recovery was rapid, uneventful, and complete. The points of interest raised by this case might be enumerated as follows. 1. Repeated Politzerisation coupled with the untimely re-union of the incision in the drumhead evidently served to inject the muco-pus into the antrum and to convert a case of simple tympanic disease into a serious mastoid suppuration. Politzerisation should never be practised in these cases unless the tympanic cavity was observed to be in very free communication with the meatus. 2. In some individuals the outer walls of the mastoid cells were sufficiently thin to be ruptured by the pressure of retained pus without the aid of caries or necrosis. In this instance repeated inflation of a valvular system of cavities might have accelerated the rupture into the digastric groove. 3. Tenderness and œdema as observed in this case at the posterior end of the digastric groove (simulating phlebitis of the mastoid vein) should prove a valuable sign of the commencement of the complication. Statistics as to its occurrence were desired. As a rule Bezold's complication was only diagnosed when a large abscess in the neck had developed. 4. The simulation of infra-auricular adenitis was very unusual, the pus as a rule tracking downwards along the course of the great vessels. In testing an infra-auricular abscess by Bezold's experiment it was essential for the surgeon to keep his eye upon the tympanum whilst he exerted digital pressure, for collections of pus in this situation sometimes communicated directly with the lumen of the meatus and the experiment might lead to an erroneous conclusion unless the above-mentioned precaution was taken. 5. In this case the pus did not spurt through the perforation until pressure had been exerted for some 20 seconds. A case was cited in which prolonged pressure would probably have produced intra-cranial mischief. Momentary pressure will be of no value where pus had to be propelled along a narrow tortuous passage; nevertheless, the question of safety imposed a limit to the duration and degree of digital pressure to be employed.

## TROPICAL DISEASES.

FRIDAY, AUGUST 3RD.

*Liver Abscess.*

The discussion on this subject, adjourned from Thursday, August 2nd, was continued.

Dr. P. MANSON (London) referred to the difficulty of finding pus by exploration and to the necessity for some means of diagnosing the presence of a liver abscess. He stated that the amœba coli was not met with in the sputum unless the liver abscess opened directly into a bronchus, and therefore that the presence of this parasite was diagnosed at too late a stage to be of much value. Leucocytosis was of some value as an aid in diagnosis. Dr. Manson considered that the methods of treating liver abscess in England were more severe than appeared to him necessary. He had practised and taught the benefits of using the trocar and cannula in the treatment of liver abscess, and found that by the insertion of a large drainage-tube afterwards excellent results were obtained. This practice, he found, had been successful in the hands of others. He could not see the necessity for removal of a portion of a rib and the extensive stitching together of parts which such a means of approaching a liver abscess entailed. He was at a loss to understand the cause of the extensive hæmorrhage which had occurred in the Bombay hospitals as the result of exploration by the needle of an aspirator.

Major RONALD ROSS, I.M.S. (Liverpool), stated that in a case of liver abscess which he had lately seen in Liverpool there was no evidence of malarial infection, but leucocythæmia was marked.

Mr. JAMES CANTLIE (London) agreed with Dr. Manson in his remarks concerning the advantages of using the trocar and cannula and condemned the heroic measures in vogue in England. He had long practised the method taught him by Dr. Manson and had every cause to be satisfied with the results. The treatment by the trocar and cannula was one which a tropical practitioner far away from skilled assistance could readily use when single-handed; but the transthoracic or laparotomy methods of reaching pus in the liver involved skilled help in surgical details which, in the great majority of instances in the colonies, was not at hand. The more simple the means of treatment the earlier would investigation of the liver for pus be attempted, and in consequence the more lives would be saved. He could see but little advantage in exposing the liver by laparotomy, as after exposure the liver had to be punctured to reach the abscess.

The PRESIDENT (Colonel K. MACLEOD, I.M.S., of Netley) agreed with all Dr. Manson had said about the unnecessary severity which was practised in operations for liver abscess by surgeons in England. He had seen a laparotomy performed in a case of suspected pus in the liver and the liver exposed by a free incision; the pus was not found, yet after three days the abscess found exit by way of the bowel. When pus from a liver abscess reached the lungs or the pleuræ, the operation practically became one for empyema and the removal of a piece of rib was necessary; or, again, should biliary calculi be present in the pus and the intercostal space prove too small for extraction a piece of rib might require to be cut away. Colonel MacLeod referred to intercostal fluctuation as a sign of pus, noticed most readily on gentle coughing.

*The Cyprus Sphalangi and its Connexion with Anthrax.*

Dr. G. A. WILLIAMSON (Cyprus) sent a communication on this subject. What was known locally in Cyprus as "Sphalangi bite" seemed to be connected with an insect resembling an ant and belonging to the order Hymenoptera, genus Mutilla, a sting-bearing insect. In a case related by Dr. Williamson a woman was awakened in the night by a sharp bite on the temple; in the morning a dark indurated patch had formed there and an alarming œdema of the face and features ensued. The discharge from the puncture was found to be loaded with anthrax bacilli. Anthrax was common in Cyprus, and the carcass of a dead sheep near by seemed to be the source whence the Mutilla insect had obtained the anthrax bacillus. The treatment consisted of local application of the thermo-cautery and hypodermic injection of a mixture of mercuric chloride and iodide of potassium.

Major RONALD ROSS read a paper on

*Some Suggestions for the Improvement of Sanitary and Medical Practice in the Tropics.*

Major Ross pointed out the urgent necessity for equipping medical practitioners in the tropics with instruction in such subjects as parasitology as distinct from bacteriology. There were few specialists in this subject and still fewer authorities on comparative parasitology. In London and Liverpool schools for tropical medicine were established, but it was necessary that medical men other than those entering the services, such as private practitioners and ship surgeons, should be trained previously to taking up their duties. He advocated a supply of microscopes, by hire if necessary, to assistant surgeons in India, so that at least the dejecta could be examined. A want of reference libraries even in the large Indian cities was a great drawback to investigations and Major Ross hoped soon to see small modern medical libraries in all the larger towns of our tropical possessions. Specialists in research, organised on a proper footing, were much wanted, and if this country hoped to maintain its scientific position and to do its duty to the natives under its rule provision ought to be made for their support. There was much need, according to Major Ross, of a central scientific authority, and although the Royal College of Physicians of London and the Royal Society were moving in this direction the attainment of such an authority seemed a long way off being consummated.

Dr. S. K. MULLICK (London) stated that for the Indian medical chairs specialists were sorely needed; in the meantime an officer was told off for duty to a chair who was thoroughly untrained for the post. There could be no enthusiasm imported into Indian schools until they had teachers they could respect for their scientific attainments.

The PRESIDENT held that the custom of appointing scientific investigators to a teaching chair was not always a happy one. It frequently happened that a good investigator was a bad teacher, and *vice versâ*, and the primary function of a lecturer in their schools was to be a good teacher.

*Yaws.*

A discussion on this subject was opened by Mr. JONATHAN HUTCHINSON, F.R.S. (London). A case of yaws was shown by Mr. Hutchinson. The patient, a young man (European), had resided on the West Coast of Africa and had been sent home in consequence of the disease. The lower extremities were covered by an eruption, evidently of a chronic nature, and there were scars on the wrists and palmar and plantar psoriasis. Mr. Hutchinson declared his belief to be that yaws was the source whence syphilis was introduced into Europe. He quoted historical data in favour of the supposition and by a number of photographs and illustrations upheld his belief. He related an instance of a surgeon who pricked his finger whilst operating on a patient suffering from yaws and subsequently developed all the symptoms of syphilis. On the authority of Dr. Daniels he stated that yaws was prevalent in Fiji and that syphilis was unknown, and he maintained that it was because the population was already infected that inoculation by the syphilitic virus was impossible. The photographs sent him by several medical men in different parts of the world seemed to prove the identity of the diseases, although the contributors held opposite beliefs to himself. The slight differences in the diseases he attributed to climate, and the fact that yaws was not met with in this country was because sailors and others becoming infected by yaws abroad developed true syphilis when they came home. Mr. Hutchinson held that the prevalent belief that there was no primary sore in yaws was a mistake and were the cases carefully investigated a local primary sore would always be found. He illustrated the modified sore met with on the skin in yaws by analogy with the slight local signs manifested when syphilis was communicated by, say, an accidental wound on the finger.

Dr. DAVIES (Samoa) stated that in Fiji he had never seen yaws except in children; adults did not seem to acquire it, but so prevalent was it amongst children that parents looked upon it as a healthy thing to have. The Fijians introduced the disease into Samoa and from Samoa it had been carried by the Samoans to other islands of Polynesia.

Dr. P. MANSON opposed Mr. Hutchinson's theory. He believed that Mr. Hutchinson had been misled by untrustworthy diagnosis and by taking too credulously the statements of others. Dr. Manson maintained that inoculation

with yaws did not prevent the inoculated person subsequently contracting syphilis and *vice versâ*. Yaws, like several parasitic affections, died out on reaching a temperate climate, as a high temperature was the one necessity for its continuance and development.

Mr. D. C. REES (London) stated that he had seen yaws and syphilis in the West Africa Coast Hospital side by side, but that in the hinterland he had met with yaws only. The natives in West Africa looked upon syphilis as a newly introduced disease.

The PRESIDENT gave it as his belief that the case shown by Mr. Hutchinson was a case of syphilis, and all present declared that such was their opinion.

Dr. PHINEAS ABRAHAM (London) brought a well-marked case of Leprosy for demonstration. The peculiarity of the case was that in the centre of the pale anæsthetic patches a deep, dark, pigmentary deposit was present. Dr. Abraham also showed a case of Lichen Scrofulosum in a Young Girl.

At the close of the meeting a vote of thanks to the President was proposed by Dr. P. MANSON and seconded by Mr. CANTLIE and unanimously carried.

## NAVY, ARMY, AND AMBULANCE.

FRIDAY, AUGUST 3RD.

The proceedings of this section were opened by the reading of a paper by Surgeon-General J. B. HAMILTON, A.M.S. (ret.), entitled

*On the Past, Present, and Future of the Royal Army Medical Corps.*

The difficulties and tribulations of the service in the past were briefly sketched and the various stages of progress and evolution of the service were step by step gone into till the present time. For the amelioration of the present difficulties the following propositions were put forward for consideration: that there should be an increase of pay and allowances to equal those of the combatant rank, especially in India; increase of the *personnel* both at home and abroad, so as to insure a fair amount of leave for private affairs and "study leave," full pay and allowances being granted during the "study leave," such as travelling, cost of courses, &c.; and general increase of pay, as the lack of men coming forward was due to the poor pay. He discussed the position of the principal medical officer on the staff of general officers, and the want of local and executive rank was dealt with, especially in the South African war. The position of Surgeon-General was anomalous; he should have the title of Major-General either in the Royal Army Medical Corps or on the staff of the army, the Colonel of the Royal Army Medical Corps being also on the staff of the army in the latter case. A commission should be appointed to take evidence and report on the causes of the dearth of men for the Army Medical Staff. The Secretary of State for War should state clearly what steps he proposed to take as regards increase of the service. Militia medical officers should be re-appointed, and, being well trained, would be a valuable reserve. Military titles should be granted to Volunteer medical officers. The Secretary of State for War should issue definite orders that warrants should not be tampered with but should be carried out as promulgated and not carried out in the letter and broken in the spirit.

Surgeon-General T. F. O'DWYER, Principal Medical Officer of the Aldershot District, said that the position of the principal medical officer was on the lines of communication. If the lines of communication were at all long then he was as likely as not to be at some distance from the staff of the general officer commanding. If he was actually on that staff he would be near headquarters, where he would be able to elicit what was going to happen beforehand and thus be able to make necessary arrangements. They could and ought to adopt those measures used in the German army. The principal medical officer ought to know in advance what was going forward so as to make arrangements to meet any results of military movements. The principal medical officer on the staff of all general officers should have a certain amount of executive power. Discipline, engineering, and supply were dealt with by special officers having executive powers, but in sanitary matters the principal medical officer had no such power.

Surgeon-Major T. F. S. CAVERHILL (Edinburgh) said that owing to the ruling of the General Medical Council on the matter of unqualified assistants there was a great demand for qualified men for the post of assistant and *locum tenent*. Unfortunately, the demand was greater than the supply, consequently it would become increasingly difficult to get men in future years for the army. The Government would have to deal with the matter as it was becoming a very pressing one. As regards leave it was a great necessity that ordinary as well as "study leave" should be got, for under present conditions at home and in India sufficient leave and rest were not obtainable. There ought to be formed a specially skilled sanitary body in the Royal Army Medical Corps as a sort of sanitary consultant department.

Surgeon-Captain J. HARPER, V.M.S.C., said that if the Volunteer Bill now before Parliament passed in its present form he would certainly resign his commission.

Surgeon-General HAMILTON, in reply, remarked that the Engineers on whom at present devolved many of the sanitary undertakings were miserably equipped as far as sanitary knowledge was concerned. The principal medical officer ought, as Surgeon-General O'Dwyer had said, to be at the elbow of the general officer commanding. The present system of separation was absurd, as the principal medical officer's opinion had to filter up to the general officer commanding through his staff officers. No volunteer surgeon making £1200 a year would leave his practice and income and go off to an isolated post or fort on a small salary. Reserve medical men would not come out if called upon for the same reason. Many of the reserve medical men kept on the War Office lists were mere physical cripples, some actually deaf or almost blind. He would have all reserve medical men examined every year in order to ascertain their physical efficiency. As regards sanitary matters he thought that the Medical Department did not have an adequate knowledge and training. The cheese-paring of the Treasury was the cause of the present difficulties.

Mr. CLINTON DENT (London), who has recently returned from South Africa, read a paper entitled

*On Modern Small-bore Rifle Wounds,*

a short abstract being as follows. So much had been written during the last few months on this subject that it was well-nigh impossible to break new ground. It might be of some service, however, if he endeavoured to summarise some of the conclusions that appeared to be justified by the evidence already collected. Broadly speaking, bullet-wounds of all kinds in the South African campaign had done well. Recoveries from very severe wounds had been numerous and many of these recoveries had been most remarkable. The percentage of wounded men who had been found fit to return to duty had been unusually high. Wounds inflicted causing permanent disability had been less frequent. Injuries the consequences and results of which necessitated amputation had been in proportion fewer than in previous wars. Conservative surgery had most properly been carried farther and with more successful results than in former campaigns. These satisfactory results had been ascribed mainly to the "humanity" of the modern small-bore bullets. He believed that the surgical healthiness of the climate of South Africa and the widespread employment of the "open-air" method of treatment had had quite as much to do in bringing about this most satisfactory state of affairs. Septic complications attacking either bullet or operation wounds had been very rare. The idea that the heating of the bullet had any influence was probably universally discarded. The heating effect was never seen even when bone was struck, for arrest of motion was possibly the mode of transformation of motor energy into heat, yet heat effects were not seen. Again, the bullet even if made white-hot by aerial friction passed far too rapidly through the tissues to have any cauterising effect. The "hydrodynamic" theory, as explaining the destructive effect of certain bullet wounds, had now few adherents. As instances of cases in which military surgery was now much more conservative than formerly might be cited perforating abdominal wounds, compound fractures, wounds of joints, and nerve injuries. All wounds did well, even shell wounds; the only joint wound which did not do well was that of the ankle. As instances of injuries in which surgery was now much more active were those of the head, which nearly all had to be and were operated on and with success.

Surgeon-General O'DWYER said that an important point settled by this campaign was that abdominal wounds made by small-bore high velocity bullets should not be operated

upon. Men wounded through the lung were subsequently to recovery liable to dyspnœa on exertion.

Surgeon-Major CAVERHILL called attention to the fact that Pirogoff in the Russo-Turkish war found that wounds of the ankle-joint did very badly and that in the American war all ankle-joint injuries were invariably fatal.

Surgeon-General H. S. MUIR, C.B., made a few remarks.

Surgeon-General HAMILTON related some experiments with Rifle-bullets on Mechanical Objects. He found that a long plank box filled with sawdust, at which an express bullet was fired was variously affected under different conditions. If the bullet was propelled by two drachms of powder the bullet went right through the box from end to end, sawdust and all; if, on the other hand, it was propelled by five drachms of powder it did not pass far into the sawdust. This was strange and he could only explain it by the fact that the larger charge of powder caused higher velocity and as velocity "set up" or deformed the bullet; the larger charge giving greater velocity, could not therefore cause such penetration as the smaller charge which did not deform the bullet so much. He also took a long iron-bound box, cut out a square at one end and replaced it by thick india-rubber, filled it with water and then fired a high velocity bullet through the rubber right through the box lengthwise. The result was that although the bullet was small the box was burst open in all directions. This probably would explain the fact that nerves were injured by Mauser bullets which had not gone near the injured nerve, the nerve being really damaged by the tensile rending strain of lateral centrifugal force. Spherical ball was more destructive than were conical small-bore bullets.

Mr. CLINTON DENT, in replying, stated that the only cases in which clothing was carried into bullet wounds was in the case of kilts worn by Scotch regiments. This was interesting, as perhaps the plication of the kilting tended to cause this. Nerves which were thought to be severed were found on operation to be intact, yet there were present symptoms of injury, as intense pain, paralysis of groups of muscles supplied, &c. There was no doubt that the bullet had not touched the nerve, for the pencil-tract of the bullet could be seen quite straight and away from the nerve. He related a case where the knee-joint was traversed by a bullet which also cut the popliteal artery. The man could not put on his field dressing, as every time he moved to do so he was made a target of, so he let matters take their course. The blood clotted in the sun, as the man believed; he was taken to the field hospital, moved down country in the train, over a long distance, to Wynberg Hospital, and it was not till he was there and had his wound dressed and his first dressing removed that the artery spurted, was promply cut down upon, and tied with success and recovery. Asked as to shell-wounds he stated that at Paardeberg there were not so many casualties amongst the Boers as expected from shell-fire, owing to Lord Roberts's humanity which caused the wagons only to be fired at, for the sake of the women and children, otherwise the results would have been different. At Modder River the Boer trenches were full of shrapnel bullets and they must have suffered there. He stated that at Paardeberg many dead Boers must have been cast into the river, for in a pool there the soldiers continued to drink the water till the pool ran dry and then they found two dead Boers at the bottom.

In the absence of Staff-Surgeon W. J. COLBORNE his paper entitled

*On Infectious Disease on Board Ship*

was read by one of the secretaries. The space allotted to sick on board ships of war was limited. Though limited, it was sufficient for all ordinary purposes, yet provision should be made for infectious disease, for observation, and for isolation. On visiting a port the medical officer should make inquiries as to the prevalence or absence of infectious diseases, the extent, and the district infected, in order to warn the men against visiting that district. The ship should remain in that port only according to circumstances and no longer. Persons visiting the ship, such as washerwomen, &c., should be carefully supervised. All minor ailments in that port occurring on board ship should be carefully watched and isolation practised when a case was doubtful; messmates as well as the sick man should be watched. A proper place for isolation must be found either below or above decks. The ventilation was important, as it should lead directly out above decks and not lend itself to the dissemination of infection between decks. All such ventilators should be stopped up. The patient and the attendant should not leave the apartments. Where no apartment could be found a portion of the deck should be totally screened off from deck to deck and the screen kept moist with perchloride of mercury solution, 1 in 1000. No intercourse of any sort should be allowed with the outside, not even for food. If the patient were landed to hospital the attendants, the boat, and the crew should be disinfected by appropriate means. When disinfecting after recovery or removal at least three pounds of sulphur to 1000 cubic feet of space must be burned. The screen should be soaked in 1 in 1000 perchloride solution. During an outbreak all men should be warned to report any slight ailment at once. In small-pox every man should be revaccinated. If feasible every infectious case, or even cases under observation, should be landed. By the above means epidemics on board ship could be easily limited and stamped out.

In connexion with this section was a loan collection of military medical equipment. In the lecture hall were a St. John Ambulance Association litter on wheels; an Ashford litter on wheels; a Furley stretcher; a Derham carrying sheet-stretcher specially designed to go through narrow doorways and into railway-trains, and to carry a patient sitting as well as lying; and a Bedford invalid jacket and ice-cradle. In the side recess there were a model mission hospital tent, as used in the United States Army; Mackenzie Davidson's x ray localiser and an x ray localising couch; a patent pneumatic ambulance hammock and camp bed; a set of surgical saddle-bags fitted up; a Burroughs and Wellcome Congo medicine chest; a Maw, Son, and Thompson medical valise; No. 1 and No. 2 field service equipment chests of wicker covered with hide for lightness; a St. John Ambulance service equipment; a Mauser and Lee-Metford rifle, with bandoliers and ammunition; fragments of shells and a one-pound shell from a Vickers-Maxim (Pom-Pom), which appeared insignificant in comparison with its terrible nerve-shaking effects in action. In the grounds was erected a "Tortoise" tent hospital. There was also an exhibit, with careful drawings, of soldiers' boots, their defects and remedies, by Mr. Noble Smith.

## THE ANNUAL MUSEUM.

(*Continued from p. 519.*)

### V.—MINERAL WATERS, BEVERAGES, &c.

The most interesting exhibits in this section were undoubtedly those connected with the natural mineral waters of our home health resorts. Foremost amongst these were the interesting collection of specimens of salts and models of baths from Harrogate, exhibited by the Harrogate Corporation. The feature of the Harrogate Spa is, of course, the sulphuretted hydrogen water which, we believe, holds its own in regard to its uniformity of composition, and especially in regard to the constant quantity of sulphuretted hydrogen gas which it contains. Specimen cases were shown containing the salts obtained by evaporation of several of the Harrogate waters. The efficacy of the Harrogate wells is well known. The Harrogate Corporation bottle their mineral waters both aerated and plain. The saline waters of the Royal Leamington Spa were also brought to the notice of the visitors. These natural mineral waters may be obtained plain, aerated, or concentrated. Special attention has been paid at Leamington in the direction of acquiring all the latest apparatus indicated in successful balneological practice. This includes rooms heated by electricity and radiant heat and light baths and hot-air baths. Many well-known continental natural mineral waters were exhibited by Messrs. Ingram and Royle of East Paul's Wharf, 26, Upper Thames-street, London, E.C. These included bottled specimens of the Vichy springs and of the waters of Carlsbad. This firm also are agents for the supply of the water, plain and aerated, of the remarkable barium spring at Llangammarch. The important constituent of this spring is chloride of barium, but associated with it also is chloride of calcium. These waters have come prominently forward recently as of value in rheumatic disorders. The waters are powerfully diuretic. The well-known natural aperient water which occurs abundantly in the wells near Budapest was shown on the stall of Andreas Saxlehner, London Agency, Trafalgar-buildings, Charing-cross, London, W.C. Hunyadi Janos, as it is called, exhibits an interesting and, it should be remarked, constant composition, the magnesium sulphates and sodium sulphates being in equal proportion. One of the

largest exhibits was that by the Apollinaris Co. of 4, Stratford-place, Oxford-street, London, W. Besides Apollinaris water this company also showed Johannis water, as well as specimens of the latter water with lithia and potash added. The exhibit included the bitter aperient waters of Friedrichshall and Apenta water. Several very interesting applications of "sparklets" to the instantaneous aeration of all liquids were shown by Aerators, Limited, of Broad-street-avenue, London, E.C. Amongst the novelties worthy of note were the tablets for the extemporaneous production of soda, potash, and other mineralised waters. Fruit powders are also prepared for the easy production of sparkling summer drinks. This neat little apparatus is most convenient in use and is an excellent travelling companion and offers the undoubted advantage that the consumer can select for himself the liquid he wishes to have aerated. In this section Condal water is worthy of mention, since it is distinguished from other aperient waters by containing as its mineral laxative almost exclusively sulphate of sodium. Magnesium sulphate also occurs, but not in important quantity, and common salt also is present to the extent of nearly one grain per ounce. Specimens of the bottled water were shown by the Condal Water, Limited, 38, Walbrook, London, E.C.

There were very few exhibits coming under the class of beverages. The exceptions were the lime-juice cordial and clarified lemon squash (Stowers's) exhibited by Alexander Riddle and Co. of 36 and 38, Commercial-street, London, E.; medicated wines, including coca wine, beef wine, and a special ferruginous burgundy, by Stephen Smith and Co., Limited, Malmesbury-road, Bow, London, E.; samples of Norfolk cider, the excellence of which we have already pointed out in our analytical columns, exhibited by Messrs. W. Gaymer and Sons, Attleborough, Norfolk; and the lime and lemon preparations and lemon squash and ginger-beer crystals of Messrs. Feltoe and Smith of 25, Augustus-street, Regent's Park, London, N.W. This section, as will be seen, shows a distinct falling off in the number of exhibits as compared with last year.

### VI.—PUBLICATIONS, &c.

There was but a small representation of publishers this year. Messrs. Macmillan and Co. had a special selection of their publications dealing with medicine and surgery, foremost amongst them being the "System of Medicine" by Professor T. C. Allbutt, which is now completed by the publication of the eighth volume, and the "System of Gynæcology" edited by Professor Allbutt and Dr. W. S. Playfair. There were several typewriters shown, amongst them being the Blickensderfer machine (London Depot, 9, Cheapside, London, E.C.), and the "Oliver" typewriter (42, Poultry, London, E.C.). Lastly, Mr. B. Allsop of Shipley, Yorks, explained his A B C system of medical book-keeping which is well worth the attention of our readers.

In previous years we have generally devoted a final paragraph to the description of exhibits which we have classified as more or less of a miscellaneous character. On this occasion there were, practically speaking, no exhibits of this class to describe.

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LONDON MISSION HOSPITAL, CHUNG-KING.—A medical branch of the London Missionary Society was started in Chung-King in West China on the Yangtse river in 1892, Chinese buildings being utilised for the purpose. A new building of three storeys to accommodate 80 patients was opened on Dec. 23rd, 1899, by Mr. F. A. Fraser, the British consul, the company including the consuls of France and the United States of America, Chinese officials, both civil and military, and many others. Mr. Fraser delivered an eloquent address in the course of which he remarked that the hospital was said to be the largest in China west of Shanghai. A general meeting was afterwards held in one of the wards, with the Rev. J. Wallace Wilson, chairman of the London Missionary District Committee, in the chair. The Rev. A. E. Claxton, secretary of the district committee, in a sketch of the operations of the society in Chung-King, spoke most highly of the work accomplished by Mr. Richard Wolfendale, the medical officer of the hospital, who came to the town in 1897, and to whose energy the erection of the new buildings was mainly due. The Rev. O. F. Hall, M.D., and Dr. Laville of the French army medical department also spoke.

# THE THIRTEENTH INTERNATIONAL CONGRESS OF MEDICINE,

HELD AT PARIS, AUGUST 2ND—9TH, 1900.

THE day following the official close of the labours of the Congress showed little abatement either in the numbers of medical men remaining in Paris to visit the various picture-galleries and churches or in the numbers of those staying over to continue their professional labours at the different hospitals. In the Boulevard Diderot at the Hôpital Saint-Antoine from 60 to 70 members thronged the small wards and overflowed into the passages of the building set apart for the demonstration by Dr. Lermoyez to the Otological and Laryngological sections. So little was to be seen or heard by reason of the many members present in such a confined space that not a few betook themselves across the spacious grounds of the hospital to a large amphitheatre in the main building where over 100 medical men had assembled to hear Professor Hayem explain his work on the blood and detail his researches on diseases of the abdomen. Professor Hayem's teaching was rendered extremely interesting to those of his hearers who followed French with difficulty by reason of the excellent lantern slides exhibited in explanation of the lecture. Most of the clinics at the various hospitals in Paris were attended by large numbers of members, and especially was this the case at the clinic held by Professor Raymond at the Salpêtrière. To those unaccustomed to the more serious cases of hysteria the uncontrollable attacks exhibited by the patients in the small ward immediately adjoining Charcot's Museum must have been a revelation, for they surpassed in violence and extravagance any of the illustrations usually found in medical text-books. Dr. Pierre Marie's clinic at Bicêtre also attracted a large attendance, though it necessitated a short journey in order to be present—a disadvantage, however, which was amply compensated for, judging by the numbers of those who found their way to this centre for neurological work.

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Mr. F. B. TURCK of Chicago gave a demonstration before a numerous audience of his methods for preventing the occurrence of shock and infection in the course of operative procedures. On this occasion the almost entire absence of any practical knowledge of the English language by the members of the Congress was rectified by the kindness of Dr. W. Ewart (London) and of Dr. Waters, who performed very efficiently the duties of interpreters for the Chicago surgeon, and it was due to their efforts that Mr. Turck's work received such an enthusiastic and appreciative reception in Pavillon No. 7 of the École Pratique.

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It has been decided, as already stated in our columns, to hold the next International Congress of Medicine at Madrid in three years' time.

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(FROM OUR SPECIAL CORRESPONDENT.)

To all inquiries concerning medical and surgical exhibits the officials of the International Medical Congress replied by referring members to the Paris Exhibition. Scattered over an immense area, and very often difficult to discover, even when some particular portion of an enormous building has with much labour successfully been found, the medical exhibits as a whole are completely lost in the huge show on the banks of the Seine. On the ground floor of the "Palais de la Ville de Paris" an old four-poster bed from the Hôtel de Dieu Hospital is displayed. It contains the effigies of four patients depicted as suffering from different maladies and looks as insanitary and repulsive as the splendid specimens of x-ray photographs of simple and compound fractures

shown in the same building look modern and scientific. The next building containing medical exhibits on the right bank of the Seine is the Palais des Congrès immediately before reaching the Pont de l'Alma, and here the section for Switzerland attracts notice, especially the specimens shown by Surgeon-Colonel Bircher demonstrating the effects of hand weapons of ancient times as contrasted with the results on the human body of modern fire-arms. According to this exhibit, which is extensive and well divided, prognosis in cases of severe wounds from shrapnel is far more serious than in cases of similar wounds inflicted by modern rifle fire. Before leaving the Palais des Congrès one notices in the part reserved for Italy the records of the successful work inaugurated by the assassinated King of Italy in providing night refuges for the sick and others in the streets of Rome. A dusty walk behind "Old Paris" and then beside the river past some curious weird-looking craft anchored under the pleasing legend of "Navigation de Plaisance" leads to the Trocadèro palace where Cuba shows a collection of sera from the laboratory of that colony. Further inquiry into this up-to-date exhibit is prevented by the absence of any card explaining where the laboratory is in Cuba that sends the sera. Passing across the Seine by the Pont d'Iéna and taking first the galleries on the right hand side of the Champ de Mars there is to be seen in the Austrian portion of the Palais des Sciences on the ground floor some excellent examples of boxes of instruments for laryngological examinations and for laryngological operations. Belgium is well to the fore with an interesting museum demonstrating Professor Politzer's work and containing wax models and anatomical preparations. In this part of the building are found numberless exhibits of instruments of all kinds without any order or scheme, the only reasonably arranged group being one to be seen in the American section where instruments and apparatus are classed together according to different operative procedures. Among the French sections is an excellent x-ray photograph of the skeleton of a female suffering from scoliosis taken on a single plate. Of the exhibits sent by Great Britain the French public seem to give most attention to the model of a naval hospital. The work of Jenner receives recognition in the Russian section, where a room is entirely devoted to vaccination and the bust of the great apostle of vaccine is placed in the centre. It is difficult to go through this building carefully without being struck with a very remarkable series of instantaneous photographs in the exhibit from the University of Nancy under the name of Professor Guilloz illustrating normal and pathological conditions of the retina. The section devoted to Hungary affords some noteworthy object lessons in the case of the blind and the best means of affording State aid to the poor thus afflicted. There is more information on the same and similar subjects to be gained in the portion of the building assigned to "l'Assistance publique et privée" on the first floor above the gallery for machinery. For anyone not well acquainted with the Exhibition it is advisable, in order to arrive at the next building where medical exhibits are shown, to ask the way to the Palais des Armées de Terre et de Mer. Here is a perfect storehouse of military and naval medical equipment, mostly, however, of well-known types. Norway sends a light, useful two-wheeled cart for the transport of wounded men which seems superior to most similar vehicles shown. A series of Russian photographs of the manufacture of military bandages claims some attention from the representation of the operators' headgear worn as a protection against noxious fumes. Among the objects in the French section in this building is a serviceable ambulance haversack containing compressed drugs representing 15 000 separate doses, some surgical instruments, and some antiseptic dressings. On the first floor in the Palais de l'Hygiène just before the Mexican exhibit is reached there are some forms of spectacles and other apparatus for the preservation of the eyesight in dangerous trades; these appear excellent in their object, but in some not enough attention has been paid to securing an ample field of vision. Below this section, on the ground floor, are a series of galleries which terminate in a fairly large room built in the form of an octagon, the centre of which is occupied by a piece of statuary representing Humanity placing with one hand a crown of laurels on the head of Pasteur and bearing aloft with the other hand a small palm leaf emblematic of glory. This production is the result of the conjoined effort of three artists, Dubois, Enderlin, and Blach, and fully merits the unstinted praise it receives. From four sides of this octagonal room, appropriately named "Salon Pasteur," access is obtained to chambers containing exhibits indicative of the results of Pasteur's influence among other nations than the French, and especial notice is given by the artistic observer to the allegorical figure of a Sphinx personifying the enigma of Science surmounting each of the four doorways. Near the bust of Pasteur are grouped the instruments with which he prosecuted his researches. This room with its four annexes is devoted to exhibits demonstrating the culture of microbes and the applications of the results of Pasteur's teaching. Passing on to the Rue des Nations in the Roumanian Pavilion there is to be seen an interesting album depicting bone lesions from military weapons collected by Professor Démosthène, and close by in the Monaco Pavilion is a very complete surgical exhibit named "l'instrumentation de Doyen." From a medical point of view the exhibits are of very unequal value and by reason of the utter want of any method or plan in the grouping of the subjects the attempt to make a satisfactory inspection is hopeless.

## A VISIT TO SOME OF THE PARIS MUSEUMS.

(FROM A CORRESPONDENT.)

The Dupuytren Museum is situated in a courtyard off the the rue de l'École de Médecine, being the next building to that of the École Pratique. The fine front to this museum is quite spoilt by the narrowness of the somewhat mean yard by which entrance is effected, and the statue of Ambroise Paré by the museum doorway is thrown into greater prominence than is required artistically. The collection consists of over 8000 specimens bearing on pathological anatomy, all displayed in one large hall. The floor space is occupied by five immense glass partitions inconveniently crowded with preparations. Round the walls high glass cupboards are ranged, also filled to overflowing with specimens. The only available catalogue at the time of visiting this celebrated museum was a voluminous work in many volumes by Dr. Houel, but on attempting to form some idea of how the specimens were arranged it was found difficult to make the method detailed in the catalogue conform to the actual arrangement of the collection. From what could be understood of the courteous but extremely voluble explanation of the attendant in charge a new catalogue is in process of formation. It would be a great improvement if the more interesting specimens were arranged at such a height that they could be examined without having to look too high or too low for ordinary comfort. Passing through a door at the extreme end of this ancient hall the way can be found to a small room lined with pictures of medical subjects and from the floor of this chamber a rough staircase leads directly to a small upper room furnished with a couple of tables, a chair or two, and some cupboards. Many members of the Congress had inquired for this chamber because it contained over 10,000 microscopical sections by the late Professor Pilliet on histological subjects illustrating normal and comparative anatomy and pathological anatomy. These have been arranged by Dr. Legry, the present conservator, but unfortunately the collection was not ready for view till the last day of the Congress and only about 20 members had the privilege of seeing the exhibit. Passing through the Dupuytren Museum on the way out the attendant, in answer to inquiries, said that the museum was continually in receipt of fresh acquisitions, and he showed the last, which had arrived eight days before, namely, a large x ray photograph of a double-headed fœtus.

On the opposite side of the court of the Dupuytren Museum on the second floor of the École Pratique the Museum of Hygiene is to be found. The management of this collection seem stricken with want of funds, for it was evident that the exhibits were not quite up-to-date and that there were several gaps in the different departments of the science of hygiene.

In the École Pratique there was also to be seen a collection of over 3000 surgical instruments, both ancient and modern. These were formerly part of the celebrated Orfila Museum. The many inquirers concerning the famous Orfila Museum were generally referred to the École Pratique, and at that place the information gained was that the collection was in process of transference and was not on view.

At the Saint Louis Hospital much interest attached to the museum which has been there formed. The collection consists of over 2000 wax specimens comprising instances of parasitic and cutaneous diseases; most of the wax exhibits

have been modelled by Baretta. Besides the above there are on view more than 300 coloured photographs and diagrams which make the collection at this museum very valuable and instructive.

A small but exceedingly well-arranged museum at the Necker Hospital scarcely received the attention which it so well deserved. It is known at the Necker Hospital as Professor Guyon's museum, but the attendant in the room where the specimens are arranged denies that that is the name of the collection. Be that as it may, the specimens are from Professor Guyon's clinic and they number 680. In the right-hand corner of the room on entering are shown some very curious "foreign bodies" found in the bladders of various patients. The value of the exhibits from an educational point of view is much enhanced by an excellent and easily accessible catalogue where against a full description of each specimen is placed a full-sized photograph. The method of displaying the exhibits is very convenient and good examples are to be seen of the various diseases affecting the ureter, the prostate, the bladder, and the kidney.

Many members of the Congress accepted the invitation of Professor H. Filhol to visit the Museum of Natural History. By following the directions contained in the intimation the way was easily found to the Place Valhubert, the address given for the museum. The building is a handsome edifice of recent construction, and is specially seen to advantage because of the ample space in front and around securing a reasonable view of the institution as a whole. Passing up some steps the main floor of the museum is reached, and from the entrance hall access is gained to the different galleries by a well proportioned stairway. Professor Filhol found many attentive listeners on making his round of the museum, but to make more than a mere visit under the circumstances to such an extensive museum of natural history was impossible. Sixteen professors are engaged in teaching at this museum on comparative anatomy, zoology, physiology, anthropology, botany, and other subjects. On the right hand side on entering the vestibule to the museum, opposite the main staircase, most of the members of Congress who accepted Professor Filhol's invitation noticed a striking piece of statuary. An enormous orang-outang is shown in the act of strangling a man who has evidently endeavoured to carry off the young orang-outang by the side of its parent. The handling of the subject is most effective and is by Professor Frèmiet, one of the staff of the Museum. Visitors are shown the skin of the orang-outang, which was subsequently shot after a search party had found the man lying strangled in the animal's lair, from which he had attempted to secure the young orang-outang as a specimen. Considerable notice was attracted by the way in which the lecture room at the side of the vestibule is adorned with paintings. The walls and the entire ceiling are covered with studies of the evolution of life and the progress of man. In one of those on the walls the subject depicted is a savage making acquaintance with a crab as an article of diet, and the artist has quite entered into the spirit of the occasion. At the Ricord Hospital there is a small collection of about 250 specimens of various venereal conditions. This museum was founded originally by Horteloup and is well worth a visit. Members of the Congress visiting the Trousseau Hospital had an opportunity of seeing a very valuable museum known as the Lannelongue Museum. The specimens exemplify various stages in osteo-myelitis, tuberculous disease of bone, tumours, and fractures. At the Salpêtrière Hospital there is a small museum in one of the buildings of this huge establishment and the many specimens prepared by Charcot rendered it a place of more than usual interest to many of the members of the Congress. The museum itself is a room of modest proportions on the first floor of a building that certainly cannot be termed new or recent. There is no ceiling, but the beams supporting the floor above are covered with various scenes and figures painted by some artist who has succeeded in giving to the chamber a very pleasant effect. There is no catalogue of the contents of the museum and the cards placed near the specimens require more than an ordinary knowledge of French caligraphy. In the centre of the apartment under a glass case is a wax model of a tabetic patient showing very plainly the condition known as Charcot's joint. Around the walls, arranged on shelves, are various specimens illustrating the effects of nervous disorders. A very interesting series of sketches and drawings by Charcot is displayed and it shows well what an appreciative eye for the picturesque and humorous the famous master had and how great a traveller he was, his rough drawings of the vagabond children in Dublin being especially spirited and lifelike.

# THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL CORRESPONDENT.)

## THE BANQUET.

AT the Auberge des Nations, in the Old Paris Street of the Exhibition, the subscription banquet of the Congress was held on August 14th. It was a brilliant and enjoyable gathering, but there is not much to relate as the speeches were few in number and brief. The cards for the dinner gave free admittance to the neighbouring theatre and the banquet concluded earlier than usual so as not to lose all the performance. As President of the Congress Dr. BROUARDEL took the chair and proposed the health of the President of the Republic as the first toast, coupling with it the sovereigns and chiefs of all the foreign States represented at the Congress. He recalled the fact that as Minister in a former Cabinet M. Loubet rendered great service in helping to pass the recent law on the exercise of medicine. M. Loubet also was very desirous of presiding over the Congress of Hygiene and had said that sanitary reformers were the greatest benefactors of humanity. In this the President of the Republic agreed with Mr. Disraeli who, as Prime Minister of Great Britain, had urged that the preservation of the health of the people should be the first duty of the Government. Professor GABRIEL spoke next. He alluded to the union of civilised nations in their efforts against the barbarism of China; but in defining the Chinese as barbarians the speaker was met with cries of "Oh! oh!" A German delegate drank to the sanitary reformers of France, saying that each civilised man had two countries, his own and France. This the Germans felt and the memory of the reception they had received in Paris would never be effaced from their hearts. M. DUPUY, on behalf of the Central Society of French Architects, drank to all foreign architects who had done such good work in adding sanitation as a constituent part of the art of building. This new doctrine would be taught to the young generation of architects and would constitute the ethics of building. Dr. LAURENT read out some verses which he had composed in honour of sanitary reform, mentioning the names of well-known hygienists and concluding with "the ladies." Dr. ANDREAS MAYER remarked that though war was not hygiene, the services rendered under the Red Cross could justly be considered as such and he drank to the ambulances on the field—"not omitting," interrupted Dr. HUIZINGA, "the members of the Red Cross Society who are prisoners at Ceylon." Dr. GREGOROWITCH, from the Canary Islands, drank to the prosperity of the town of Paris, and the members then adjourned to the Théâtre du Palais where they had a good laugh at a satirical review of some of the principal events of the year.

## EXCURSION TO A MODEL FACTORY.

On Thursday afternoon, August 16th, more than 300 members of the Congress were conveyed by a special train to Noisiel. By a branch line the train was driven right up to the great Ménier chocolate factory. Here some 800 women and 1200 men produce annually 64,000,000 kilogrammes of chocolate. This is considered a model establishment from the sanitary and social point of view. The factory is carefully ventilated throughout, there is ample space, there is no crowding together of the workpeople, and the machinery is well protected to prevent accidents. The only part which is not up-to-date is an outbuilding where the wood is sawn and prepared for the making of packing-cases; here there is too much wood-dust in the atmosphere. The village of Noisiel consists of 300 semi-detached cottages with 300 square metres of space to each cottage; of this the building occupies 64 square metres and the rest is a garden. Each cottage, not counting the land, cost £165 and is let to the workpeople for £6 a year. Further, there are coöperative stores and a restaurant. At the latter hot meals are provided at cost price and a good portion of meat can

be obtained for 2*d*., and a complete meal, including wine for 8*d*. Then there are schools where the children of the workpeople obtain their primary education free from all cost. There are also a free library and a hall for concerts and entertainments. The workpeople have constituted a band and choir of 100 musicians. The services of a medical practitioner, of a midwife, and of a dispensing chemist are paid for by the firm and rendered gratuitously to the workpeople. The firm also make sick allowances in money and in kind. The men who have been in their service for six years receive annual gratuities of £2 8*s*. After 10 years' service this is augmented to £4, after 15 years to £6, and after 20 years to £8. The women receive half this amount and there is a free home for the aged and infirm. Messieurs Ménier have also created a fire brigade of 45 men, provided with uniforms, horses, hand and steam fire pumps, and all that is necessary. This brigade is at the service of all the neighbourhood and not only of those who are connected with the chocolate works. The drainage of the village is organised on the English water-carriage system. There are no cesspools. The sewage is delivered into a large hermetically closed tank, from which it is pumped in sealed pipes to a distance of one and a half miles away from habitations and here it is utilised for agricultural purposes. The workpeople, needless to say, are exceptionally contented; there is never any question of a strike. At the last general election, of the 349 electors in the village of Noisiel 343 voted for M. Ménier. After visiting the factory, the village, and all its institutions, the members of the Congress were conducted over the park and mansion of Noisiel, where they admired the splendid trees, the view of the Marne, and the antique furniture within the mansion. Finally, an excellent meal was served in a large hall, followed by a few short and complimentary speeches. M. MÉNIER then explained that hygiene had always been studied at Noisiel. They commenced with the hygiene of the school, then of the artisans' dwellings, and finally of the factory. They hoped by this means to bring up a healthy and contented population of good citizens. While the meal proceeded the band and chorus of the village gave selections, concluding with the "Marseillaise." This served as the signal of departure. The special train was in waiting and the members of the Congress were brought back to Paris punctually at the hour indicated. The organisation throughout had been perfect: there was no hitch, no discomfort. The members on arriving had been divided into bands of 50, a member of the firm conducting each band and giving all the information required. There were also arrows at all the turnings, so that those who strayed from their guide were yet able to find their way, and no collision could occur between people endeavouring to go in different directions. It is a pity that M. Ménier was not consulted on the organisation of the great fête given to the Medical Congress at the Palace of the Luxembourg, where several hundred guests were unable to gain admittance.

### THE LAST GENERAL MEETING.

On Friday morning, August 17th, there was a long adjournment after the meetings of the sections. These concluded their labours between 11 and 12 o'clock, the section on Microbiology dying hard, for they continued to discuss ardently when the members of the other sections were already enjoying cigarettes in the yard. The International Committee was to meet at two o'clock, but the Congress as a whole was to assemble only at five o'clock for the closing ceremony. The International Committee had a great deal of work to do. Not only had they to decide where the next Congress should meet, but they had to take into consideration the resolutions passed in all the sections and select those which might be submitted to the Congress as a whole. Thus, while the members took matters leisurely, the committee had to work very hard. At five o'clock the great amphitheatre of the École de Médecine was entirely filled by the members of the Congress. The President, Dr. BROUARDEL, explained that the motions which would be read out had been fully discussed in the sections and that it would be quite impossible to discuss them over again. All that the present general assembly of the entire Congress could do was to vote for or against the motions. The general secretary, Dr. A. J. MARTIN, then read out the motions. There was no discussion or dissension and they were all unanimously approved.

### THE RESOLUTIONS ADOPTED.

Commencing with the First Section and concluding with the Division of Demography the principal resolutions were briefly to the following effect. The Congress was of opinion—

That it was absolutely necessary for the authorities in all countries to establish bacteriological laboratories where bacteriological examinations could be made gratuitously.

That no children who had suffered from diphtheria should be allowed to return to school till it was shown, by bacteriological examination, that there was no longer any risk of their spreading the disease.

That there should be an international commission to study the question of serums and to endeavour to establish uniformity in the activity of serums.

**This latter resolution was taken only as a recommendation so as not to tie the hands of the next Congress.**

That the progress accomplished in the methods of vaccination was so great that no objection was justifiable and therefore that vaccination should be rendered obligatory in all countries.

That all tins containing preserved meat, fish, &c., should bear the date of their manufacture; and that rules for the preservation of food in tins should be published and distributed among all persons engaged in the trade.

That no chemical should be employed for the preservation of food.

That better laws or laws better applied are needed for the preservation of rivers from industrial and other pollution, and also for the preservation of the intakes of potable water.

That a commission should be appointed for the purpose of endeavouring to assimilate the methods employed in the bacteriological examination of water used for drinking purposes.

**This latter resolution again was taken as a recommendation to the organisers of the next Congress.**

That the inspection of meat should be enforced and the methods of control assimilated in all countries. It was recommended that an international conference of veterinary surgeons and others should meet for this purpose and also so as to establish a basis for uniform teaching in all countries as to the methods of controlling the meat-supply.

That there should be public slaughter-houses in all large centres. That small centres should federate so as to have one public slaughter-house between them.

That where it was absolutely impossible to have a public slaughter-house the killing in private slaughter-houses should only take place at fixed hours and should be under the control of the local authorities.

That inferior but wholesome meat might only be sold in especially indicated localities; and inspectors should have the right to visit all such places both day and night.

That lead be replaced by antimony in the proportion of from two to five per cent. and that the soldering of tins containing preserves with lead could only be sanctioned when done in such a manner as to prevent the lead entering the tin.

That domestic hygiene necessitated the immediate removal of all soil, slop water, &c., and the trapping of all pipes. That such pipes should be fully ventilated throughout, but that it should be impossible for sewer air to enter the houses.

That plumbers' work should be carefully supervised and so placed as to be free from the danger of frost.

That the overcrowding of dwellings should be illegal and the law should sanction police measures against this offence.

That municipalities should, by reducing taxation and other means, encourage the building of model artisan dwellings.

That gratuitous bathing establishments should be constructed.

That streets and back yards should be widened on all possible occasions.

That professional diplomas should be delivered to plumbers who had passed test examinations.

That smoke, especially black smoke, should be prevented by enforcing the use of smoke-consuming processes.

That hygiene should be taught in primary and secondary schools and special care be taken to educate young girls in matters affecting domestic hygiene.

That the Congress approved and encouraged the practice of cremation.

That statistics on the effect of various industries on the health of workers should be collected in all countries.

That the laws restricting the employment of toxic substances for industrial purposes should be strengthened and better measures taken to prevent dust in mills and factories, and this even when such dust did not contain poisonous particles. Where, however, efficient ventilation was not possible the work-people should be made to wear masks, spectacles, &c. In all cases notices should be put up clearly indicating the dangers and the precautions that should be taken.

That the Congress approved of all laws that enforced the providing of seats for the use of shop assistants.

That there should be schools for the teaching of colonial hygiene.

That sanatoriums should be established in the colonies.

That there should be available means for the gratuitous treatment of syphilis.

That ships trading with countries where plague prevailed should be provided with the anti-plague serum.

That ships' surgeons should be independent of ship-owners.

That the number of ships' surgeons should be increased and more care taken to insure good sanitation on board ship.

That no person suffering from an infectious disease should be allowed to travel in a train. Such persons should warn the station-master and special trains should be provided.

That railway carriages should be more suitably furnished and more easy to disinfect.

That all possible means should be taken to prevent spitting in carriages or at railway stations. Any railway servant suffering from tuberculosis must not be allowed to expectorate in the offices or stations.

That severe measures should be taken against railway servants who are convicted of drunkenness.

That better and brighter lights are required for the railway services.

That water and steam are the best mediums for heating railway carriages.

That conductors of omnibuses, tramways, &c., have not the power to prevent expectoration within these vehicles but that some means should be found to stop such practices.

That an international committee should strive to agree upon a uniform method of disinfecting cattle vans.

That passenger ships should be better ventilated.

The Division of Demography sent up a resolution to the effect that all countries should collect statistics setting forth the numbers of the population in proportion to the house accommodation. An international committee should agree on the same definitions when describing the quality or the category of a dwelling or lodging. Inhabitants of barracks, convents, schools, hospitals, and such places should not be included in the statistics of the population of dwelling houses but should be given in separate tables.

As this concluded the list of resolutions M. VAILLANT, member of the National Assembly, rose and remarked that the resolutions carried in the Fifth Section on Industrial Hygiene had not been presented to the Congress. These resolutions, it could not be denied, had a political and economic bearing, but they had not been discussed from such points of view. They had only sought to indicate the hygienic reasons which rendered labour legislation necessary. It had been said that they would excite discussion. Perhaps future Congresses would be less timid and the present Congress would have honoured itself by taking in hand a subject which was of undoubted importance and urgency. The section in any case had been unanimous and M. Vaillant was anxious that what it had done should not be concealed and that future Congresses should have full opportunity of continuing the work of the fifth section. These words were loudly applauded. Dr. BROUARDEL rose to explain that the International Committee had every sympathy with the work done by the Fifth Section, but that the resolutions carried touched too much upon the constitutions of other nations. All the resolutions carried by the Fifth Section would be printed and transmitted to the next Congress.

### THE CLOSURE AND NEXT PLACE OF MEETING.

Dr. PUTZEYS, delegate of the Belgian Government, now stood forward with an official invitation that the next International Congress should be held at Brussels in three years time. A quarter of a century would then have elapsed since the first of the present series of International Congresses of Hygiene met in Brussels; and 50 years previously the first international congress on health questions that was ever held likewise met at Brussels. The Belgians were proud of these dates and would spare no effort to receive the Congress in a hearty and worthy manner. The Congress without discussion unanimously accepted the invitation.

Dr. BROUARDEL then pronounced a short and concluding address. He said that he thought the Congress was remarkable for the number of questions which had been very systematically discussed and the precision of the resolutions adopted. So thorough had been the discussions that the resolutions were generally carried unanimously. The French sanitary reformers would be much strengthened in being able to point to the approval of foreign hygienists when claiming reforms. But what was true for a nation was often true for all nations and he hoped that the resolutions carried at the Paris Congress would help on the cause of sanitary reform in many other countries.

Instead of allowing a delegate from each nationality to express his thanks for the reception accorded a collective declaration from the official delegates of all the foreign countries was read out. In suitable terms it expressed regret at parting after having been so graciously received in the splendid capital which was now rendered illustrious by the presence of the works of genius of the whole world. In leaving, the foreign delegates tendered their best wishes for the prosperity of the French nation.

After these words the PRESIDENT declared the Congress closed and with much shaking of hands and friendly leave-taking the members slowly dispersed. The Academy of Medicine, which for some weeks had been the scene of so much animation and the gathering ground of a numerous cosmopolitan crowd, lapsed into mournful silence.

## THE WORK OF THE SECTIONS.

### RIVER POLLUTION.

A full account of the papers read and the discussions held in the eight sections would constitute a weighty volume, which, indeed, we are promised will shortly be published. All I can now attempt is to give an account of the discussions which I was personally able to attend and a brief description of some of the more interesting papers communicated to the other sections. Nor was it an easy matter to select which of the sections to attend. They all had attractive programmes. Still, it seemed to me necessary to make a clear line of demarcation between the new science of hygiene and the old well-established sciences, and to take up those subjects which do not form part (as a rule) of the ordinary medical education. In England we speak of sanitation rather than of hygiene, and the third section was entitled in French *Salubrité*. This term comprises the greater number of questions that would come under the British term sanitation. Here we find illustrations of the new science, which is a combination of medicine, bacteriology, chemistry, engineering, and architecture, with a little agriculture and geology thrown in, not to mention that form of politics which, independently of party politics, strives to obtain legislative and administrative reforms bearing on the preservation of public health. To be proficient in all these departments of technical knowledge is, it may be said, beyond the powers of any one individual, and, as a matter of fact, the speeches often displayed ignorance in one direction and knowledge in another. Thus there was a constant give and take which must prove advantageous to all concerned. It was on Saturday, August 11th, that shortly after nine in the morning the work of the sections began. The first report taken in the Third Section dealt with the treatment of sewage and the pollution of rivers. It was written by M. FELIX LAUNAY, chief engineer of the Sanitary Department of the Paris municipality. Of course, the reporter did not fail to quote the English Rivers Pollution Prevention Act, but he seemed to think that this law was much more strictly applied than is really the case. Nevertheless, he was right in saying that more had been done in England in this respect than in France. Considerable evil had resulted from the belief that rivers were capable of purifying the sewage they received. Pettenkofer had shown that the sewage of Munich was purified by the river Isar; but, as Duclaux observes, a river must be in proportion to the discharge of sewage, and that was rarely the case. Pettenkofer had laid down as a principle that crude sewage could be thrown into a river when at low water there was a dilution of 1 in 15; when the velocity of the water in the river was not more rapid than the current of the river and when there was no agglomeration of dwellings between the sewage outfall and the point of the river where the purification of the sewage was accomplished. But the Sanitary Bureau of the State of Massachusetts put the proportion of dilution down at from 1 in 40 to 1 in 130. The real fact was that the nature of sewage and of rivers differed so extensively that no general rule could be established; and the rule which was the safest and applied to most cases was that which forbids the discharging of any crude sewage into the rivers. French legislation sought especially to preserve the fish in the rivers and the town of Paris had been fined some £4000 for the destruction of fish. This, however, was but a trifle out of an annual expenditure amounting to some £12,000,000; and if some £1,600,000 had now been spent to put an end to such pollution this had not been done through fear of small fines. These great works were undertaken because the utilisation of sewage for agricultural purposes was recognised as the best process of purification. This principle was proclaimed at the International Congresses of Hygiene held in Vienna in 1887, in Paris in 1889, in London in 1891, and in Budapest in 1894. It was also admitted at the International Congress of Agriculture which met at Lausanne in 1893 and confirmed by the same agricultural congress when it came together again in Paris last month. Where, however, there was no suitable soil artificial means must be employed and the Dibdin process or the Cameron process seemed to give the best promise of success. In one way or another it was now possible to prevent the pollution of rivers. The report then proceeded to deal with the protection of gathering grounds for the supply of potable waters and concluded that on this also more stringent laws were required.

### WATER FROM THE CHALK.

On the discussion being thrown open Dr. HENROT, Mayor of Rheims, stated that the sewage farms of that town now extended over 600 hectares; for ten years the irrigation had never stopped, there had been no complaint, and the soil was never clogged up. It was regrettable that after the success achieved with this process, both at Paris and Rheims, no

other town had followed this example. This he thought was due to political considerations. Persons in power were afraid of compromising their political popularity, therefore the law should compel them to act. Dr. Henrot urged that there ought to be a Bureau d'Hygiene for each county to exercise pressure on the smaller local authorities and to depute technicians to advise the latter. At Rheims the most satisfactory results were attained by the cultivation of beet-roots with which they manufactured a large quantity of alcohol.

M. BERENGER, a Belgian delegate, now gave the discussion a turn in quite a different direction. He seemed to denounce the general incompetence of everybody. He said that engineers who had distinguished themselves in building an iron bridge or a railway line were employed to supply water to a town. Local authorities did not seem to understand that there were totally distinct branches of engineering. He maintained that no one should touch the question of water-supply who had not a profound knowledge of geology. He did not believe that water derived from the chalk was always safe. If there were fine soil and gravel on the surface of the chalk then the water might be sufficiently filtered; otherwise fissures were likely to occur in the chalk which would let unfiltered water through. He looked upon sanitary engineering as a science in itself for which there should be special examinations and diplomas.

M. BECHMANN, chief engineer of the town of Paris and President of the Section, replied that if water taken from the chalk was to be condemned, then many countries would be absolutely deprived of water. On the contrary, sewage used to irrigate land had, after filtering through calcareous soil, been perfectly purified. The microbes in such sewage, which amounted to 20,000,000 per cubic centimetre, had been reduced to 1200 per cubic centimetre.

M. LAUNAY inquired whether Brussels did not derive its water-supply from the chalk and if there had been any epidemic?

The answer given by M. BECHMANN to the former question was in the affirmative, and he said that there had not yet been any epidemic. Medical men and others had visited the gathering grounds and found them magnificent, but they had no geologists with them and the Brussels Geological Society had condemned the present intake.

M. DE MONTRICHET, whose great work in cultivating the arid, rocky plain of La Crau with the contents of the Marseilles dust-bins was subsequently described to the section, remarked that the report before the section advocated certain doctrines and methods which, however excellent, could not be accepted as infallible dogmas.

Dr. LANDE of Bordeaux supported this objection, for the throwing of sewage on the soil was not always practicable.

M. BECHMANN promptly explained that there was no desire whatsoever to impose a hard and fast rule. The utilisation of sewage on the land was considered preferable where it was practicable, and of course there were many places where this was not possible.

Referring, again, to the question of the pollution of rivers a Russian and a Belgian delegate both declared that laws existed in their countries against such pollution but that they were totally disregarded. The PRESIDENT thought the section should avoid details in its resolutions. The reports were historical records of what had been done and if the conclusions or resolutions at the end of such reports were adopted it did not mean that the section endorsed the entire report. In the present case it would suffice to affirm that the section thought it the duty of all Governments to enact laws and apply efficacious measures to prevent the pollution of rivers and to protect from contamination the gathering grounds or intakes for potable waters. This proposal was unanimously approved.

### SANITARY LABOUR LEGISLATION.

Satisfied with this solution I then went over to the Fifth Section, which I found had been discussing M. EDOUARD VAILLANT'S paper on Labour Legislation from the Sanitary Point of View. M. Vaillant is a member of the French Parliament and also a Member of the Royal College of Surgeons of England. In his lengthy report he strove to explain how the working classes had by organisation obtained better sanitary conditions, that hygiene touched almost every phase of human activity, and that the object of the sanitary reformer was to see that such activity did not degrade and ruin the human race. When the constitution of a healthy man broke down at the age of 40 or 45 years there the sanitary conditions must be bad and the law should interfere. Such premature decadence was a modern evil; it was due to modern industrialism; it commenced by separating the infant from the mothers, who went to work in a mill or factory, and continued through various phases of the worker's existence. Historians, novelists, travellers, and hygienists all agreed that there was a marked physical degeneration among the populations of many industrial centres. This had been noticed since the commencement of the century and the first efforts of legislature had been directed to the protection of childhood. So far back as 1802 an English law made it illegal for children to work at night and limited their day's work to 12 hours. M. Vaillant then reviewed the subsequent labour legislation of England and other countries. He also quoted statistics as to the number of recruits in different countries who were found physically unfit for military service, all tending to show that the factory and the mill, and, generally speaking, modern methods of work, tended to degrade the physique of the nations concerned. Physiological researches, M. Vaillant insisted, indicated that over-exhaustion could not be compensated by the normal food and rest. When the muscles were tired further work was only accomplished by nerve energy; and after the borrowing of nerve force for muscular effort the reaction was far more destructive of vitality. The hygienist should seek to determine for each trade or industry the physiological limit of effort beyond which it was detrimental to go. This seemed difficult because the powers of individuals varied extensively. But it was not difficult to distinguish between the healthy and unhealthy, the normal and abnormal, and exceptions to the rule must be made for the latter. The robust worker harnessed to the wheel of Pettenkofer and Voit showed how much, in spite of rest and food, he had in nine hours exceeded the limit of his strength. Many instances were given and authorities quoted in M. Vaillant's paper to prove that it was possible to ascertain when a person had worked beyond his strength. Such excess of work produced an auto-intoxication by carbonic acid accumulated through excessive muscular endeavour and was more than the lungs had the power to eliminate. Practically the ideal was that rest should be sufficient to ensure that the work done should be done without producing any marked, distinct symptom of fatigue. Therefore it did not in all cases suffice to reduce the hours of labour. If the strain was to be augmented and the same amount of exhaustion produced but in a shorter time the evil consequences might be as great. The healthy and normal day's work was that which did not upset the equilibrium of the organism and which did not necessitate any borrowing on the reserves of strength, heat, oxygen, &c. The quantity of energy disposable would decrease where the sanitation was bad, where the factory and home were dirty and insufficiently ventilated, and where the food, clothing, and rest were insufficient. The better the general sanitary condition the greater the amount of work that could be done without injury to the worker. A human being should be treated with at least the same consideration as was shown towards an engine or other machine and not worked to the point of self-destruction. Unfortunately it was easier to replace a workman than to purchase a new machine. The records of the sweating system showed that machinery had never been so badly treated as human beings had been. To protect human life there were laws limiting the hours of labour, but this was of little use if overtime was allowed. Nor was this legislation effective where the sweating system was carried on in private dwellings that escaped all control. The French Decrees of March 2nd and 24th, 1848, the resolution of the English House of Commons of Feb. 13th, 1891, were endeavours to abolish the sweating system; but till domestic and family industry were placed under control sweating would continue. The more advanced legislatures already excluded women from dangerous industries, and all hygienists agreed that women about to become mothers should not work. Progress had already been accomplished in raising the age at which children might be employed, and it was very generally felt that the organs were not sufficiently formed to permit hard work till the child had reached the age of 16 years. Even at 16 years the organs of the thorax, especially the heart, were not fully developed, and no exhausting work should be allowed at that age. The object should be to prepare the mind and body by technical and physical education. After

reviewing the laws of different countries that restricted the work of women and children M. Vaillant proceeded to explain that even these partial reforms had greatly reduced the sick-rate and the death-rate, and concluded by recalling the fact that after discussing the interesting report written by Dr. Félix, Dr. Roth, and Dr. Singer, the Nineteenth Section of the Eighth International Congress of Hygiene, which met at Budapest in 1894, unanimously adopted a resolution in favour of the eight hours' day. He therefore proposed that the present Congress should confirm this resolution and this was approved by the section.

Then followed no less than 15 other resolutions. Certainly these could only be considered as mere enunciations of principles. For the moment many of them were beyond the domain of practical politics. The second one certainly went to the very root of the whole question, for it stated that labour should not only be limited in its intensity and duration, but that it should be remunerated in such a manner as to ensure sufficient well-being. How this was to be done was not stated, but as a matter of logic the resolution was absolutely correct, for good sanitation and short hours would not compensate for the want of food. The section also voted in favour of an uninterrupted rest of 36 hours per week.

To the resolution that night labour for women and children should be abolished the section added the words "without exception," for such laws did exist in several countries, but so many exceptions were made that they were of little use. The seventh resolution was to the effect that night labour for men should only be tolerated in those industries where its suppression was economically not yet possible. The eighth proposal that women should not work for six weeks before and six weeks after their confinement was amended to two months. The ninth motion, raising the age of children working in factories, &c., to 16 years of age, met with some opposition. In France the boys left school at 13 years of age—they had better work than get into mischief playing in the streets. To this the reply came that there would be reforms in the education system and that these boys might go from the primary school to the technical schools. This was carried, as also the next proposal stating that the work of children or young persons should not last longer than half the time worked by adults. Again, the question was asked whether they were to have the children six hours in the workshop and then six hours in the street. The fact, however, that children might get into mischief when playing in the streets did not prove that it was wholesome for them to work all day in a factory. The section proceeded to recommend that every possible legal measure should be adopted to prevent overwork by means of the sweating system, home work, or overtime. Therefore, medical men, hygienists, engineers, and working-men delegates should be appointed as inspectors with right of entry not only in all mills and factories but in private houses and rooms where work was done. Medical surveillance should be especially strict in regard to children, young persons, and women. The fourteenth resolution recommended the teaching of hygiene in primary schools and the fifteenth urged that physiological laboratories should be established in the universities of all countries to investigate the physiological conditions of the creation, and the expenditure and the regeneration, of energy in animated motors and more especially in man. By the institution of an international bureau dealing with labour, sanitary, and statistical questions, and by periodical international congresses, the Governments would facilitate the solution of the problems at issue, and by international legislature ensure the loyal observation of the principles and rules adopted.

Such, in rather briefer terms than the actual text, were the formidable array of resolutions which this section adopted. It has been seen that these resolutions were not submitted to the Congress as a whole when it assembled for the closing ceremony and that M. Vaillant protested against this exclusion; but the resolutions will be printed in the official records and transmitted to the next congress. The weak side of this discussion rests in the fact that a sectional meeting is attended, in the main, by sympathisers who are partisans of the object held in view. Therefore, there is little or no opposition. It would have been more effective and convincing to have carried propositions such as the above in face of a strenuous and able opposition. It could not then be said that both sides of the question had not been heard. This would undoubtedly have occurred had the Congress as a whole been able to discuss the resolutions which the Fifth Section had carried, and it was very frankly admitted that it was just because such discussion would have arisen that the resolutions were not presented to the general assembly. Perhaps at Brussels in three years' time these topics will have further ripened and there will be less timidity shown in handling them.

*(To be continued.)*

# Correspondence.

"Audi alteram partem."

## PROFESSIONAL ORGANISATIONS.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of August 18th, p. 475, prominence is given to the question of professional organisations by the insertion in a place of honour of an address on that subject by Dr. W. G. Dickinson. Dr. Dickinson quotes with evident approval an article on the British Medical Association by an unnamed author to this effect: "No member of the profession has a right to say that he takes no interest in what are called 'medical politics,' by which we understand the maintenance of the honour and interests of the medical profession and the consolidation and extension of its influence on public opinion," &c. The *propriety* of such objects will be conceded by most of us, but it is worthy of inquiry whether the methods we adopt are not sometimes more calculated to defeat than to achieve them. Small local organisations form (and act upon) sweeping rules affecting many persons both in and out of the profession, but at the same time, rules which might be much modified and improved if subjected to a tribunal above mere local, and possibly very narrow, considerations.

There is, in my opinion, a real need that some central authoritative body, representative of the profession, should have an opportunity of considering the rules of local organisations and approving them—if worthy of approval—before they become, to all intents and purposes, laws. I will illustrate these remarks by a description of our methods in Great Yarmouth, methods I am ashamed to state I have, up to the present, acquiesced in. Five years ago we formed a branch of the Incorporated Medical Practitioners' Association on the occasion of a rupture between ourselves and certain working men's clubs. We had proposed fresh rules to the clubs. The clubs very ungraciously refused even to discuss them with us, dismissed us from our appointments (as indeed they were entitled to), and proceeded to form an Institute. By advertisement in lay papers they obtained two qualified men, one of whom is in office with them still. We then—by way, I suppose, "of upholding the honour and dignity of the profession and consolidating and extending its influence upon public opinion"—proceeded to boycott the Institute and its medical officers—the latter by social and professional ostracism, the former (and this is by far the most serious aspect of the case) by refusing to see them in consultation with their Institute medical officers, however ill they might be. Practically our attitude to the Institute patient was this: "You may suffer or die before we will come to your help so long as you are attended by your Institute doctor." We went still further, for when the friends of Institute patients, failing to get help in Yarmouth, appealed to Norwich consultants we brought pressure to bear upon these consultants, and stopped them. I will provide names and particulars of both patients and medical officers if required. And at our last meeting our secretary avowed his intention of preventing any London consultant meeting an Institute medical officer in consultation over an Institute patient if he could. It would be interesting to ascertain the view the London consultants take of the matter.

Surely, Sirs, our methods require revision. The public ridicule them, the interests of the profession are not served, bad blood is created between the Institute patient and the general practitioner, and the breach is widened. It is true that our society contemplates taking the club patient from his Institute medical officer altogether and treating him for

nothing when he is dissatisfied with his club medical officer, but I fail to see the advantage of either pauperising or bribing him. So far as boycotting is concerned let us leave it to trade unions. We profess to be an honourable learned profession, let us not plant our dig so low as we do when we condescend to such vulgar methods as boycotting. Let us have a central representative body; if it endorses our methods loyalty to our profession will ensure general adhesion to them. But when a mere handful of medical men in a provincial town make punitive regulations without supervision by a superior authority there must be a serious danger of injuring the honour and interests of the profession and the respect we aspire to in the eyes of the general public. I am, Sirs, yours faithfully,

JAMES RYLEY, M.D. Lond.

Great Yarmouth, August 20th, 1900.

## "THE COVENTRY DISPENSARY."

*To the Editors of* THE LANCET.

SIRS,—I notice in THE LANCET of August 18th Dr. Saundby challenges the veracity of your special correspondent, Mr. Adolphe Smith, and as far as Coventry is concerned I should like to call Dr. Saundby's attention to Mr. Smith's investigations into the abuses of the Coventry Dispensary which were printed in THE LANCET some three or four years ago. If Dr. Saundby had taken the trouble to have read these reports, culled from the local press and the practitioners in Coventry, those on the dispensary staff included, he would have recognised that the statements bore the imprint of truth and that the reports in question were masterly *résumés* of the whole situation.

Dr. Saundby says "that he had never been asked to support the profession in Coventry," and "no request had been brought before any of the medical societies for assistance." In reply to this I would remind him that some five years ago I called upon him and laid the whole question of the Coventry Dispensary before him, and he promised to help in whatever way he could. I would also remind him that within a few weeks of this interview Mr. Faulder White and Dr. Callaghan of Coventry called upon him and again explained the situation and asked for his assistance. Of course, these are very small matters and perhaps do not affect the points at issue, but I thought it better to refresh Dr. Saundby's mind upon them. Then again, as regards the request to the medical societies, Dr. Saundby has again forgotten that this question has been referred to the Ethical Branch of the Birmingham District, which condemned the dispensary in the strongest terms. Surely this fact should not be lost sight of. Then as to whether these dispensary medical officers are ostracised in Coventry I can only tell you that some of us will not meet them in consultation at all, and others only upon exceptional cases. I might state here that a rule exists at this dispensary that if a consultation be required one of the members of the staff must be called in or a practitioner from another town, but not a practitioner in Coventry.

In 1892 this dispensary, according to published reports, had 25,000 people on its books out of a population of 52,000. I mention this because I have always maintained that if these medical men refused to meet us in consultation upon dispensary cases—i.e., half the population of the town—we should in like manner refuse to meet them in consultation upon the other half, and to this understanding many of us have adhered. I have instances, and can mention names, where dispensary patients from this town have paid 10, 15, and 25 guineas to Birmingham consultants. Surely it is time that a wage-limit at this institution should be insisted upon.

Your readers no doubt will understand from these remarks that this Coventry Dispensary question is far too wide for the intelligence of men who receive consultation fees from the medical men upon its staff, but it should be sufficient for these consultants to understand that an institution should not be countenanced which had been condemned at two annual meetings of the British Medical Association, by the Ethical Branch, and more perhaps by the condemnation of the medical press (THE LANCET, the *British Medical Journal*, and the *General Practitioner*), all of which refuse advertisements for vacancies upon its staff. If after these condemnations men in neighbouring towns would have sufficient *esprit de corps* to refuse to meet these medical men in consultation the reforms asked for at the dispensary would follow as a natural sequence.

I am, Sirs, yours faithfully,

Coventry, August 21st, 1900. EDWARD PHILLIPS.

*To the Editors of* THE LANCET.

SIRS,—I regret very much that you have replied to my letter by such a harsh note. It is as easy as it is futile to seek to evade responsibility for the statements made by your Commissioner by complaining that the protest is not made in courteous terms. I must remind you that three years ago in reply to my letter you did me the honour of devoting a whole article to abusing me, but utterly failed to substantiate the injurious and inaccurate statements which your Special Commissioner had made respecting the medical profession in Birmingham, and against which I had protested somewhat hotly. This was replied to not only by myself but by Dr. Carter, who wrote under date August 10th, 1897, "I venture to think that you will do well to repudiate and withdraw without delay the statements of which Dr. Saundby and I complain," and I should also like to quote the final passage of my own letter, under date August 9th, 1897, where I say, "With respect to your accusation of want of courtesy, I have only to add that if in rebutting accusations which are false and injurious I have been wanting in the courtesy due to those who make such accusations I apologise, but I leave it to the judgment of the profession to say whether such charges should ever have been published and defended in the editorial columns of THE LANCET." To those letters you vouchsafed no reply, and it is wholly inadequate to say now that you did not reply because the challenge was "rude." I do not think it can fairly be said that my present request to have the statements made by Mr. Adolphe Smith in Paris either substantiated or withdrawn is rude or unfair, and I think I was fully justified in referring to the events of three years ago, where his accuracy was most distinctly challenged and he failed to adduce any facts in support of such injurious allegations as that "a spirit of selfish money-grabbing" animated the medical profession in Birmingham, and that it had been "particularly difficult to group the medical men together and get them to put their personal interest in the background so as to defend the position of the profession as a whole"; or that "instead of inquiring what good cause is to be promoted they (the medical profession in Birmingham) will strive to find out that some personal interest is to be served." Now, we are told on the authority of Mr. Adolphe Smith that owing to the conduct of Birmingham consultants combinations of the local profession in the towns of Coventry and Wolverhampton against certain ostracised practitioners have failed, and I ask whether he has been correctly reported and if so for the ground upon which this statement is based, or for any evidence that the assistance or coöperation of the medical profession in Birmingham has ever been officially sought to help such a movement in either Wolverhampton or Coventry. If you refuse to substantiate these charges or to withdraw them I leave the profession to judge of their value.

I am, Sirs, yours faithfully,

Birmingham, August 21st, 1900. ROBERT SAUNDBY.

*** Our readers will find the article "abusing" Dr. Saundby on page 317 of our issue of August 7th, 1897; and on page 331 of the same issue they will find the letter in which Dr. Saundby "protested somewhat hotly." We have no desire to be harsh or to evade any responsibilities. Our aims are to obtain a decrease in hospital abuse and a cessation of the sweating tactics employed in the management of many medical aid associations. Our Special Commissioner's work in carrying out our aims commands our complete confidence.—ED. L.

## A BIRTH BY THE ROADSIDE.

*To the Editors of* THE LANCET.

SIRS,—Perhaps such a case as the following is sufficiently rare to deserve a record. I was called late in the evening of Saturday last to the young mother of two children born after natural labours. She was returning from the village to her home a mile or two distant when she was suddenly taken in labour (which she had not expected for several weeks). After "about two pains" she was delivered

by the roadside of a fine, strong boy who was crying lustily on my arrival.

I found my bicycle lamp of much use in enabling me to pay the needful attention to the hasty newcomer. Mother and child are doing as well as if the event had occurred in more conventional surroundings.

I am, Sirs, yours faithfully,

St. Mary Bourne, Hants., August 13th, 1900. WM. A. S. ROYDS.

## "THE CAUSE OF CARIES OF THE TEETH."

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of July 14th (p. 134), to hand by this last mail, I notice a letter from Dr. Harry Campbell in which he supports the theory of Dr. J. Sim Wallace that "the great prevalence of dental caries among civilised people is due to their eating soft and pappy foods requiring little mastication." Would either of these gentlemen kindly explain how they reconcile this theory with the following fact. The great majority of South African natives live on nothing but soft pappy food, which consists of a very soft porridge made from ground mealies or Indian corn; their only method of cleansing their teeth is to fill the mouth with water and rub the teeth with the finger—and yet carious teeth among natives are the exception rather than the rule; on the contrary, they possess beautiful, sound, strong, milky white teeth, of perfect shape and formation, absolutely free from any taint of tartar or other discolouration, and seldom if ever malformed or irregular. I am, Sirs, yours faithfully,

A. BERLYN, L.D.S. F.P.S. Glasg.

Cape Town, August 1st, 1900.

## A RIDE FROM LONDON TO EDINBURGH AND BACK ON A TRICYCLE BY A VEGETARIAN IN HIS SEVENTY-EIGHTH YEAR.

*To the Editors of* THE LANCET.

SIRS,—I am much interested in advancing the cause of total abstinence from meat, alcohol, and tobacco, and I have practised it on myself for more than four years. I have just returned from riding to Edinburgh and back on my tricycle and I am desirous of ascertaining whether anyone of my age—78 years next April—has accomplished a similar journey either on flesh or vegetarian diet. If you can kindly help me in this matter I shall esteem it a favour.

I left London on July 11th and my sleeping places during my ride were—July 11th, Dunstable; 12th, Northampton; 13th, Leicester; 14th and 15th, Matlock Bath; 16th, Buxton; 17th, Altrincham; 18th, Preston; 19th, Milnthorpe; 20th, Grasmere; 21st and 22nd, Keswick; 23rd, Longtown; 24th, Hawick; 25th, Edinburgh; 26th, Dunbar; 27th, Belford; 28th and 29th, Alnwick; 30th, Durham; 31st, Northallerton; August 1st, Ferrybridge; 2nd, Retford; 3rd, 4th, 5th, 6th, and 7th, Newark, detained by the rain; 8th, Stamford; 9th, Normon Cross; 10th, Hitchin; 11th, home in London.

During the 31 days I was away I slept in 24 beds. I experienced the greatest kindness everywhere and I had little or no trouble with my tricycle. My weight on my return was the same as when I started—116 lb. net. My tricycle weighed 45 lb. without luggage, and with what I carried about 60 lb. It was geared up to 72 and my cranks were seven inches in length. I am open to be examined by any medical man as to my bodily health.

I am, Sirs, yours faithfully,

Kilburn Priory, N.W. C. J. HARRIS, M.R.C.S. Eng., &c.

## THE PREVENTION OF INSANITY.

*To the Editors of* THE LANCET.

SIRS,—In the leading article in THE LANCET of August 11th, entitled "The Prevention of Insanity at its Sources," it is remarked: "It would appear that in the province of psychiatric medicine the importance of the principle [of prevention] has not yet been sufficiently realised." And again: "With his hands filled [in ways described] he [the alienist] has not had as much leisure as is desirable for considering the prevention of insanity." The writer of the article does not surely suggest that it is the alienist who fails sufficiently to realise the importance of the prevention of insanity and to consider the methods of prevention? If any alienist so fails he must be unaccountably incapable of learning the chief lesson of his daily work, and he may with propriety be advised to employ his abilities in some more appropriate sphere. I venture to suggest that the average alienist is fully aware that prevention "is the first and most practical aim of medicine" in all its branches. He is ready with his message anent prevention what time public opinion and the legislature are prepared to listen to him, albeit his task is harder and his facilities for inculcating knowledge less than in the case of the general physician, who has to enlighten the public upon matters, such as the prevention of tuberculosis and of specific fevers, as to which it is largely anxious to receive information.

It appears from Dr. Percy Smith's remarks that in Finland and in Norway (to these countries I believe one, at least, of the States of the American Union may be added; there, according to a leading American organ on insanity, the marriage of "epileptics, imbeciles, and feeble-minded" was in 1895 made illegal, under certain conditions) public opinion is riper for legislation on some of the vital points in question than it is here. So much the better for the people of those countries and the worse for the British taxpayer. His foreign compeers make probably a humbler, a less ambitious effort to house and provide for their insane, but they and those authorised to act for them are, on the other hand, blessed with a greater receptivity towards the teachings of the experts in the matter of prevention.

I am, Sirs, yours faithfully,

EDWIN GOODALL.

Joint Counties Asylum, Carmarthen, August 13th, 1900.

## THE SOUND VALUE OF LETTERS IN READING.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of May 26th, p. 1506, Professor James Hinshelwood of Glasgow in the course of a paper on Congenital Word-blindness, says: "The memory of words is first registered in our auditory memory—i.e., we are able to spell a word before we are able to recognise the word by sight alone. When the individual has acquired in his visual memory a knowledge of the individual letters he is able to read words by spelling out aloud each letter, and thus by appealing to his auditory memory he gets the proper word." Professor Hinshelwood does not exactly say so, but I infer that he means that by spelling a word such as "cat" the pupil judges from the *sound value* of each letter that combined they produce the sound *cat*. I do not doubt that this is generally so and as exceptions may be of interest I send you the following case.

Over ten years ago I saw a Borneo Dyak woman, about 17 years of age, who had begun to learn to read English, although she could only speak a few sentences. She had no previous education but could speak Dyak and Malay, in which latter language the instruction in English was conveyed to her. She had lived partly in her Dyak village and partly with her aunt who was employed in a European family. She had also on two occasions spent several months in hospital for tuberculous ulcers on the legs and arms. So she was not entirely ignorant of European ways and ideas and she was very intelligent, though the perceptive faculties were in advance of the reasoning ones. She learned her alphabet without any difficulty and went on from small words to those of eight or more letters quite readily. Her visual memory was excellent. But it was found that she had no idea of the *sound value* of a letter nor could she be got to understand it. The length of a word within reasonable bounds gave her no extra difficulty. "Elephant" gave her no more trouble to remember than "rat" when once she had mastered its form. She read "dog" because she had been taught to give those letters that sound, but substitute a "t" for the "g" and she knew absolutely nothing about "*dot*." She recognised the change and learned the new word, but could not see that the difference was caused by the *sound value* of the changed letter. To try her she was told that "c a s e" spelled *horse* and saw nothing unusual about it. Those letters spelled horse, that was all. But such experiments were not tried often lest it should destroy her confidence in her teacher. No doubt in time she

would have read well, as her stock of words increased, but I do not think she would ever have been able to read a new word, however simple, without its being first pronounced for her.—I am, Sirs, yours faithfully,

J. W. ROLPH, M.D. Univ. Vic. Col., Canada,
L.R.C.P. Lond.,
Medical Officer, Pahang Corporation, Lt.
Malay Peninsular, July 2nd, 1900.

## THE VICTORIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION AND THE CASE OF MR. H. M. O'HARA.

*To the Editors of* THE LANCET.

SIRS,—In the last number of THE LANCET [1] there appears what purports to be an account of the O'Hara case from your Melbourne correspondent. This account, being written by a prominent member of the late council, is purely an attempted justification of their action and is not a proper or full statement of the case. In justice to the present council and branch, might I ask you to make known the following facts through the medium of your widely-circulated journal?

The members of the present council, much against their inclinations, have taken up the work of the branch in order to prevent the branch from breaking up and to protect the interests of those members who were opposed to the extreme action of the late council. The members of the present council are decidedly of opinion that it is the duty of every member of the profession to protect, as far as he can, a brother professional's reputation, and only convict him of either a crime or a breach of ethics, after an impartial hearing, and upon the clearest evidence. When a decision is come to in the proper and constitutional way it should be loyally accepted by his brother professionals. We wish to strongly emphasise the fact that no body of men are more keen and zealous in upholding the dignity and honour of the profession than the council and members of the Victorian branch. We greatly resent the suggested imputation to the contrary. We take this opportunity of expressing the opinion which we have formed, and to which we submit any fair and right-minded man must come to, that the conduct of the case by the late council was inconsistent with all ideas of British fair play and abhorrent to every right-minded man.

Before pointing out a few respects in which the late council acted in a way opposed to the principles of natural justice it is necessary for us to make it clear that Mr. O'Hara is no longer a member of the Association, having resigned on March 29th last.

We now lay before you a few facts which clearly show to the fair-minded men that the conduct of the case was a travesty of justice. The late council was sitting purely in a judicial capacity; as such, every one of them should have been above any suspicion of bias and no one of them should have acted as accuser and one of the judges. Dr. Springthorpe, who proposed the resolution of expulsion at the council meeting, directly acted as the accuser and outside the council sought to gather evidence to substantiate his charge; in addition to which he acted as one of the judges. Further, Mr. O'Hara asked for the name of the member who made complaints against him. This was refused him. He afterwards asked for the name of the member who was proposing the resolution for his expulsion. This was refused him. When the charge was conveyed to him in the vague terms "for your connexion with the Silenette Company, Limited," he asked for better information of what the charge was so that he might be prepared to meet it, pointing out that his connexion might be either proper or improper. The council refused to give him any further particulars. On the conclusion of the taking of evidence the meeting of the council was adjourned. Mr. O'Hara was not invited to attend such adjourned meeting nor was he informed when the same was to be held, as he was entitled to under By-law 4 of our rules. He was thereafter informed that the council had passed a resolution expelling him and when he wrote three times for a copy of the evidence upon which his expulsion had taken place this was also refused him. The explanation of this, afterwards given by the President (Mr. G. A. Syme) to the general meeting on March 21st, being that they (the Council) thought it might get into the hands of the members of the Association and improperly prejudice them and that they might pre-judge the case. My council is at a loss to know what this explanation means. It clearly shows the length the council were prepared to go to get the branch to support their resolution of expulsion.

At least one of the members of the late council, whilst so acting as judge, personally canvassed and sought to improperly influence members of the branch before the meeting on March 21st, whilst another the night before the meeting sent out his private cards to certain members urging them to attend the meeting. After the evidence had been closed Dr. Springthorpe looked about for further evidence and at the last moment improperly submitted what he declared to be additional evidence to the general meeting. In addition to this some of the council threatened that unless the members of the branch supported their verdict they would resign from the branch and "smash it up." Each member of the branch at the general meeting was called upon to exercise the same judicial function as the members of the council, and, in fact, acted as a court of appeal. Notwithstanding that the council was sitting purely as a judicial body, and that they were trying a brother professional—although perhaps not for a criminal offence, still, for an alleged breach of medical ethics, which they regarded as sufficient to professionally and socially destroy him—they acted in the way I have pointed out. To the large number of members who voted against Mr. O'Hara's expulsion these proceedings and tactics were abhorrent, as they must be to all right-minded men.

These facts alone are more than sufficient to vindicate the action which the branch took, and hence has the support of the present council. Since taking office the council have very carefully considered Mr. O'Hara's case and they are more than ever confirmed in opinion that the charge against this gentleman was not proved. Further, since assuming office we have ascertained that important correspondence which took place between Mr. O'Hara and the late council was not even placed before the general meeting on March 21st. Nor was the very important fact that Dr. Springthorpe and, we understand, some other members of the council desired to compromise the matter with Mr. O'Hara between the passing of the resolution by the council and the holding of the general meeting placed before the meeting. Of such suggested compromise we have written evidence. We are decidedly of opinion that, instead of the case being heard on its merits, there were many influences at work which prevented the accused from having a fair and impartial hearing before the late council.

I am, Sirs, yours faithfully,

W. B. VANCE,
Honorary Secretary, Victorian Branch,
British Medical Association.
High-street, St. Kilda, July 4th, 1900.

[1] THE LANCET, May 26th, 1900.

## "THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE."

*To the Editors of* THE LANCET.

SIRS,—I was present at the meeting of the governors and subscribers urgently summoned on the 11th inst. under circumstances so well known to your readers as to require no explanation from me. At this meeting the governors and subscribers were represented by 16 persons, while there were six or seven members of the board of management, certain of whom had formed the committee of inquiry into the condition of the hospital recently undertaken in response to the representations of the medical staff. No member of the medical staff was present. Whether the result of such a meeting can be accepted as final is a matter upon which I do not wish to enter, but there were certain points brought into prominence at the meeting which should, in my opinion, receive publicity.

The chairman, Mr. George W. E. Russell, spoke for an hour with his accustomed eloquence on the two questions before the meeting—that is to say, (1) whether the demand of the medical and surgical staff for direct representation upon the board should be granted; and (2) whether it is desirable to hold a further inquiry into the condition of the hospital—and then called upon a gentleman—a member of the Board of Trade I understood—to second his resolution:

That it is undesirable that the medical staff should be represented on the board.

The seconder proceeded to dilate upon the impossibility of any institution being successful in its working unless its affairs were conducted upon sound business principles, adding that it would be as reasonable for the servants of, say, the London and North-Western Railway or the cabinet-makers in Sir John Maple's establishment to ask for direct representation on their respective boards of directors as for the medical staff of the National Hospital for the Paralysed and Epileptic to demand seats on the board of management of that hospital. Is it not astounding that the board should allow without protest the brilliant work of a staff of world-wide renown thus to be ranked with the labour of cabinet-makers and railway servants?

The second point to which I wish to draw attention is the fact that the chairman was satisfied to explain to the meeting that the secretary-director was not the only medium of communication between the medical staff and the board of management; because, when any practical grievances were brought forward by the staff, the slightest hint to the sisters in charge of the ward or to the lady superintendent would produce the desired effect. Such a complete misunderstanding of the proper relation of the honorary medical staff of a hospital towards the nurses of a hospital has surely never been recorded publicly before.

The position is a very grave one. I trust that wiser counsels may prevail with the board of management before irreparable harm is done to the hospital.

I am, Sirs, yours faithfully,

August 13th. A LIFE GOVERNOR.

# Obituary.

## SIR WILLIAM STOKES, M.D., M.CH. DUB., F.R.C.S. IREL.,

SURGEON-IN-ORDINARY TO HER MAJESTY THE QUEEN IN IRELAND.

THE unexpected death from pneumonia of Sir William Stokes, one of the most eminent and well known of the senior consulting surgeons of Dublin, has caused widely spread grief and disappointment among the members of the medical profession and the public in Ireland. His death took place on August 18th at Pietermaritzburg, the sad news reaching Dublin through a telegraphic message from Lord Lansdowne from the War Office, received in Dublin at three o'clock in the afternoon of the 19th. The event was entirely unexpected, inasmuch as the distinguished surgeon was timed to reach home on Sept. 20th, while the only intimation that he was ill was contained in a telegram received by Major-General Preston on the evening of the 18th. He was suffering from chronic bronchitis when he left Southampton for the Cape, but his health improved greatly during the voyage, and he wrote from the Cape that he was very well.

SIR WILLIAM STOKES, M.D., M.CH. DUB., F.R.C.S. IREL.

Sir William Stokes was the son of William Stokes, the celebrated physician who did such admirable work on the subject of diseases of the chest, while his grandfather was the well-known Whitley Stokes. His family is one which has produced many pre-eminent in medicine, surgery, and literature. Thus besides Whitley Stokes the grandfather, and William Stokes, his eldest brother Whitley Stokes, C.S.I., C.I.E., is a distinguished Indian administrator, a well-known Celtic scholar, and formerly legal member of Council to the Viceroy of India. A cousin, Sir H. E. Stokes, is also an Indian administrator and was formerly a member of Council of the Government of Madras, while another cousin, Sir George Gabriel Stokes, is Lucasian Professor of Mathematics in the University of Cambridge, is M.P. for the University, and is a past President of the Royal Society.

Sir William Stokes was educated at the Royal School, Armagh, and at Trinity College, Dublin. He received his medical training at the Carmichael School of Physic and the Richmond and Meath Hospitals. He also studied in Berlin, Paris, Vienna, and Dublin. In 1863 he graduated at the University of Dublin as M.D. and M.Ch., becoming a Fellow of the Royal College of Surgeons in Ireland in 1874. He was for many years surgeon to the Richmond Hospital, but left this institution to take a similar post at the Meath Hospital, partly because his father had been physician there.

The late Sir William Stokes filled the position of Professor of Surgery to the Royal College of Surgeons in Ireland since 1872, that is for nearly 30 years. His operation for amputation at the knee-joint—a modification of Gritti's procedure—is well known to surgeons now as "Stokes's operation." Many other operative procedures of importance have during the last 20 years emanated from him. As to his position and eminence as a surgeon there is much to be said. He commenced his surgical career as lecturer on surgery in the old Carmichael School. He was an examiner in surgery to the Queen's University, and was President of the Royal College of Surgeons in Ireland in the years 1886 and 1887 and examiner in surgery to the University of Oxford. He filled the presidential chairs of the Pathological Society of Ireland and of the Irish Graduates' Association, while he was also intimately connected with many British and foreign medical societies. He delivered the address in surgery of the British Medical Association at the jubilee meeting in Worcester in 1882. Referring to that occasion Sir Charles Cameron quotes THE LANCET in his "History of the Royal College of Surgeons in Ireland" as follows: "The event of greatest interest to the surgeons assembled at Worcester was undeniably Professor Stokes's address. The occasion, the honoured name inherited, and the high reputation borne by the orator demanded a contribution to surgical literature of more than passing value in substance, in form, and in delivery. The address was fully equal to all expectations and hopes, and to his character as a skilful and wise surgeon Professor Stokes has now added the reputation of an orator worthy of his country." In the same work will be found the laudatory report in the *Boston Medical and Surgical Journal*, which said: "There was an unmixed expression of admiration and delight at the address in surgery, in the delivery of which Professor Stokes proved a medical orator scarcely if at all second to Sir James Paget." Sir William Stokes was born on March 10th, 1839, and was therefore in his sixty-first year. He had filled the position of Surgeon-in-Ordinary to the Queen in Ireland since the year 1892, and was at different times honorary president of international medical congresses in Berlin, Rome, and Moscow. It will thus be seen that his position in surgery is almost as highly distinguished as that once occupied in medicine by his illustrious father. The sentiment expressed by Sir William MacCormac finds many echoes in Ireland when speaking of our losses in the war, he said "the medical profession has had its victims, and all connected with it, and many more besides, will hear with grief unfeigned of the untimely end of one of its foremost and most highly respected representatives, Sir William Stokes, who has died at the post of duty."

Sir William Stokes's publications included an admirable Life of his father, William Stokes. This book, which was entitled "William Stokes, his Life and Work," was published in 1898 as one of the series of Masters of Medicine. Besides the address in surgery mentioned above he delivered the Cavendish Lecture in 1888 upon "The Altered Relations between Surgery and Medicine," and contributed many papers upon operative and clinical surgery to the journals. He married, in 1869, Elizabeth, daughter of the Rev. J. L. Moore, D.D. She survives him, as do their two children, a son, Alleyne, who is at Woolwich, and a daughter.

## CHARLES JAMES HISLOP WARDEN, M.D. BRUSSELS, M.R.C.S. ENG., L.R.C.P. LOND.

LIEUTENANT-COLONEL, INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL WARDEN, who died very suddenly on July 18th at his residence, 26, Highbury-grove, London, held for many years in India a prominent position as a chemist and pharmacologist. He was born in 1851 and was the only son of Captain Charles William Warden of St. Heliers, Jersey. He studied medicine at St. George's Hospital and took the diplomas of M.R.C.S. Eng. in 1872 and L.R.C.P. Lond. in 1873. While a student he interested himself in chemistry and gained a silver medal for pharmaceutical chemistry and materia medica given by the Society of Apothecaries; in 1873 he also obtained certificates of proficiency in chemistry from the Royal College of Chemistry and the Royal School of Mines. In 1874 he joined the Bengal Medical Service, and in 1876 was appointed officiating civil surgeon of Bhagulpur. A few months later he was deputed by the Board of Revenue on special duty to inquire into the cause of repeated failure of the system of taxing materials used in the distillation of spirits, and in 1878 he acted for six months as principal assistant to the opium agent, Behar. In 1879 he was appointed professor of chemistry at the Calcutta Medical College and chemical and opium examiner to the Government of Bengal, appointments which he held until 1892. In the course of these 13 years he was repeatedly thanked by the Government for the excellence of his work in various capacities. During that time, also, he examined most of the indigenous drugs and was largely instrumental in placing before the profession the "Pharmacographia Indica," a standard work in the preparation of which he was associated with Brigade-Surgeon W. Dymock of the Bombay Service and Mr. David Hooper, quinologist to the Madras Government. At the instance of the Government he made investigations on the packing of opium, on the testing of petroleum, on the manufacture of country spirits and the presence of fusel oil therein, and on the determination of the alcoholic strength of imported spirits. In 1884, while on 18 months' furlough in Europe, he took the degree of M.D. Brussels, and in 1886 was associated with Sir Frederick Abel and Mr. Boverton Redwood in drawing up the "Rules for Testing Petroleum" which were afterwards incorporated in the Petroleum Act of 1886. In 1892 he was appointed officiating medical storekeeper, Bengal. In 1893 the Pharmaceutical Society of Great Britain elected him a Corresponding Member. In 1893 he was a member of the Indian Hemp Drugs Commission and in 1895 a member of the Indigenous Drugs Committee. In 1886 he was elected a Fellow of Calcutta University. Of Lieutenant-Colonel Warden's communications to scientific journals 28 were his own and nine were written in association with others. He came to England on furlough in 1898, and in 1899 he succeeded the late Dr. F. N. Macnamara as examiner of medical stores at the India Office. Of a somewhat retiring disposition and not caring for the current pleasures of society, his chief delights lay in his laboratory and his garden. To those who had the privilege of his friendship he always extended a warm welcome, and there must be very many who mourn the early loss of a true and warm-hearted friend and brother officer.

## JOHN ANDERSON, M.D., LL.D. EDIN., F.R.S., F.R.S. EDIN.

DR. JOHN ANDERSON of 71, Harrington-gardens, South Kensington, who died on August 15th at Buxton after a very short illness, was born in Edinburgh in 1833, studied medicine at the University there, and graduated as M.D. in 1861, his thesis, for which he received a gold medal, being entitled, "Observations in Zoology." Soon afterwards he was appointed professor of natural science in the Free Church College, Edinburgh, and filled the chair till 1864, when he proceeded to India and became superintendent of the Indian Museum, to which appointment that of professor of comparative anatomy in the Medical College, Calcutta, was added in the course of two or three years. In 1868 and 1874 he was selected by the Government of India to accompany expeditions to Western China *viâ* British and Independent Burmah in the capacity of scientific adviser. In 1881 he was sent by the trustees of the Indian Museum to investigate the marine zoology of the Mergui archipelago, off the coast of Tenasserim. In 1887 he retired from the service of the Government of India. Dr. Anderson was a Fellow of Calcutta University, a member of many learned societies, and the author of numerous papers on zoology and of several books, among which may be mentioned his "Report on the Expedition to Western China *viâ* Bhamô," published by the Government of India in 1871, and "Mandalay to Momien," published in 1875. In 1885 the University of Edinburgh conferred on him the honorary degree of LL.D. In 1896 he published a small treatise on the "Herpetology of Arabia."

## PIERCE ADOLPHUS SIMPSON, M.D. ST. AND., M.A. CANTAB.

DR. PIERCE ADOLPHUS SIMPSON, Emeritus Regius Professor of Forensic Medicine in Glasgow University, who died at Auchengrange, Lochwinnoch, at the age of 63 years, was the younger son of Mr. Robert Simpson of Cloncorick Castle, Garrigallen, county Leitrim. He was educated at Rugby School and at the Universities of Edinburgh, St. Andrews, and Cambridge, and professionally at the medical schools of Cambridge and Edinburgh. He received the M.D. degree from St. Andrews in 1861, and took the M.A. with mathematical honours at Cambridge in the following year. He had been lecturer on medical jurisprudence at Anderson's College, Glasgow, physician to the Glasgow Royal Infirmary, editor of the *Glasgow Medical Journal*, and professor of forensic medicine in the University of Glasgow.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—Dr. F. Michl, professor of surgery in the Bohemian University of Prague, has died at the age of 50 years.—Dr. Johann Kjeldahl, Director of the Chemical and Physiological Institute at Alt-Karlsberg, near Copenhagen, whose name is universally known as the inventor of the much-used "Kjeldahl process for estimating nitrogen" in organic substances, has unfortunately been drowned at Hillerød when endeavouring to save a boy who was in danger while bathing.—Dr. G. Yankoloff, a Bulgarian physician, who was formerly president of the National Assembly.—Dr. Falconi, formerly professor of anatomy in the Cagliari Medical School.

# PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending July 14th are as follows: remaining at the beginning of the week, 57; admitted, three; discharged, nine; died, none; remaining at the end of the week, 51. The totals up to the end of the week are as follows: cases, 300; discharges, 148; deaths, 101; "contacts" isolated, 1693; "contacts" remaining, 24; cases among "contacts," seven. The above figures include Chinese, of whom 10 were admitted, with eight deaths, all the other patients being whites.

Of the three cases admitted during the week just ended only one was new, and reported in the acute stage. The other two were those of men who presented themselves as outpatients, desiring advice for inguinal buboes. One, who was attacked about five weeks ago, had shortly before had gonorrhœa and is known to have presented no other sign of illness on July 2nd than an inguinal gland considerably enlarged and then in course of suppuration. The other man, attacked about four weeks ago, could assign no reason for the occurrence of his bubo except injury received at his occupation of quarryman—histories of injury are quite commonly given by plague patients—while, on the other hand, he is known to have had a temperature of 101·6° F. when he first consulted a medical man some three weeks since. The probability appears to be that the latter had had the plague, the former not, but at all events both belonged to a much earlier date. Both, however, were sent to isolation and were placed in the convalescent wards. No case having occurred since July 1st the Government was advised that in accordance with the Venice Convention clean bills of health might once more be issued to shipping on and after July 12th, the bills to be endorsed with such statement as to subsequent occurrence of scattered cases as might become necessary.

July 17th.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*Inebriate Homes.*

RECLAIMING the habitual drunkard has always been a difficult, and often a hopeless, task. The report of the first year's experience at the Brentry Homes near Bristol has just been issued. The board of management, after giving some interesting details, express themselves as being hopeful of success. They call attention to the difficulties met with owing to the violent character of some of the persons committed to the homes and appeal for them not to be sent. The subject was brought before a meeting of the Birmingham Justices held on August 13th, when it was stated that in the absence of any State reformatory it was not possible to send these cases elsewhere. An opinion was expressed that the violent drunkard might be sent to prison, but it was shown that a short term of imprisonment had no curative effect upon the habitual drunkard, who resumed his evil ways as soon as he was released from custody. One cannot but sympathise with the managers of the homes in their praiseworthy endeavours and recognise how important it must be for the proper conduct of such homes that the obstreperous and vicious should not be mixed with those who may be amenable to milder influences. Time, no doubt, will aid the promoters of this valuable institution in finding means most suitable to the object in view. Meanwhile the management of the sheep and the goats will tax the resources of those who find it impossible to divide them and to deal with them advantageously on separate lines.

*Marston Green Homes.*

Turning to a more attractive form of homes I record with satisfaction the progress made in the above-named institutions. These homes were established about 21 years ago by the guardians of the parish of Birmingham in the hope of raising to good citizenship those who had sunk by no fault of their own. They had the merit of being the first homes of the kind established in the kingdom. About an average of 300 children are in residence, with from 20 to 30 boys or girls in each cottage. For the boys a foster father and mother are provided, and for the girls a foster mother. The training is conducted by experienced masters and mistresses and the work is carried out with much zeal and interest. The good result of the management is shown by the fact that there has been only one death, and that there are at present only six patients, among some 400 children who had gone through the homes during the past year. The Lord Mayor (Alderman Beale) who presided at the annual meeting, paid a high tribute of praise to the management, and expressed an interest in the valuable results which had been obtained in the past year by the teaching of trades and occupations to the children.

*Drug Adulteration.*

A Birmingham chemist was fined at Tamworth Police-court, on August 14th, £10 and costs for selling milk of sulphur adulterated with 49 per cent. of sulphate of lime, and £5 and costs for selling camphorated oil which contained 25 per cent. of mineral oil instead of olive oil and 10 per cent. instead of 20 per cent. of camphor. Truly this kind of fraud is expensive when found out.

*Handsome Hospital Gift.*

Mr. John Corbett of Droitwich has given a further sum of £10,000 to the Corbett Hospital at Stourbridge, thus making his benefactions to that institution over £25,000. This is irrespectively of the value of the house he is erecting in the hospital grounds—a handsome building intended for the dwelling of a medical officer.

*Death under Chloroform.*

A young man, aged 23 years, died at the General Hospital on August 15th while under the administration of chloroform. The patient was suffering from a disease of the chest in which operation was necessary. Syncope was said to be the cause of death.

August 21st.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*Inebriate Reformatories in Lancashire.*

A STEP forward has at last been taken towards the establishment of inebriate reformatories in Lancashire. On August 19th a meeting was held in Preston of representatives of contributory boroughs and of the county council to consider the question. This board to carry out the Inebriates Acts in Lancashire consists of 18 representatives of the County Council and 25 members of the county boroughs. All the county boroughs have joined the board except Oldham. Borrowing power is given to the board up to £20,000 without the need for obtaining the sanction of the Local Government Board. Sir John Hibbert was unanimously appointed chairman. He described what was being done in other parts of the country and stated that there were now 133 inmates under detention, 126 women and seven men. The small number of the men is due, not to greater male sobriety, but to the want of accommodation. His own feeling was for provision being made for 100 men and 100 women in separate buildings, not too near each other, but near enough to be under the care of one medical superintendent who would reside at the men's reformatory, but who would have under his care and be responsible for the women's reformatory, where there would be a lady superintendent. He suggested that the site for the men should not be less than 50 acres and that for the women from 20 to 25, and that the reformatory should be within 10 miles of Preston, where the meetings of the board will be held. A committee was appointed to inquire as to sites and the cost of one reformatory for men and one for women, or of two reformatories for women.

*Non-Notification of Scarlet Fever.*

A nominal penalty of one shilling and costs seems a light punishment for failing to notify four cases of scarlet fever and sending a child out to a neighbouring shop while "peeling." But the Bench inflicted this penalty the other day at Eccles for an offence committed in April last. A woman had four children going through the various stages of scarlet fever, but did not notify them, nor did she call in a medical man, though she admitted that she isolated them—incompletely, however, as stated above, one having been sent to do some shopping. The mother pleaded ignorance as to notifying the disease at the Town Hall and the nominal penalty inflicted shows that the magistrates were touched by the plea, although they expressed the hope that the public would take the prosecution as a warning. On the other hand, it must be hoped that they will not take it as an encouragement to propagate scarlet fever at a cost within the reach of all. It is, however, significant that yesterday, August 20th, three additional cases under the Notification Act were heard at the Eccles Police-court. One of the patients was a boy, aged 15 years, whose case was notified but who was out again without his recovery having been certified. The costs (5*s*. 6*d*.) were ordered to be paid "as the town clerk did not press for a heavy penalty." Why not? He cannot wish for the spread of scarlet fever and if he will ask Lord Roberts he will probably hear that leniency is sometimes disappointing. The next case was that of a labourer suffering from scarlet fever who, though repeatedly warned that he must isolate himself, refused to do so. He set the law at defiance and wilfully endangered other people, so he was fined 5*s*. and costs. The law seems to be feebly administered at Eccles, but perhaps the people rather like scarlet fever. The last case was that of a woman who failed to notify a case of scarlet fever. She, also, though apparently less guilty than the defiant labourer, was also fined 5*s*. and costs. Those of the inhabitants of Eccles who object to scarlet fever will think they deserve better protection than the town clerk and the magistrates seem disposed to give.

*A Hospital for Hyde.*

At the meeting of the Town Council of Hyde held on August 14th it was reported that the death-rate of the previous month (14 per 1000) was the lowest on record, while the birth-rate was amongst the highest. Plans of a site for a new infectious hospital had been submitted to the Sanitary Committee who advised the council to approve the site and to instruct the borough surveyor to prepare plans for a new infectious hospital to contain "not fewer than 50 beds." One of the councillors explained that the Local Government Board "required that there should be a place for small-pox and a separate place a considerable distance away for scarlet fever. The brick portion of the present hospital might be used for small-pox cases. As to the new building there was no natural drainage, but that would have to be got over as they got over it with the present hospital." This seems rather a confused statement, and it is to be hoped that no blunders will be made, which does not seem impossible. Another member of

the council said that "a portion of the present hospital was in a shocking state and was a disgrace to the town." One wonders if this is the part to be used for small-pox cases. The committee's recommendation was adopted by the council.

*Manchester Licences.*

At a meeting of the Manchester city justices held on August 17th for the purpose of electing a Licensing Committee some interesting facts were mentioned. The chairman of the committee, Mr. T. T. Shann, said it seemed to him that there were too many licensed houses in Manchester. Referring to a recent article which touched on the question of drinking among women in Manchester he said that the committee could not interfere with confectioners' shops and similar places where the liquor was obtained; and with regard to singing-rooms, which had been designated drinking-dens, as judges, not prosecutors, they could not interfere, but it was a matter for the chief constable and the Watch Committee. The granting of spirit-dealers' and bottled-beer licences had been responsible for a great deal of drinking, and "it was a significant fact that out of 60 applications for new licences 46 were for spirit-dealers' licences, over which the magistrates had no real control." It is probably new to many people that Manchester affords more facilities for drinking than Liverpool. In the latter town there are 2090 licences and in Manchester there are 3014. Manchester has 518 fully-licensed premises and Liverpool has 1906, but of beerhouses the latter has only 256 against 1843 in the former, no less than 1726 of that number (1843) dating back to 1869 or earlier, and with these the magistrates have no power to deal unless something can be proved against the house or the tenant. In Liverpool there were only 143 "off" or spirit-dealers' licences, while in Manchester there were 633, "and these figures proved that on account of the number of fully licensed houses Liverpool did not require so many spirit-dealers' licences." In Manchester they have increased from 231 in 1871 to 709 at the present time. In Ireland the magistrates have more power in dealing with such licences than their brethren in England and it was said that "it was generally held that the new powers which had been conferred upon the magistrates of Ireland should also be applied to England," but any interference with the privileges of the drink producers and drink distributers will be fiercely contested by that powerful body which is more interested in increasing their own wealth than in promoting the true interest and well-being of their countrymen.

August 21st.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*The Excessive Supply of Licensed Houses in Congested Areas of the City: Citizens' Protest.*

A MEMORIAL was recently addressed to the licensing bench of magistrates, signed by the Lord Bishop of the diocese and other influential citizens, praying the magistrates to receive a deputation from their number, in view of the approaching annual licensing sessions, to protest against the excessive supply of public-houses in the city. Through an informality in the mode of request the deputation could not be received. The memorialists have, however, forwarded to the individual members of the licensing bench a copy of their prayer, in which they recognised the beneficent results which had followed upon the example set by the magistrates in discouraging the sale of intoxicating liquors to young children, and in prohibiting the use for trade purposes of doors opening otherwise than into public thoroughfares, and many other efforts for the benefit of sobriety. The prayer of the memorialists is considerably strengthened by the recent annual report of the medical officer of health, which devotes many pages to the evil effects of intemperance. Dr. Hope deplored a further increase in the number of deaths certified by the coroners' juries as the result of excessive drinking. "The misery and degradation, and destruction of human life consequent upon excessive and uncontrolled indulgence in alcohol are the saddest features which sanitation has to contend against and the most hopeless, since, notwithstanding that the source of this mischief is plain, the sanitary authority is powerless to control it." Inquests were held during the year on the bodies of 216 persons whose deaths were due to the effects of excessive drinking. Of these several were fatally injured by accident whilst under the influence of drink. The memorialists point out that Dr. Hope lays stress upon the fact that deaths from excessive drinking are localised, and in the district where they are most numerous the general death-rate is highest. He illustrates this fact by comparing the rate of mortality in the Exchange and West Derby (East) wards, which have each a population of about 42,000. In the Exchange ward the general death-rate was 38·7 per 1000 compared with 16·5 per 1000 in West Derby, whilst the proportion of deaths due to excessive drinking in the Exchange ward was 3·4 per cent. as against 0·5 in West Derby. The memorialists also urge that the time has come for the refusal of music and singing licences to public-houses. The representations of the memorialists will, no doubt, have great weight with the licensing bench at the approaching sessions.

*The David Lewis Northern Hospital.*

The completed portion of the David Lewis Northern Hospital, which has been erected to replace the old institution at the cost of the David Lewis Trust, was opened on July 30th for the reception of patients without any formality. All the patients have been removed from the old building into the new quarters, which are in every way well adapted to their purpose. There are 150 beds in the portion of the hospital just opened and it affords far greater facilities for the treatment of the sick than were experienced under the former *régime*. The south pavilion and the administration blocks are still in the builder's hands and will not be completed until next spring. The foundation-stone of the new hospital, it will be remembered, was laid in 1896 by the Countess of Derby, the Earl of Derby being at that time the Lord Mayor of Liverpool.

*Corporate Baths and Washhouses.*

A salient point in the corporate administration is the ample provision of free baths and washhouses in different parts of the city for use by the poor of both sexes. Further provision in the same direction is about to be made in Beacon-street in the city, and in Lister Drive in the West Derby district, plans for which have been submitted to the Baths Committee for approval, together with estimates of the cost. The baths in Lister Drive will contain three plunge baths, including one for females, and numerous vapour and other private baths. No fewer than 455,575 bathers availed themselves during the past 12 months of the facilities offered by the free bathing establishments provided by the corporation. A large proportion of the bathers were children of both sexes and a satisfactory feature of the vigilance exercised by the officials lies in the fact that throughout the period named no accident occurred in any of the baths.

*Major Ronald Ross, late I.M.S., and the International Medical Congress.*

Major Ronald Ross, the lecturer on tropical medicine at University College, is to be congratulated upon the compliment paid to him by the International Medical Congress recently held at Paris. Professor Blanchard, in the name of the section of Bacteriology, wired to Major Ross expressing appreciation of his valuable investigations of the causes of malarial fever. The telegram was in the following terms: "Section de Bactériologie vous adresse chaleureuses félicitations pour découvertes sur paludisme."

*A New Epileptic Home in Cheshire.*

A material advancement is about to be made with the proposed scheme of the Lewis Trustees to erect a home for 500 epileptic patients out of the bequest of £50,000 devoted to that purpose. An extensive estate, formerly the property of Lord Knutsford, at Great Warford, near Alderley Edge, Cheshire, has been secured, and the plans have been laid before the Bucklow rural district council for their formal sanction. The colony when finished will be one of the best equipped institutions of its kind. It will be known as the Lewis Epileptic Colony.

August 21st.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The New Veterinary College for Ireland.*

THE new veterinary college has at last become an accomplished fact. The premises, which are now undergoing external alterations, are situated near Ball's Bridge, the site

of the annual Dublin Horse Show. The first session of the college will commence on Oct. 3rd next and terminate in July, 1901. In addition to the Government grant of £15,000 for the institution a guarantee fund of £2000 is being provided, while the Royal Dublin Society is contributing £200 a year for five years to meet the expenses of the college until it is able to become self-supporting. The President of the Board of Governors is Sir Christopher Nixon, M.D.R.U.I., LL.D.; and the Vice-Presidents are Professor D. J. Cunningham, M.D. Edin., D.Sc, Dub., LL.D. St. And., F.R.S., William Field, M.P., the Right Rev. Monsignor Molloy, D.D., Sc.D., Sir William Thornley Stoker, M.D. R.U.I., Sir Charles A. Cameron, C.B., M.D. R.U.I., and T. D. Lambert, F.R.C.V.S. The treasurer is Professor George Francis FitzGerald, M.A., F.R.S., and the principal is an accomplished member of the Royal College of Veterinary Surgeons, Professor A. E. Mottam, B.Sc.

*The Union Hospital, Belfast.*

A report presented to the Belfast Board of Guardians on August 7th by Dr. E. C. Bigger, the senior visiting medical officer, on the number of patients and class of diseases treated in the Union Hospital for the six months ending June 30th, 1900, shows that there were 686 patients, made up as follows: typhoid fever, 332; scarlet fever, 87; measles, 54; whooping-cough, 55; small-pox, 1; chicken-pox, 49; erysipelas, 17; diphtheria, 26; mumps, 17; quarantine, 2; and medical cases, 46. Out of the 332 typhoid fever cases—an unusual number treated in the first half of the year—there were only 27 deaths. The admissions during the last three years to the Belfast Union Hospital are larger than the admissions into any hospital in the United Kingdom during the same period. There were no deaths in the 87 scarlet fever cases. All the cases of diphtheria—26 in number—were treated with antitoxin; two needed tracheotomy, and one of these, a boy, two and a half years of age, recovered. The chairman, in commenting on this report, said the Union Hospital was the best managed portion of their institution. Two years ago there were 420 cases of typhoid fever in the institution but the present epidemic was not so serious. The new ambulance for conveying patients to the hospital was one of the best in the three kingdoms.

*The Pollution of Belfast Lough.*

Dr. E. C. Bigger, medical superintendent officer of health, Belfast Union, has reported to the Castlereagh Rural District Council that, in company with Dr. A. Dunlop of Holywood, he inspected the foreshore of Belfast Lough from Holywood to Cultra on July 26th. They found the foreshore to a large extent covered with seaweed, which is mixed with sewage, and is in many places decaying, thus giving rise to a very disagreeable odour. They propose as a remedy to remove the seaweed from about the high-water mark furthest out, say, for half-tide level. Outward there is practically no decaying weed and they did not think it necessary to remove the weed from that portion of the shore. They also inspected the military barracks where there are over 1000 occupants, the sewage from which flows on to the foreshore on the Belfast side of Holywood, and this sewage as well as the sewage from the town of Holywood contributes considerably to the nuisance along the foreshore on both sides of Holywood. They recommend that the military authorities should carry their outfall sewer further out and that they should flush their sewers as far as possible with the outgoing tide. The town commissioners of Holywood, it is also suggested, should carry their sewer further out. These recommendations, it is advised, should be carried out at once, but they are only to be considered as preparatory to the establishment of some system of sewage purification, such as the bacterial, if this should be found to be desirable in the near future.

*A Vaccination Case.*

Dr. James Fulton, a dispensary medical officer in Belfast, was summoned by a man at the police-court, on August 11th, for vaccinating his child, a boy, aged five months, without being authorised to do so by his parents. It would appear from the evidence that Dr. Fulton, finding that the child, who lived in his district, had not been vaccinated, called upon the mother on July 7th and explained that she would be liable to a penalty if the boy were not vaccinated that week. The mother said that the child had diarrhœa and that he had not been vaccinated owing to his ill-health, and that Dr. Clokey, whom she had consulted, said he was not fit to be vaccinated. Dr. Fulton asked to see the child and the mother lifted him out of his cradle, and Dr. Fulton then said that the child was fit to be done and proceeded to vaccinate him. It would appear that, quite unknown to Dr. Fulton, Dr. Clokey, who had been with the mother when the child was born, had been his attendant since, and he gave evidence that the child had been suffering from indigestion and diarrhœa. He declined when the child was three months old to vaccinate him, owing to his delicate state of health, and he thought the vaccination had kept up the temperature. No certificate to the effect that the child was unfit for vaccination had been sent to Dr. Fulton, and when he heard that Dr. Clokey had been in attendance he at once wrote him a note in which he said: "I apologise for interfering with your patient and I am sorry if I have in any way done anything to injure the child." The whole matter seems to have originated in a mistake. The mother of the child had been a patient of Dr. Fulton's, and, purely through kindness, to prevent her being fined, he had, perhaps with excess of zeal, vaccinated her child. The magistrate said the matter amounted to an assault of a very simple technical character. He suggested that, having regard to the circumstances and to the fact that Dr. Fulton had sent a letter to Dr. Clokey expressing his regret for interfering with the child, that the summons be withdrawn, the doctor paying to the parents £1 and the costs, a course which was adopted.

*The Belfast District Lunatic Asylum.*

Dr. William Graham, medical superintendent of the Belfast District Lunatic Asylum, has just issued a very interesting report covering the year ending Dec. 31st, 1899, and containing financial tables for the year ended March 31st, 1900. The total number of patients under treatment in the asylum were—males 701, females 614, a total of 1315; 143 were discharged and 79 died. 334 patients were admitted during the year, the highest number since the opening of the asylum and 53 more than in the preceding 12 months. But this is really only an apparent increase of insanity, because (1) the area of Belfast has increased with a corresponding increase of admissions; (2) the procedure of admissions to the asylum is less cumbrous, so that friends of patients may take more advantage of early treatment, and as a result patients are now sent who formerly would have been detained at home; and (3) 30 per cent. of the total admissions have come from the Union Workhouse, where a proportion of chronic cases of insanity were formerly housed. Dr. Graham thinks, at worst, if there is really any increase of insanity it is slight. He emphasises as the three most prominent causes of insanity hereditary influence, intemperance in drink, and bodily disease. Dr. Graham very wisely dwells on the fact—so important for the public to know—that insanity is a purely physical disorder and that prophylactic measures and early treatment are the true means of restoration, instead of trusting to time and chance and trying to hide the existence of the affection as if it were a disgrace. The ratio of recoveries to the total number of admissions is 29·9 per cent., and to the number under treatment during the year 7·6 per cent. Of the deaths, 13 were due to general paralysis of the insane, a disease becoming more frequent, Dr. Graham says, in the district. 12 deaths were due to phthisis and it is hoped that a sanatorium for the treatment of such cases will be erected in the new asylum. The gross expenditure for the financial year ending March 31st, 1900, amounted to £23,462 2*s.* 10*d.*, being a capitation cost of £24 3*s.* 4*d.*, or £2 16*s.* 3*d.* less than the preceding year. Owing to legislative changes in connexion with the Local Government (Ireland) Act a committee of management takes now the place of the old board of governors. The report is both interesting and suggestive and not, as is so often in such documents, a mere *résumé* of dry details and statistics.

*Portadown Nursing Society.*

Colonel Saunderson, M.P., and his wife have generously provided for the Portadown Nursing Society a new ambulance, the choice of which was left to Dr. W. E. Hadden and Mr. J. L. Rowlett, and they selected an ambulance litter of the "Viaduct" pattern. It will be of great service to the town and district.

*Asylum Accommodation in Londonderry.*

At the usual monthly meeting of the committee of management of the Londonderry Asylum, held on August 17th, it was decided to adopt the recommendation of the committee regarding overcrowding in the asylum. They suggested that the ground floor of the north block of the present asylum be

given over to the female patients. In this way the accommodation of the female patients will be increased by 34 beds and that fresh accommodation be provided for 60 male patients at Gransha. This will necessitate the employment at that place of a resident assistant medical officer and some extra attendants.

*Dispensary Medical Officers' Holidays.*

There is a standing rule in connexion with Irish dispensary medical work that one medical officer cannot act as locumtenent for another. At a meeting of the Coleraine Board of Guardians on August 18th Dr. H. S. Morrison, medical dispensary officer of Aghadowey, and Mr. A. M. Adams, medical officer of Garvagh, asked for leave of absence, each to act for the other in turn, and the guardians wisely consented to rescind the rule against such a practice as neither of these medical men could find a substitute although last season Mr. Adams had offered £6 per week for one.

*The Belfast Lough Disaster.*

The result of the Board of Trade inquiry into the cause of the terrible disaster in Belfast Lough on July 21st last by which upwards of 10 persons lost their lives is that while the officers of the *Alligator* (the steamship coming from Scotland) are exonerated from all blame the certificate of the captain of the *Dromedary* (the boat going from Belfast to Glasgow) is suspended for a year and the chief officer is censured for not clearing or reporting the congested state of the forecastle.

*Cork Queen's College School of Medicine.*

Dr. George Ross, B.A., obtained first place at the recent examination for admission to the Royal Navy Medical Service. A total of 29 candidates presented themselves for the examination. Dr. Ross obtained his medical education at the Cork Queen's College, where he had a very distinguished career.

August 21st.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Action of Various Organs upon Certain Poisons.*

AT the meeting of the Hospitals Medical Society held on July 20th M. Thoinot and M. G. Brouardel communicated a paper upon the above subject. The action of the liver upon certain poisons is well known from the work of M. Roger, that of the brain from the researches of M. Widal and M. Nobecourt, while the experiments of Wassermann, Metchnikoff, Marie, Roger, and Jossué as well as those of M. Thoinot and M. G. Brouardel have contributed to throw light upon the rôle played by certain organs when brought into relation with poisons. M. Thoinot and M. Brouardel employed a common method which is very simple if somewhat rough and which consists in taking out the organ from a recently killed animal, triturating a definite quantity of it—namely three grammes, or in the case of the kidney two grammes—with a given dose of the poison to be tested, which poison is always used in the same strength. The mixture is then filtered under pressure in a sterilised compressor and the filtrate is then injected into guinea-pigs. The controls are injected with a dose of the poisonous solution which has been merely filtered. The dose of poison is calculated at so much per 100 grammes of the animal's body weight. The poisons employed were sulphate of strychnia, hydrochlorate of morphine, arsenious acid, and sulphate of atropine. The results of the experiments went to show that certain organs affect different poisons, either by inhibiting their action, or exalting their virulence, or by leaving it intact. Two of the tissues employed neutralised all the poisons experimented with, but in different proportions—firstly the liver, and secondly the kidney. This neutralising action was specially marked in the case of strychnia. Muscular tissue neutralised a fair proportion of strychnia and a less quantity of morphine and of atropine, while it exalted the virulence of arsenic. Pulmonary tissue arrested the action of atropine altogether, acted more feebly upon strychnia and morphine, and had no effect upon arsenic. Cerebral tissue neutralised strychnia and morphine, had no effect upon atropine, but greatly exalted the action of arsenic. Without seeking to explain the power of exaltation observed in certain cases M. Thoinot and M. Brouardel think that it may well be compared with that which M. J. Teissier of Lyons has recorded as existing in the liver for certain poisonous substances.

*Homœopathic Activity.*

A monument has just been erected in the cemetery of Père-la-Chaise over the remains of Hahnemann, which were brought for the purpose from Germany. The cost of the monument and of the transportation of the remains was defrayed by subscriptions from all parts of the world. The monument consists of a large block of red granite, on which stands a pedestal bearing a bronze bust of the founder of homœopathy and the titles of his works and the well-known formula, "Similia similibus curantur," are graven on the granite. About 40 persons, mostly Germans, were present at the unveiling ceremony. A Homœopathic Congress was held at about the same time and was officially recognised among the various Exhibition Congresses, a fact which the homœopaths consider as a decisive victory over the opposing forces of the orthodox medical men.

*A Tax for the Tuberculous.*

At the Congress of Hygiene Dr. Phicque, physician in charge of the sanatorium of Angicourt, proposed the establishment of an additional tax upon alcohol of which the profits should be applied to the expenses of the fight against tuberculosis. An additional penny (*décime*) to the present tax of 156 francs per hectolitre would bring in 25,000,000 francs per annum. The French duties are at present much lower than the American, 245 francs; the Dutch, 252 francs; and above all the British, 477 francs per hectolitre. The creation of this "tubercle duty" upon alcohol would, according to Dr. Phicque, be perfectly justifiable, for alcoholism is the principal cause of pulmonary phthisis. With the 25,000,000 francs which the duty would bring in sanatoria could be built and all the expenses, which are very high, of disinfecting unwholesome houses could be defrayed.

*Strike of Medical Students at Marseilles.*

There has recently been in progress at Marseilles a strike of a peculiar nature—that is to say, all the students, both resident and non-resident, in the hospitals. Frequently in Paris and other large towns students discontented with the chief of a hospital have threatened to give up looking after the patients until they should obtain satisfaction. In the face of the dissatisfaction manifested by the public towards this kind of strike, so contrary to the laws of humanity, they have never yet dared to carry it out to its bitter end. Now, however, the thing has actually occurred at Marseilles. The students of the hospital, who were angry with Dr. Isoard, demanded that he should be removed from his post and threatened to cease to give their service to the hospital unless that request were granted. The authorities of the hospital having refused this request the students carried out their threat and left the patients who were confided to their care without any medical attention. The authorities of the hospital managed to get the dressing done for a while by porters and nurses. Then they threatened the resident medical officers to dismiss them altogether unless they went back to work by a certain fixed date. The "strikers," however, continued in their attitude. Provision was then made for the patients to be looked after by the medical men in the town. This went on for 15 days, when the students finally gave in under the threat of having the term of study which they had already carried out annulled altogether. A general amnesty has been declared, which it is hoped will efface the recollections of these unfortunate days, the events of which do not give a very satisfactory idea of the manners and ways of thinking of the new generation of medical men.

August 21st.

## AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

*The Plague.*

THE epidemic of plague seems to be gradually declining in all the colonies, being still most prevalent in Sydney, though no cases have occurred there for a week, while several cases have occurred in Queensland, a very few in Western and South Australia, and only one in Victoria. Concerning the case in Victoria which ended fatally some doubt has been expressed and the authorities have been blamed for cremating the body without a post-mortem

examination. Preventive measures are still carried out with undiminished vigour, the cost of exterminating the disease in Sydney already amounting to £85,000. The Board of Health in Victoria has commissioned Dr. Cherry, lecturer on bacteriology at the Melbourne University, to lecture throughout the various centres in the colony on the subject of the plague and its prevention, and the municipalities are spending money in sanitary works and destruction of rats.

*Health of Sydney.*

The quarterly report of the medical officer to the Sydney Sewerage Board has just been issued. He stated that the mortality was higher than in the corresponding quarter of last year, especially from preventable disease, notably typhoid fever, the number being in 1899 306 and in 1900 533. The increase was attributed to neglect on the part of the municipal authorities. Owing to an omission in the Act the Board of Sewerage had not sufficient powers to deal with faulty sanitary systems, but had control only of the sewers. Faulty fittings and connexions and bad ventilation abounded, and in many cases drains poured their contents not into the sewers but into the soil. These things had been repeatedly pointed out by the medical officer to the board, but it was not till the plague came that the municipal authorities and individual householders were roused from their apathy and the public realised the extent of the filth of Sydney. According to the report of the city health officer, Mr. Gwynne-Hughes, who has just resigned, the epidemic of typhoid fever was declining. He stated in his report for May that a systematic house-to-house inspection had been carried on and a great many houses condemned.

*The Australian Natives Association.*

In all the Australian colonies an association exists called the Australian Natives Association, membership of which is restricted to native-born Australians. Its main or ostensible object is to forward the interests of the native-born and "mutually improve the minds of members by discussing subjects connected with the common weal." In New South Wales the association confined itself to this object, but in Victoria and South Australia the association is registered under the Friendly Societies Act as a benefit society, affording medical attendance, medicine, sick pay, &c., to members. In Victoria the association has flourished, having 17,500 members and assets of about £100,000. In New South Wales it has languished to the extent of barely existing. With a view of improving its position at a meeting held at the Sydney Town Hall on June 18th the following resolution was carried:—

That this meeting forms itself into an Australian Natives Association to be registered under the provisions of the Friendly Societies Act.

In Victoria the A.N.A., as it is called, is the most objectionable of all friendly societies from the point of view of the medical officers. It gives the least remuneration to its lodge surgeons and it admits the largest proportion of well-to-do members who join on the plea that they do not want the medical benefits but are joining a political organisation. Once members, however, they always take the fullest advantage of their privileges and are the most exacting of lodge patients. The comparison between the membership of the association in the two colonies and the decision of the New South Wales body to become a benefit society show very clearly the real reasons why members join.

*The Children's Hospital, Sydney.*

A deputation recently waited on the Colonial Secretary to ask the New South Wales Government to provide a site for a new hospital which it is proposed to build for sick children. It was pointed out that the present building at Glebe was utterly inadequate. The site asked for was near the Centennial Park and had been recommended by Dr. Manning as exceptionally suitable. Objection had been raised to granting the site on the ground that it was proposed to attach to the hospital a diphtheria ward, but that proposal was now practically abandoned. The Minister in reply said that he was quite in sympathy with the deputation. He was not sure that the Government could legally bestow the land, but if it were possible they could reckon on having the site.

*The Melbourne Hospital.*

Twelve months ago the committee of the Melbourne Hospital instituted a system of asking patients to contribute to the funds of the hospital according to their means. Every person applying for admission had to sign a declaration stating whether or not he was able to pay and what amount if able, and strict inquiries were made as to applicants' position. The secretary reports that the system has worked well. The greater number of patients are unable to pay anything, and in no case is a patient refused admission because of poverty or treated differently to those who contribute. Still, the funds have been augmented to the extent of nearly £3000 during the past year by donations from patients. The contributions have varied from a few shillings to 30*s.* per week. The special effort made to extinguish the debt on the hospital is progressing steadily if slowly and a total of £16,330 has been received, the amount of the debt being £17,500.

*A Dental Departure.*

A valuable ram, the property of a grazier in New South Wales, lost some front teeth and being unable to nibble satisfactorily was slowly dying from semi-starvation. The services of a dentist were secured and artificial teeth were inserted so successfully that the ram is thriving as well as ever.

*Intra-cranial Echinococcus.*

At the June meeting of the Medical Society of Victoria Mr. Frederick D. Bird read an interesting paper on Intra-cranial Echinococcus, a condition which is rare. Mr. Bird observes that the classification of intracranial hydatids is difficult, as different conditions may be associated together, and some cases apparently intra-cranial may have originated in the calvarium. In the case reported several cysts were aggregated in a cavity with a coarsely granular surface between the dura mater and the cerebral hemisphere, and he is of opinion that the original mother cyst enclosing these cysts had disappeared as the result of pressure. The symptoms are too indefinite to allow of a diagnosis as to whether the cyst is intra- or extra-cerebral. The case recorded was that of a lad, aged 18 years, who dated his symptoms from a fall. His head was very large, 24½ inches round, and on the left side was an irregular depression which at times became tense and filled up. Vomiting had been a prominent symptom, headache with misty vision and increasing mental dulness and slight epileptiform seizures were the other symptoms, which became suddenly worse, requiring operation urgently. The operation was simple—turning down the scalp, exposing a perforation in the skull, incising the dura mater, and removing the cysts. The cavity was filled with iodoform gauze and the scalp sutured over it. On recovering from the anæsthetic the patient had a series of violent general convulsions and the temperature rose to 104·6° F. After the third day it fell to normal. On the sixth day the scalp was incised and the gauze removed. For some time his right side remained paralysed. This symptom gradually improved, and seven weeks after operation he could walk and he eventually recovered completely.

July 8th.

# Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In August the following candidates passed in the subjects indicated:—

*Surgery.*—A. St. J. Bateman (Section II.), King's College Hospital; H. N. Horton (Section II.), Middlesex Hospital; E. R. Risien (Section I.) and E. F. Rose (Section II.), St. Bartholomew's Hospital; and W. C. Spooner (Sections I. and II.), Edinburgh.

*Medicine.*—W. A. C. Cox (Sections I. and II.), St. Mary's Hospital; F. R. Featherstone (Section II.), Guy's Hospital; J. C. Furness, Charing-cross Hospital; J. I. Halstead (Section I.), Manchester; A. H. L. Newstead, Cambridge and St. Mary's Hospital; E. F. Rose (Sections I. and II.), St. Bartholomew's Hospital; and A. Y. St. Leger (Sections I. and II.), Cambridge and St. Mary's Hospital.

*Forensic Medicine.*—W. A. C. Cox, St. Mary's Hospital; J. C. Furness, Charing-cross Hospital; J. I. Halstead, Manchester; A. H. L. Newstead, Cambridge and St. Mary's Hospital; E. F. Rose and M. J. Ryan, St. Bartholomew's Hospital; A. T. Spanton, Cambridge and St. George's Hospital; and A. Y. St. Leger, Cambridge and St. Mary's Hospital.

*Midwifery.*—R. R. P. S. Bowker, Middlesex Hospital; E. Osborne, Birmingham; E. F. Rose, St. Bartholomew's Hospital; and W. C. Spooner, Edinburgh.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—A. St. J. Bateman, R. R. P. S. Bowker, W. A. C. Cox, F. R. Featherstone, H. N. Horton, A. Y. St. Leger, A. H. L. Newstead, and E. F. Rose.

UNIVERSITY OF LONDON: BEDFORD COLLEGE FOR WOMEN.—The following students passed the recent Intermediate Examinations of the University of London. *Intermediate in Science.*—Honours: Zoology, second class, Z.

Scrutz: pass, first division, E. Canter, M. C. H. D. Skinner, I. Slater, L. M. Warwick, J. S. Young; second division, E. Cyriax, N. S. Helm. Exempted at preliminary scientific examination from examination in chemistry and physics, C. E. L. Masche. *Preliminary Scientific.*—Second division, V. A. Turkhud, S. C. E. Sommer, also R. Western of Bedford and Westfield Colleges, first division. Students should attend on Wednesday, Oct. 3rd, from 2 to 4, to interview the principal and lecturers. The courses in Arts and Science, Training Department, Hygiene Department, and Art School will open on Thursday, Oct. 4th, at 10 A.M.

MORTUARY FOR CARDIFF.—At the meeting of the Cardiff Borough Corporation held on August 13th it was decided to erect a mortuary at an estimated cost of £2000.

VACCINATION GRANT. — Mr. James Forster, M.B., C.M. Glasg., public vaccinator for the Conisbro' district of the Doncaster Union, has obtained the special grant for successful vaccination.

VACCINATION FEES.—At the meeting of the Bristol Board of Guardians held on August 17th it was decided to write to the Local Government Board expressing the view of the guardians that the minimum fees fixed in the Vaccination Order of 1898 for public vaccinators are too high, especially in urban districts.

THE SHORTHAND EXAMINATION FOR MEDICAL STUDENTS.—With reference to the shorthand examination announced by the Society of Medical Phonographers in THE LANCET of July 7th (page 65), the executive committee announces that unless a minimum total of 12 candidates send in their names to the examination secretary (Dr. E. B. Gray, Oxford) by Sept. 30th, the examination will not be held.

LUNACY FEES.—At the meeting of the Devonport Board of Guardians held on August 17th several of the guardians protested very strongly against what they considered an excessive charge for lunacy examinations. The discussion arose upon the account of a medical practitioner who had charged the usual fee of two guineas for the examination of two workhouse inmates. After a long and heated discussion a committee was appointed to approach the bench of magistrates with the view that on all future occasions the fee should be reduced to half a guinea per case.

DEPUTIES OF MEDICAL OFFICERS OF HEALTH.—At the meeting of the Stonehouse (Plymouth) District Council held on August 14th a recommendation of the sanitary committee that Mr. T. N. Leah be accepted to act as deputy during the temporary absence at any time of his father, the medical officer of health, was defeated by six votes to four. One of the speakers thought that if the suggestion was carried out the council was under an obligation to appoint Mr. Leah as medical officer if the office became vacant and he objected to the principle that because a father held an office his son must follow him.

VACCINATION STATISTICS.—At the meeting of the Barton Regis (Bristol) Board of Guardians held on August 17th it was reported that 193 births had been registered during the first six months of 1900 and that of these children 115 had been successfully vaccinated.—The Thornbury (Gloucestershire) Guardians report that out of 180 children whose births were registered during the first half year of 1900 there had been 156 successfully vaccinated.—The Wells (Somerset) Board of Guardians report 226 births in their district for the first six months of 1900 and 154 successful vaccinations.

## BOOKS, ETC., RECEIVED.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
The Principles and Practice of Hydro-therapy: a Guide to the Application of Water in Disease. By S. Baruch, M.D. Illustrated. 1900. Price 16s. net.
The Permanganate Treatment of Opium and Morphine Poisoning. By Dr. Wm. O. Moor, New York City. 1899. Price 1s. 6d. net.

BLUE LANGUAGE, 147, Avenue Malakoff, Paris.
Abridged Grammar of the Blue Language. Bolak. International Practical Language. English version. By Professor Fischer. 1900.

CHURCHILL, J. & A., Great Marlborough-street, London.
The Goulstonian Lectures on the Typhoid Bacillus and Typhoid Fever. 1900. By P. Horton-Smith, M.A., M.D. Cantab., F.R.C.P. Lond. 1900. Price 2s. 6d.
Lepra Bibliotheca Internationalis. Vol. I. Fasc. 3. Price 20s. per volume, of four fasciculi. 1900.

CORNISH, J. E., St. Ann's-square, Manchester.
Elements of Qualitative Analysis. By G. H. Bailey, D.Sc., Ph.D., and G. J. Fowler, M.Sc. Vict. 1900. Price 2s.

GLAISHER, H. J., Wigmore-street, London.
La Constipation Habituelle, son Traitement. Par G. Herschell, M.D. Traduit de la Seconde Edition Anglaise, par M. Cohendy. Préface de Albert Mathieu. 1900.

GOVERNMENT PRINTING OFFICE, Washington.
United States Bureau of Education: Experimental Study of Children, including Anthropometrical and Psycho-physical Measurements of Washington School Children, and a Bibliography. By A. MacDonald. 1899.

HOLMES, R. L., Dunlop-street, Glasgow.
The Pathogenesis and Treatment of Cancer without Operation. By R. Bell, M.D., F.F.P.S. 1900.

KIMPTON, H., High Holborn, London.
A Practical Treatise on Sexual Disorders of the Male and Female. By R. W. Taylor, A.M., M.D. Second Edition. Illustrated. 1900.
Progressive Medicine. By H. A. Hare, M.D., assisted by C. A. Holder, M.D. Vol. II. June, 1900.

LAYTON, CHARLES AND E., 61, Farringdon-street, London.
Handy Newspaper List. 1900. Price 6d.

PUTNAM'S, G. P., SONS, London.
Duality of Voice: An Outline of Original Research. By Emil Sutro. 1899.

PEREIRA BRAGA AND CO., Rio de Janeiro.
Etude sur la Lèpre au Brésil. 1900.

SCOTTISH MEDICAL AND SURGICAL JOURNAL, Edinburgh.
The Scottish Medical and Surgical Journal. Edited by Wm. Russell, M.D., F.R.C.P. Edin. Sub-editor, N. Walker, M.D., F.R.C.P. Edin. Vol. VI.—January to June. 1900.

SIMPKIN, MARSHALL, HAMILTON AND CO., London.
Love is in the Stomach not the Heart. By John M. Dagnall. 1900. Price 2s. 6d.

SPOTTISWOODE AND CO., New-street-square, London.
La Porte d'Entrée pour le Bacille de la Tuberculose. Par Dr. A. B. Taylor. 1900.

TAYLOR AND FRANCIS, Red Lion-court, Fleet-street, London.
Descriptive and Illustrated Catalogue of the Physiological Series of Comparative Anatomy contained in the Museum of the Royal College of Surgeons of England. Vol. I. Second edition. 1900.

UNWIN, T. F., Paternoster-square, London.
Over the Alps on a Bicycle. By Elizabeth R. Pennell. Illustrated. 1898. Price 1s.

Register of Experiments in Roentgen Rays. Price of books of 50 leaves, 6s., and 100 leaves, 7s. 6d. (Geo. Sadler. 207A, Borough High-street, London, S.E.). Anglo-Saxon Guide to the Paris Exhibition. 1900. With Map of Paris. Edited by B. Bernard (Boot and Son, Old Bailey, London). Price 1s. net.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADYE, W. J. A., M.R.C.S. Eng., L.S.A., has been appointed Medical Officer of Health for the Bradford-on-Avon Urban and Rural Districts, vice J. A. M. Thomson.

BLAND, M. H., M.B., M.S., M.D. Glasg., has been appointed Medical Officer of Health for the Guisborough District of the Guisborough Union, vice J. Merryweather.

CALDWELL, M., L.R.C.P. Edin., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Brotton District of the Guisborough Union, vice F. McGachen.

CONNOLLY, T. J., B.A. R.U.I., M.B., B.C. & B.A.O., has been appointed Medical Officer for the Kinvara District of the Gort Union.

COURTENAY, F. W. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Surgeon on board the Allan mail steamer *Numidian* for Canada.

FRAZER-TOOVEY, THOS. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., L.M. Rotunda, has been appointed House Surgeon to the Teignmouth Hospital, South Devon.

FORSYTH, C. E. P., M.B., Ch.B., has been appointed Assistant Medical Officer, Metropolitan Asylums Board, to the Eastern Hospital, The Grove, Homerton, N.E.

JAQUET, J. L., M.D., R.U.I., has been appointed Surgeon, M Division, Metropolitan Police, vice T. Evans, resigned.

KENNEDY, W. W., M.R.C.S. Eng., L.R.C.P. Lond., M.B. Lond., has been appointed Medical Officer of Health for the Beaconsfield District of the Amersham Union.

MANSON, R. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health of the Darlington District of the Darlington Union, vice R. T. Manson.

RALY L., M.D. Durh., M.R.C.S., L.S.A., has been re-appointed Medical Officer for the Second District of the Devizes Union.

RATTRAY, A. M., M.B., C.M. Edin., has been appointed Senior Assistant Medical Officer to the Newcastle City Asylum, Gosforth, vice D. Hunter, resigned.

RICHARDS, J., has been appointed Medical Officer of Health for the Conwil District of the Carmarthen Union.

SUTHERLAND, E. A., has been appointed by the board of management Honorary Physician to the City Orthopædic Hospital.

THORNEY, J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Skelton District of the Guisborough Union, vice S. Merryweather.

WATTS, E. C., M.D. Edin., C.M., has been appointed Medical Officer to the Guisborough Union Workhouse, vice J. Merryweather.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BRADFORD ROYAL INFIRMARY.—Junior House Surgeon, unmarried. Salary £50 per annum, with board and residence. Also Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRECON INFIRMARY, No. 6, Bulwark, Brecon, South Wales.—Resident House Surgeon, unmarried. Salary £100 per annum, with furnished apartments, board, attendance, fire, and gas.

BRIGHTON, HOVE, AND PRESTON DISPENSARY (WESTERN BRANCH AND COTTAGE HOSPITAL), 113, Queen's-road, Brighton.—House Surgeon. Salary £120 per annum, with board and residence.

CANCER PAVILION AND HOME, Manchester.—Surgical Officer.—Applications to Mr. E. W. Marshall, 38, Barton Arcade, Manchester.

CARLISLE DISPENSARY.—House Surgeon. Salary £150 per annum, with apartments (not board).

CHESTER GENERAL INFIRMARY.—Second Resident Medical Officer. Salary £80 per annum, with residence and maintenance in the House.

CITY OF SHEFFIELD.—Assistant Resident Medical Officer for the two City Hospitals for the Treatment of Cases of Infectious Diseases. Salary £150 per annum, with board, lodging, and attendance Applications to the Town Clerk, Town-hall, Sheffield.

CORNWALL COUNTY ASYLUM, Bodmin.—Junior Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, &c.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DONCASTER GENERAL INFIRMARY AND DISPENSARY.—In-door Dispenser and Assistant to the House Surgeon. Honorarium 20 guineas per annum, with board, lodging, and washing.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY, Dumfries.—House Surgeon. Salary £50 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—House Surgeon. Board, residence, &c., are provided and an honorarium of £25 will be granted at the completion of six months' approved service. Also Resident Medical Officer. Salary £80 per annum for the first year and £100 for the second, with board, residence, and laundry. Also Medical Officer for the Casualty Department. Salary at the rate of £100 per annum, and luncheon is provided at the Hospital.

GESTO HOSPITAL, Isle of Skye, N.B.—Resident Medical Officer. Salary £200 per annum, with free furnished house, garden, coals, light, and taxes. Apply to Mr. J. Simpson, Portree.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Junior House Surgeon for six months. Salary at the rate of £30 per annum, and board, lodging, and washing provided in the hospital. Also Anæsthetist for twelve months. Honorarium 10 guineas per annum. Applications to Mr. L. H. Glenton-Kerr, Secretary.

HUDDERSFIELD INFIRMARY.—Junior House Surgeon. Salary £60 per annum, with board, residence, and washing.

KENT AND CANTERBURY HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 a year, with board and lodging.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence and maintenance.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—House Physician, House Surgeon, Assistant House Physician, and Assistant House Surgeon. Appointments tenable for six months. The House Physician and House Surgeon receive a salary at the rate of £40 a year. The Assistant House Physician and Assistant House Surgeon receive a salary at the rate of £20 a year.

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per annum, with board and washing.

NORTH-WEST LONDON HOSPITAL, Kentish-town-road. — Assistant Resident Medical Officer. Salary £50 per annum, with board, residence, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon to take sole charge of the Hyson Green Branch. Salary £200 per annum, all found except board for himself, housekeeper, and servant. Also Assistant Resident Surgeon for the chief dispensary, unmarried. Salary £140 per annum, all found except board.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, lodging, and washing, &c.

ROCHDALE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, and washing.

ROTHERHAM HOSPITAL.—Senior House Surgeon. Salary £105 per annum, with board, lodging, and washing.

ST. PETER'S HOSPITAL FOR STONE, Henrietta-street, Covent-garden, W.C.—House Surgeon for six months. Salary at the rate of £100 per annum, with board, lodging, and washing.

STAMFORD-HILL AND STOKE NEWINGTON DISPENSARY, 189, High-street, Stoke Newington.—Assistant Resident Medical Officer. Salary £100 per annum, with board.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon. Salary at the rate of £24 per annum, with board, residence, and washing.

STOKE-UPON-TRENT UNION.—Resident Medical Officer. Salary £130 for for the first year, with an increase of £15 per annum to a maximum of £175, with board, washing, and furnished apartments at the hospital.

SURREY DISPENSARY, Great Dover-street, Southwark, S.E.—Resident Medical Officer. Salary £150 per annum, with furnished apartments, coals, gas, and attendance.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies for Certifying Surgeons under the Factory Acts at Ballachulish, in the county of Argyll; at Scarborough, in the county of York; for the Helensburgh District, comprising the civil parishes of Arrochar, Luss, Roseneath, and Row; and for the Watton District of Norfolk.

TOWNSHIP OF MANCHESTER.—Assistant Medical Officer. Salary £100, with furnished apartments, fire, light, washing, and attendance.

UNIVERSITY COLLEGE, CARDIFF.—Demonstrator and Assistant Lecturer in Anatomy and Demonstrator and Assistant Lecturer in Physiology. Salary in each case £120.

WEST AFRICAN RAILWAYS EXTENSIONS.—Qualified Medical Officers required to accompany an important Special Survey Party leaving London early in October. Salary £40 to £50 per month.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon. Salary £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and also House Surgeon for six months from Oct. 1st. Board and lodging provided.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

WEST RIDING ASYLUM, Wadsley near Sheffield.—Temporary Fifth Assistant Medical Officer for six months. Salary at the rate of £140 per annum, with apartments, board, and attendance.

WOOLWICH UNION.—Assistant Resident Medical Officer. Salary £120 per annum, rising £10 yearly to a maximum of £150, with apartments, rations, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

BRAINE-HARTNELL.—On August 18th, at Powick, Worcester, the wife of G. M. P. Braine-Hartnell, M.R.C.S. Eng., L.R.C.P. Lond., of a son.

CLARKE.—On August 13th, at Windsor House, Morley, the wife of Travers Clarke, L.R.C.P. Lond., M.R.C.S., of a daughter.

KIRBY.—On August 16th, at Sutton Court-road, Chiswick, the wife of W. Egmont Kirby, M.D. Brux., L.S.A., of a son.

MACKINTOSH.—On August 19th, at St. Ives, Platts-lane, Hampstead, the wife of John Stewart Mackintosh, M.R.C.S., L.R.C.P., of a son.

MOFFAT.—On August 16th, at Knockholt, Sevenoaks, the wife of R. U. Moffat, C.M.G., M.B., C.M., Principal Medical Officer, Uganda Protectorate, prematurely of a son, who survived his birth only one hour.

MUSSON.—On August 14th, at King-street, Clitheroe, the wife of A. W. Musson, M.B., B.C. Cantab., of a son.

PILCHER.—On August 14th, at Boston, Lincs., the wife of Cecil W. Pilcher, M.R.C.S., L.R.C.P. Lond., of a daughter.

ROBERTSON.—On August 14th, at Disraeli-gardens, East Putney, the wife of F. W. Robertson, M.A. Glasg., M.B. Lond., of a son.

ROWELL.—On August 20th, at York House, Huddersfield, the wife of J. G. Rowell, M.R.C.S., L.R.C.P. Lond., of a son.

RYLE.—On August 19th, at German-place, Brighton, the wife of R. J. Ryle, B.A. Oxon., M.A., M.D., M.R.C.S. Eng., of twins (girl and boy).

SYRETT.—On August 18th, at Naylands, Colchester, the wife of E. F. Syrett, M.D., of a daughter.

WAIT.—On the 11th inst., at Tynemouth, Northumberland, the wife of J. Alfred Wait, B.A., M.B. Cantab., of a daughter.

WILLIAMS.—On the 18th inst., at Rotorua, Harrow-on-the-Hill, the wife of Dr. A. H. Williams, of a son.

WILSON.—On August 17th, at Trafford House, Liscard, Cheshire, the wife of Andrew Robertson Wilson, M.A., M.B., C.M. Edin., of a son

## MARRIAGES.

LYTH—MAGUIRE.—On August 9th, at the Methodist Church, Knock, Belfast, Edgar Roe Lyth, M.B. Durh., M.R.C.S. Eng., of Shepherd's-bush, to Lucy, daughter of the late Rev. T. Maguire, of Belfast.

PRIOR—CLARKE.—On July 2nd, at Christ Church, Kapunda, Guy Percival Underdown Prior, L.R.C.P., M.R.C.S. Eng., eldest surviving son of the late Richard Henry Prior, M.D., J.P., St. Albans, to Anna Blanche, eldest daughter of — Clarke, Esq., of Kapunda, South Australia.

TURNER—DALBY.—On August 23rd, at St. Matthew's, Ealing, by the Rev. F. Dalby, Vicar of Holy Trinity, Gainsborough, cousin of the bride, assisted by the Rev. H. C. Douglas, vicar, Frank Douglas Turner, M.B., of New North-road, Huddersfield, to Louisa Caroline (Midgie), youngest daughter of Major Dalby, R.M.L.I., of Fregoe, Ealing.

## DEATHS.

ANDERSON.—On August 15th, at Buxton, John Anderson, M.D., LL.D., F.R.S. Lond. and Edin., of Harrington-gardens, S.W., aged 66.

ORTON.—On August 19th, 1900, at Beeston, Notts, John Orton, M.D., after a long and painful illness met with unflinching fortitude.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## THE ETHICS OF CONSULTING PRACTICE.

*To the Editors of* THE LANCET.

SIRS,—I venture to draw attention to the following circumstances and to ask if any action should be taken, because it seems to me that such incidents ought not to be passed over unnoticed. About the middle of January of this year I was called to a member of a large family I have attended during the past 14 years. The trouble was severe pain in the loins. Early in March as the pain was no better I suggested a consultation and, as is my custom, asked if any particular consultant was preferred. A name being given me I could take no exception to I at once wrote to the gentleman designated giving particulars of the case, and asked for an appointment. I heard from the consultant that he would write again after the examination of some specimen taken from the patient. I have not since heard from him or from my patient, who was taken into a nursing home for a time and then sent on a voyage. At the end of this the consultant visits my patient, ten miles or more from his house, and advises an operation in a nursing home near his house. The operation revealed the nature of the case and soon after, as was inevitable, the patient died. So far I did not feel particularly hurt. I thought that perhaps the consultant in his zeal to effect a cure had forgotten all about me, but when I saw that he attended the funeral of one he knew nothing of five months ago and whom he could not have seen on 30 different days I must conclude I have not received that treatment at his hands which I think I had a right to expect. This consultant is not old and not young; he holds hospital appointments and is a lecturer at one; he is well known, a member of learned societies, and the author of articles and a large work on a speciality. If I send my watch to the watchmaker and he keeps it I have my remedy and need not let him have the chain too, but in a case of this sort I know of no remedy and have a good chance of losing still more. I am, Sirs, yours faithfully,

August 20th, 1900. McD.

## HYSTERICAL JOURNALISM.

*To the Editors of* THE LANCET.

SIRS,—I am unwilling to think that any radical change is taking place in the English character, but certainly there have been many articles in English newspapers and even in the magazines and reviews during the past six or eight months which would justify such an opinion. I think there can be no doubt that hysterical journalism has taken root in England. It is a serious disease. The thirst for publicity, the crazy rush for the latest bulletin, careless whether it be fact or fiction, is a symptom of a general paralysis. I have always thought that if English newspapers were not conspicuous for enterprise they were cool-headed and reliable. Must this characteristic go? To my amazement I read in the *Times* which has just come obituary notices of members of our Legation in Peking. What proof have we that these men are dead? However melancholy the outlook may be, it appears to me to be very bad form to publish a man's obituary before reasonable proof of his death has been obtained.

I am, Sirs, yours faithfully,

Halifax, N.S., August 2nd, 1900. J. S.

## "A DISGUSTING THREAT."

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of August 18th, p. 560, I read what is termed a "disgusting threat." No terms can be too strong for the threat. Assuming that the statement of "Nemo" is correct and can be proved—as it would appear from his letter that it can be—the only course, apart from legal or criminal proceedings, is to apply to the General Medical Council and have the threatener's name struck off the roll of registered medical students. "Nemo" "does not wish to harm the fellow for the sake of his father and mother"; but for humanity's sake this unfortunate creature who proposes to create, or rather propagate, a most loathsome disease by methods which he has learned during his medical education should be debarred from ever entering the medical profession. Our aims are to combat disease and to save life. No man who has expressed the intention of communicating one of the most terrible diseases known should be allowed to enter our ranks. I am, Sirs, yours faithfully,

August 18th, 1900. M.D.

## "FRUIT SALT."

*To the Editors of* THE LANCET.

SIRS,—The attention of our clients, Messrs. J. C. Eno, Ltd., has been drawn to THE LANCET of the 11th inst. where, under the head of "Analytical Records" you give on page 405 a report on various preparations of Coombs Eureka Aerated Flour Co., Ltd., including their so-called "Fruit Salt." You are probably not aware that on Messrs. Coombs recently putting a saline preparation on the market under the title of "Fruit Salt," we at once drew their attention to the fact that they were thereby infringing our clients' rights and, after taking counsel's opinion on the matter, they on the 12th July ult., entered into an agreement with our clients whereby (*inter alia*) they agreed to discontinue the use of the title "Fruit Salt" for their preparation and to call in all outstanding stock and to destroy or alter all printed matter bearing that title. Although our clients' right to the exclusive use of the title "Fruit Salt" as applied to any medicinal preparation has been clearly established, the appearance in your widely-read journal of the notice in question is calculated to induce the belief that anyone may, to our clients' injury, put on the market saline preparations under that title, and we shall therefore feel obliged if you will insert in your next issue a paragraph to correct such an impression.

We are, Sirs, yours faithfully,

GARRARD, JAMES, AND WOLFE.

Suffolk-street, S.W., August 14th, 1900.

*** The specimen of Eureka Aerated Flour reported upon in our issue of August 11th was sent to us before the Coombs "Eureka" Aerated Flour Company, Limited, had received the letter of protest from Messrs. Garrard, James, and Wolfe, acting for Messrs. J. C. Eno, Limited.—ED. L.

## SUMMER DIARRHŒA.

THE following notice has been issued to all parents by Mr. C. M. Fegen, medical officer of health of the Croydon Rural District Council:—

During the hot months young children are especially liable to very severe attacks of diarrhœa which, in a very large number of cases, have a fatal ending.

It is probable that most cases arise from the use of tainted milk or other food and want of care.

Every article used for the storing or preparation of food must be kept perfectly clean, having been well scalded and then rinsed with clean cold water before use. All milk should be boiled as soon as taken in, and kept in a cool and well-ventilated place. No meat, fish, or cheese should be kept in the same place as the milk. No milk should be kept overnight.

If condensed milk is employed none but the best brands should be used and the tins kept in a cool, ventilated place while in use.

Fruit ought not to be given to infants, but if ripe and untainted it may be given to elder children.

Great care should be exercised in keeping the house, and especially the backyard, clean, and in not allowing waste vegetable matter or food to lie about rotting in the sun.

The w.c. should be well flushed down and the seat and pan kept thoroughly clean.

## KOPLIK'S SPOTS.

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of August 18th, on p. 481, there are two articles *re* "Measles." In each of these "Koplik's spots" are mentioned. What are these? I cannot find them described in Allbutt or Fagge. Please inform OLD MORBILLI.

August 20th, 1900.

*** Koplik's spots are eruptions on the buccal mucous membrane seen in measles. They appear one or two days before the skin eruption. At first they are discrete rose red spots with a minute bluish-white centre. Later they coalesce. There is an excellent illustration in Gould's Year-book of Medicine for 1900, p. 274.—ED. L.

## WANTED—A HOME.

*To the Editors of* THE LANCET.

SIRS,—Can any of your readers inform me of a medical man practising in Scotland—and preferably a small seaside place—who would be willing to receive into his house a paying guest? The guest in question is a lady between 50 and 60 years of age, and the terms offered are £1 15*s.* per week. Further details, &c., would be furnished by me to any likely one applying. I am, Sirs, yours faithfully,

J. ROSS MACMAHON.

49, Earl's-court-road, Kensington, W., August 17th, 1900.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (27th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (28th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College

(2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.).

**WEDNESDAY (29th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat 2 P.M.), Cancer (2 P.M.)

**THURSDAY (30th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.).

**FRIDAY (31st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.).

**SATURDAY (1st).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

### LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (27th).**—WEST LONDON POST GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Chest Casss.

**THURSDAY (30th).**—WEST LONDON POST-GRADUATE COURSE (West London Hospital, W.).—5 P.M. Dr. S. Taylor: The Diagnosis of Spinal Cord Cases.

## EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only*, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

### TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

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## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, August 23rd, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation Vacuo. | Maximum Temp Shade. | Min. Temp | Wet Bulb | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 17 | 29·96 | N.E. | ... | 117 | 84 | 63 | 63 | 64 | Overcast |
| " 18 | 29·95 | E. | ... | 117 | 88 | 63 | 68 | 72 | Hazy |
| " 19 | 30·00 | S.W. | ... | 120 | 82 | 61 | 63 | 70 | Fine |
| " 20 | 29·80 | N.W. | ... | 110 | 77 | 60 | 61 | 62 | Overcast |
| " 21 | 29·65 | S.W. | 0·02 | 117 | 75 | 61 | 62 | 64 | Cloudy |
| " 22 | 29·44 | S.W. | ... | 121 | 73 | 61 | 61 | 64 | Cloudy |
| " 23 | 29·60 | S.W. | 0·06 | 73 | 57 | 55 | 55 | 57 | Cloudy |

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# THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 1, 1900.*


## ADDRESS TO STUDENTS.

It is once more our pleasant office to welcome those who are entering on their medical studies and to congratulate them on their choice of a profession which by common consent ranks among the noblest and most useful. We have done this for many years, and in doing so it has been our duty more than once to point out that the medical life has its disappointing side, which must be weighed against its splendid opportunities for good work. There are times when this black side seems persistently turned towards the medical profession and the aspirants to our ranks, but none the less our implicit belief is that the life of the good medical man is a life the usefulness of which to his generation is unparalleled and the sweets of which have a rare savour of their own. No easy task lies before the student. At least five years must be passed in hard study before the diploma or degree which gives him legal authorisation to practise can be obtained, and even when he reaches the goal he must still look forward to hard work, long hours, and as a rule very insufficient remuneration. On the other hand, the scientific subjects which engage his study are of fascinating interest, while as long as a medical man lives he remains a student to be fascinated, and his faculties will find ample satisfaction in the relief of suffering, the improvement of the public health, and the exercise of unlimited opportunities for unostentatious benevolence.

Of the hundreds of students who will join the medical schools in October next, full of hope and ambition, only a certain number will reach the threshold of the promised land, and it is well to consider the usual causes of this falling out by the way. Ill health accounts for many students never attaining to a place on the Medical Register; distaste for work for not a few failures; and exhaustion of pecuniary means for others. The wastage from breakdown of health is so serious that we would impress upon those who intend to enter the profession, and upon their relatives, the importance of considering carefully beforehand whether the student is strong enough to endure the strain of long and laborious study; for the course of study taken even by the man who will be content with the most easily obtained diplomas is long and trying. The first three years will be mainly occupied by a course of scientific training. The subjects of chemistry, anatomy, physiology, pathology, and bacteriology which will engross his attention during this time are of the utmost importance as the only sure foundation for his future clinical work. More than this, the study of them trains the student in scientific methods of thought, and accustoms him to receive nothing as certainly true until it has been thoroughly tested. There is always a temptation to the student to become restless during this early stage. It is difficult for him to believe that these fundamental studies are essential to his later comprehension of purely medical subjects, and there is a tendency for him either to trifle with his work and get into desultory habits, or, what is nearly as bad for him, to neglect the topic in hand and to dabble in pursuits which will engage his attention later. There is also a much finer temptation which may speak in the highest terms for the student's individuality. One or other of the sciences ancillary to medicine may become so absorbing to him that he is diverted from the main object of his career and chooses to become a physicist or a chemist rather than a medical man. We have only one word of caution for such a student: Be sure of the reality of the call to pure science before adopting it. The chemist, the physicist, the minute anatomist, and the physiologist, whether general in their work or applying it specially to bacteriology, have all their integral part to play in the advancement of medicine. But unless their learning is of a high order they find it difficult to turn it to much worldly advantage. Before a student who has commenced his studies with the idea of entering the medical profession decides to adopt the life of the man of pure science he should take advice from his elders. And short of a student obeying what he believes and his friends believe to be a real bent for one of the ancillary sciences, he should begin as he means to go on. The lazy first-year's man tends to be an idle fourth-year's man; and the man who dabbles in medicine and surgery when he should be mastering anatomy and physiology is apt to be an ill-equipped and dilettante student when he is preparing for his final examinations.

The list of subjects to be mastered is now so long that it is only by concentration of attention to the business in hand that adequate proficiency can be gained. In fact, when the beginner sees the schedule of knowledge with which his examiners will expect him to be acquainted, he may at first be inclined to envy his predecessor of 50 or 75 years ago when the microscope was little used and subjects such as bacteriology were not yet dreamt of. In those days, except for university degrees and for the Membership of the Royal College of Physicians of London, the preliminary education of the student in general subjects was ignored. After an apprenticeship during which he might be taught little more than bleeding, bandaging, and the compounding of drugs, he proceeded to "walk the hospitals," and, if he would, to attend courses of lectures; and at the end of his course he had to face only a single examination, often of a perfunctory character. The better men, no doubt, worked loyally and thoroughly, but the mass of students led a rather idle life to the detriment of their future capacity for doing their duties and to the discredit of their class. There were great men among the leaders of medicine half a century ago, and they had in many schools a fine following, but the most ardent admirer of the bygone days can hardly wish to return to the system of medical education prevailing, say, at the accession of HER MAJESTY to the throne. The student of to-day has a very different career. He has a very large—perhaps too large—number of subjects to study, and his proficiency is rigidly tested by a series of examinations before he can obtain any legal qualification to practise. On the other hand, his advantages for study more than compensate him

for the severer course. His arduous work equips him more fully for practice and it is no disadvantage for young men to have their time well occupied. Medical schools are generally situated in large cities where the employment for idle hands that is proverbially supplied by a hard master is full and varied. And with regard to the aids at his disposal the modern student is incomparably better off than his predecessor. There is an abundance of excellent well-illustrated text-books; regular courses of lectures are conscientiously given by competent men; and the opportunities for practical work in well-lighted dissecting-rooms and expensively equipped laboratories, as well as for clinical work in the hospital wards and out-patient rooms, are as good as they well can be.

The course which each man should pursue will be marked out for him by his teachers. But one or two hints may be given. There is a delusion among students that the acquisition of book knowledge which will enable them to shine in passing their examinations brilliantly is the chief object at which they have to aim. Text-books must be mastered, it is true, and examinations have to be passed, but for actual practice there are qualities even more essential than academic distinction. Unless during his student days a man has acquired not only knowledge but judgment, tact, and knowledge of men he is but poorly armed for the fray. "The greatest clerks are not the wisest men." It is not uncommon to see men, who have made examinations rather than high professional capacity their aim, take a brilliant degree, only, when suddenly brought face to face with a world which they have ignored for years, to be outstripped in the race for professional success by others whose academic distinctions were moderate, but who had acquired more thorough practical knowledge. We are not decrying academic distinctions. But unless knowledge is supplemented by judgment it is of little use. As WILLIAM PENN wrote two centuries ago, "He that hath more knowledge than Judgment is made for another Man's use more than his own ..... There are some Men like Dictionaries; to be lookt into upon occasions, but have no Connection, and are little entertaining ..... A Wise Man makes what he learns his own, t'other shows he's but a Copy or a Collection at most." The snare for an enthusiastic student is a preconceived idea that the more he learns and reads the greater will be his stock of useful knowledge at the end of his course. This idea requires to be qualified. His mental food must not only be swallowed but digested and assimilated, and for the pabulum supplied by his teachers and his books to be of use to him for practical purposes more than mere ingestion is necessary. The acquisition of facts without a realisation of their bearing is a feat of memory, but not necessarily a high intellectual performance. In one of our asylums for idiots there was some years ago a man who knew by heart the whole of Gibbon's "Decline and Fall of the Roman Empire." If any sentence were read to him he could tell the next, but he was quite unable to give any intelligent idea of the meaning of what he glibly recited, or to show its connexion with other parts of the book. What the student has to aim at is thoroughly to understand the meaning of whatever he learns, and the relation of his newly-acquired knowledge to what has gone before. Both of these are essential, and in scientific matters can rarely be learned from books alone. Oral teaching, as in a good course of lectures or demonstrations, is of the greatest assistance, but cannot replace the practical testing by the student for himself of what he has been taught. For instance, let us take the study of anatomy. There are admirable text-books from which a man gifted with a good memory may learn accurately an enormous number of facts. From demonstrations on parts already dissected he may get highly technical knowledge, and if the relations of the various parts to one another are pointed out he can learn far more than books alone would teach him, and even be able to answer a stringent examination paper on the subject. But he will not make a good anatomist, and if his methods of study stop here he will not later make a good surgeon. He must be assiduous, by his own dissections, in proving to himself at first hand the truth of what he has read and heard, and so made the knowledge his own. Theoretical and practical work must supplement one another, and the student must continually endeavour to find out the bearing which new facts have on those already acquired. We have given this warning because it is not infrequent to find men who begin with much promise, full of enthusiasm, regular in attendance at classes, indefatigable at study, carrying off prize after prize, whose performances, when they come to the more practical clinical part of their course, are disappointing chiefly because they have not realised the importance of practical dissection and of laboratory work in the earlier years of their studies.

And now another caution. We are living in an age of specialisation, and there are some respects in which this is advantageous, but there is a great danger lest it should lead to narrowness of view, and during the career of a student there is no place for specialisation. Exactly the same course should be pursued whether he intends to become a hospital physician or surgeon, to enter the naval or military services, or, as is the case with the great majority, to earn his living in general practice. It is wiser for him not to make up his mind as to his exact future career until he has completed his course, but to apply himself energetically to get a thorough and general grasp of all the subjects in the curriculum, and this if only because he may be prevented by the force of circumstances from realising his intentions. He who has the widest knowledge of his profession is best fitted for specialisation later. OLIVE WENDELL HOLMES, parodying the proverb, described the ideal specialist as "Jack of all trades and master of *one*."

The dangers of over-devotion to book-work and of attempting to give rather exclusive attention to one subject or group of subjects beset the ardent and keen student; there are more serious risks for the idle and indifferent. Not uncommonly a student begins with the delusion that the early subjects, such as anatomy and physiology, are not required for medical practice and that he may take the first few years easily, having always a pious intention to reform his ways and to apply himself seriously to the study of medicine and surgery later. No more foolish idea could enter his head. Not only, as we have said, is an accurate knowledge of the ancillary subjects essential for properly learning medicine, surgery, and obstetrics, but there are

searching examinations in these subjects to be passed before the student can enter on clinical work. And worst of all, if he begins badly he will acquire habits of slipshod work which will most seriously handicap him in later years. In view of the long and difficult course of study that has to be undergone by the modern medical student it is evident that those who wish to have an idle or frivolous time should be warned beforehand, and should either correct their tastes or abandon their intention of studying medicine and prepare themselves for some other walk in life; and, since both medical study and, still more, medical practice involve great mental and physical strain, none should enter the ranks unless thoroughly sound in health. There have been many men, especially those with a tendency to phthisis, who might have led a healthy and useful life as, say, colonial farmers, who have succumbed to disease at the end of their course or in the early years of practice. While warning the weak against undertaking a task which is beyond their strength, we would also impress upon all students the importance of attending to their own health. Health is one of a medical man's greatest assets, ranking only next to honest knowledge of his profession. The atmosphere of dissecting-rooms, post-mortem rooms, and out-patient rooms, where the unwashed congregate, is always polluted. Part of the student's day will probably be spent sitting over books in lodgings which are not too airy, and the other part in the environment of the hospital or the medical school. These are facts that must be faced by the parents or guardians of medical students. During the early years of study for the medical profession those who are not robust or who have been unaccustomed to town life would often do well to live just out of the town. Many of the medical schools in the provinces as well as in London are conveniently near some large railway terminus, and any extra expense in travelling entailed by suburban residence is generally compensated for by cheapness in rent; but during the last two years of medical study it will be advantageous to the student to have quarters near the hospital, so that the greatest possible amount of time may be given to work in the wards and casualty rooms.

It is imperative that opportunities should be made for getting both fresh air and muscular exercise. All the medical schools in London, and many in the provinces and in Scotland and Ireland have attached to them football, cricket, and athletic clubs, and several have well-equipped gymnasia. The student should join these clubs on entering his school. At most schools there is an inclusive subscription, the various clubs having been amalgamated. By joining them a man not only improves his health, but he comes to know his fellow-students from other points of view than those presented during working hours. Besides, hospital athletics foster the *esprit de corps* which is so desirable in any community. Fencing, bicyling, and pedestrian tramps are excellent adjuncts to the maintenance of health. They are less social but they have their advantages. There is in some cases a risk of excessive devotion to athletics to the detriment of serious work, but this absorption in athletic pursuits will usually only be found among the votaries of the sports that are popular with the crowd. A certain amount of time set apart for exhilarating exercise is beneficial not only to health but to the quality of a man's brain work, and the medical student must remember this. Further, every student should have thorough holidays, and we strongly recommend students to see as much as they can of their own country during their holidays. Walking and cycling tours need not be expensive, and they are of great educational value. The practitioner frequently has to prescribe change of air, and a local knowledge of suitable resorts will be most useful to him. He may have opportunities to go abroad, when everything we are saying has a more forcible application; but if he is not so fortunate whilst in his student days as to see other countries, that must not stop him from seeing as much as possible of his own, where after all it is most probable his future lines will lie. And while on a holiday he should try to keep up his general reading and should see that he does not altogether neglect his social duties. The student may wonder how he is to find time to carry out all the advice which we give him, yet it is not only possible but need not end in the manufacture of a prig. It can only be done, however, by method and concentration of purpose. Time should be carefully planned out so as to have regular hours for professional reading and for recreation each week, and during the time of work the worker must learn to concentrate his whole mind on the purpose in hand. If he is keeping himself in health by sufficient air and exercise, he will be surprised to find how much can be done in a short time with attention thoroughly fixed on the particular subject. The great CHARLES DARWIN, one of the most prolific of workers, owing to impaired health was only able to devote a small number of hours each day to scientific work, but so closely and methodically did he work during those hours that quite apart from his epoch-making writings on natural selection he made at first hand scientific observations and records which would have occupied the whole working hours of several men less gifted with his power of methodical application.

When the student passes from the school to the wards he should endeavour to hold all minor appointments that are open to him, such as assistant demonstratorships and clinical clerkships and dresserships in the hospital, and when he has passed his final tests he should try to secure a resident post in some good hospital before entering on practice. The best posts, of course, such as those at the teaching hospitals, are few in number, and he may not be successful in obtaining one. They are now awarded not by favour but by careful selection, and the simple way to obtain them is to be the best man competing for them. In the teaching hospitals of London, and in some of the greater provincial institutions, these coveted posts are unpaid, but there are hospitals all over the country where a man may not only gain invaluable experience, but may make enough income at any rate to pay his expenses. Just now it is easier for the newly-qualified man to obtain a resident post than it has been for some years, for qualified assistants are receiving good pay and many young men are taking these berths instead of hospital appointments, but this is a state of things that will not last, and resident appointments have an untold value to the medical man. And after the student has held some resident post he will

do well, if he has the opportunity, to try to obtain an appointment on board ship that he may see something of foreign countries and increase his knowledge of men, but these appointments, which formerly were easily obtained, are now much sought after, and some of the best steamship companies expect their medical men to belong permanently to their service. When the student has become the medical man and enters on actual practice he will find, perhaps to his surprise, that a successful practitioner requires much besides thorough knowledge of his work. The practice of medicine is an art. In the old days it was based entirely on experience and tradition, to-day its foundations are deeper and wider; but although medical practice is increasingly scientific, it remains none the less an art, and unless a man has acquired judgment, tact, and power of influencing his fellow-men, failure may be in front of him, no matter how high the degree which he has taken. In view of this fact the more that young medical men and students see of men and manners the more will they be likely to be of service in their generation.

Every medical student will have heard something, even before he joins a medical school, of the necessity for great discretion with his tongue. He must not think that the quality of reticence should belong to the qualified man only. A student will not have advanced far with his work before he has opportunities for practising reticence. There is a morbid pruriency at the present time which leads many people to the discussion of medical details and this morbid tendency is fostered by the naturalist school of modern fiction. The student should learn to practise in all such matters such prudent reserve as he would observe with regard to illness among his own relatives, and he should study how to divert conversation from the discussion of technical professional subjects. One of the greatest charms of medical practice for him will later be the complete and unquestioning confidence with which patients entrust all details connected with themselves and their families to him. Only with the full knowledge thus given him will he be able to advise his patients wisely. He should strive from the very beginning of his medical life to deserve the deep and delicate trust that will later be reposed in him. If he is not as a student a retailer of the medical joke (often obscene) or the hospital gossip (often prurient) it will come much easier to him to keep his lips sealed when later in life he is the steward of sacred confidences.

We have entered into the difficulties which confront the medical student at the outset of his career not to discourage him but that he may be forearmed. For those who are prepared to work conscientiously and who realise that character as well as intellect are required for the successful practice of medicine there lies open a career which is likely to yield them the highest satisfaction. Most persons enter the medical profession as a way to make a living, but if that be the medical man's only aim he will find his life a barren one. There are not many fortunes made by the practice of medicine. Occasionally some physician or surgeon dies leaving great wealth. Paragraphs instantly appear describing this fortune as amassed by practice, when, as a rule, legacies or fortunate investments account for the greater portion. But the medical man who works hard may reckon to make a modest competence, though the early years are often years of struggle, and though there are factors now imported into general practice which weigh with cruel severity on some practitioners. We refer to the wide-spread abuse of hospitals and the sweating tactics of some of the medical aid associations, concerning which matters it would be well, we think, if the student were told something towards the end of his career. For then he would enter the medical life equipped with some practical professional knowledge and some desire to work with the body of his profession for its general good.

## THE STUDENTS' LIBRARY.

WE have for many years been in the habit of suggesting for the benefit of the medical student a list of books which he will find useful in the course of his professional career. This list was originally designed to be helpful to him in a choice of the treatises which he should read before he can hope to obtain a place on the Medical Register. Of late years the making of this list has become very difficult. Many new books have been written and a great general advancement in certain valuable qualities has been imparted into their writing. The English medical text-book of modern days has become as orderly as its French and German predecessors were wont to be, and an effort has been made all round towards perfect clearness even at the sacrifice of style. So that although we have of late years had written for us few—we might almost say no—text-books that can be compared for a moment from a purely literary standpoint with the works of SYDENHAM or Sir THOMAS WATSON as artistic achievements, we have also had few where the teaching was not founded upon the practical knowledge of the author and where the lessons which the author desired to convey have not been definite and intelligible. From these two things—the large supply of text-books and their excellent and authoritative nature—arises a great difficulty for anyone who should attempt to suggest to the student what should and what should not be the book he ought to buy. The reviewers in our columns have reported equally well upon two or three different text-books of surgery and two or three different text-books of medicine, and in the more special branches of professional knowledge it is even more difficult than when dealing with comprehensive treatises to say which book *par excellence* should be recommended to the student. Year by year we have found our list of recommended books growing larger and larger. Our knowledge that in many cases there was almost nothing to choose between works from the standpoint of their efficiency led us to include several written with the same purpose and scope rather than to exercise an opportunity of choice that would appear to have been taken invidiously. The list at length became unwieldy. The student could find in it all he would require, but we felt ourselves—and certain of our readers have not failed to point the fact out to us—that the scope of choice was too large to be of the first assistance. We have therefore lately adopted an entirely different plan. We have taken the examinations for the double diplomas of the Conjoint Board of the Royal College of Physicians of London and the Royal College of Surgeons of England as the type of the tests which every student works to pass. He may not do so much and he may do more: the above-mentioned qualification is a good representative one. The following are the text-books that are recommended by the consensus of opinion of a well-known group of London

teachers for the examinations of the London Conjoint qualification :—

FIRST EXAMINATION.

| *Subject.* | *Text-book.* |
|---|---|
| Chemistry ..... | LUFF'S *Chemistry;* Cassell, 7*s.* 6*d.* (new edition in September last).—This book was written with a view to this examination and contains exactly the right material. ATTFIELD'S *Chemistry* (Gurney and Jackson, 15*s.*) is also recommended. |
| Physics ..... | DANIELL'S *Physics;* Macmillan and Co., 4*s.* 6*d.*—ALDOUS'S *Physics;* Macmillan and Co., 7*s.* 6*d.*—The student will only require selections which should be made in accordance with the advice of his teachers. |
| Pharmacy ..... | HALE WHITE'S *Materia Medica;* J. & A. Churchill, 7*s.* 6*d.* |
| Biology ..... | P. CHALMERS MITCHELL'S *Outlines of Biology;* Methuen, 6*s.*—The book was written, we believe, with a view to this examination. It exactly fits it, but we strongly recommend the medical student of the present day to extend his biological reading, if only in a desultory manner, to the works of, among others, HUXLEY and BEALE. |

SECOND EXAMINATION.

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|---|---|
| Anatomy ..... | GRAY'S *Anatomy;* Longmans, 36*s.*—QUAIN'S *Anatomy;* Longmans, in many parts at different prices.—MORRIS'S *Anatomy;* J. & A. Churchill, 36*s.*—The first of these treatises is sufficient by itself, while the article in it upon osteology is unequalled. The books of QUAIN and MORRIS contain matter that is not essential for the examination under consideration, but all who aspire to the honour examinations must have and read them. |
| Physiology..... | HALLIBURTON'S *Kirkes' Physiology;* J. Murray, 14*s.*—The omission of FOSTER'S *Physiology* here may strike some as extraordinary. It is the best text-book in English and written in perfect literary style, but it does not supply the medical student with sufficiently cut-and-dried answers to questions which are sure to be set him at this examination. HALLIBURTON'S *Kirkes* is therefore the book to be recommended for the average student, but by all means let him enlarge his knowledge by reading FOSTER'S or STEWART'S book if he finds that he can swim in deeper water. — HALLIBURTON'S *Chemical Physiology;* Longmans, 28*s.*—SCHÄFER'S *Course of Practical Histology;* Smith and Elder, 7*s.* 6*d.*—SCHÄFER'S *Essentials of Histology;* Longmans, 8*s.*—These three books should be read to supplement HALLIBURTON'S *Kirkes' Physiology.* |

THIRD EXAMINATION.

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|---|---|
| Medicine ..... | OSLER'S *Principles and Practice of Medicine;* Young J. Pentland, 25*s.*—A clear and well-arranged book perfectly up to date. It has taken the place of that admirable book, BRISTOWE'S *Theory and Practice of Medicine*, which has now fallen a little behind the times.—TAYLOR'S *Manual of the Practice of Medicine;* J. & A. Churchill, 15*s.*—All students who can afford it should possess this book too. |
| Applied Anatomy | TREVES'S *Surgical Anatomy;* Cassell, 7*s.* 6*d.*—HOLDEN'S *Landmarks, Medical and Surgical* (J. & A. Churchill, 3*s.* 6*d.*), also thoroughly deserves the popularity it has so long enjoyed as a book on applied anatomy, while the supplementary volume on Surgical Anatomy in QUAIN'S *Anatomy* by THANE and GODLEE (Longmans, 6*s.* 6*d* ) is excellent. |
| Pathology ..... | GREEN'S *Pathology;* Renshaw, 17*s.*—LAZARUS-BARLOW'S *Pathology;* J. & A. Churchill, 21*s.*—BOWLBY'S *Surgical Pathology;* J. & A. Churchill, 10*s.* 6*d.* |
| Materia Medica... | MITCHELL BRUCE'S *Materia Medica;* Cassell, 7*s.* 6*d.* |
| Forensic Medicine | LUFF'S *Forensic Medicine;* Longmans, 24*s.*—AUBREY HUSBAND'S *Forensic Medicine;* Simpkin, 10*s.* 8*d.*—Both books fit the examination but we recommend the student also to read the larger treatises by TAYLOR and STEVENSON (J. & A. Churchill, 31*s.* 6*d.*) or DIXON MANN (Griffin, 21*s.*). Forensic medicine is interesting reading, so that a big book should have no terrors. |
| Public Health ... | PARKES'S *Hygiene;* Lewis, 10*s.* 6*d.*—A new and thoroughly revised edition is in the press and will be ready in October next. WHITELEGGE'S *Hygiene;* Cassell, 7*s.* 6*d.*—Each of these books is good and contains more than is required for the examination. |
| Surgery ..... | ROSE and CARLESS'S *Manual of Surgery;* Baillière, Tindall, and Cox, 21*s.*—This book contains all that is necessary for the examination, but a student with any ambition will supplement its reading by consulting one of the three more comprehensive treatises which follow. A new edition corrected up to date appears this month. He must also read JACOBSON'S *Operations of Surgery* (J. & A. Churchill, 34*s.*) or TREVES'S *Operative Surgery* (Cassell, 42*s.*).—ERICHSEN'S *Science and Art of Surgery* (Longmans, 48*s.*), TREVES'S *System of Surgery* (Cassell, 48*s* ), and TILLMAN'S *Surgery* (Kimpton, 63*s.*) must be consulted as books of reference, while every student will find SPENCER'S *Outlines of Practical Surgery* (Baillière, Tindall, and Cox, 12*s.* 6*d.*) of great help to him. |
| Midwifery ..... | GALABIN'S *Midwifery* (J. & A. Churchill, 15*s.*) or DAKIN'S *Midwifery* (Longmans, 18*s.*) is most exactly fitted for this examination. In Gynæcology we recommend LEWERS'S *Diseases of Women;* Lewis, 10*s.* 6*d.*—HERMAN'S *Diseases of Women* (Cassell, 25*s.*) and HERMAN'S *Difficult Labour* (Cassell, 12*s.* 6*d.*) should also be read. |

The student should also read a Text-book of Ophthalmic Surgery. SWANZY'S book (Lewis, 12*s.* 6*d.*) is suggested as containing all that he is required to know. He should also read MALCOLM MORRIS'S *Diseases of the Skin* (Cassell, 12*s.* 6*d.*).

This does not seem a very large library for a working man to read in a curriculum extending over five years, but if the books are read properly they will amply suffice. For they have to be thoroughly mastered and completely assimilated. All passages in them not perfectly clear at the first or even the tenth reading must be made so ultimately if there is to be no doubt about the results of an examination, and from the first word to the last of every book it must be treated as the handmaiden of practical work. Now it should indicate how to begin practical work, now it should explain practical processes, and now and most frequently it should form a *memoria technica* whereby practical lessons learned in the dissecting-room, the laboratory, or the ward can be recalled in a moment either for practical or examination purposes.

The uses that different students are able to make of books vary so much with their order of mind that no small selected

library can ever be the best possible library for all. To one man the elementary book may be well-nigh sufficient reading. He will be able to use it as the skeleton of his knowledge and will endow it with tissues and life from his personal observation, by practical courses in his school, by clinical work in the wards, and by thoughtful attendance at lectures. This is the student into whose work books do not largely enter. But inasmuch as it is easy to examine fairly and thoroughly upon book-work, while it is difficult to lay down proper standards and discover adequate tests for the appraisement of practical work, the result of examinations must more or less depend upon the ability of the student to answer somewhat in text-book language questions framed somewhat upon text-book lines. Therefore it will be well for the student whose practical order of mind enables him, as it were, to write his own text-book by grafting his practical work on to an elementary manual, to revise his knowledge before entering for an examination by the light of a first-class text-book. This is the best and most feasible way of combining books and practical and clinical work for the formation of a medical education. But it is not in the power of every student to obtain an education in this manner. Practical work is easier to some men than to others, and lectures mean more to some men than to others. The receptive man will benefit by teaching which only arouses opposition in the critical man. The reading of a large text-book by the critically-minded man—the man whose first impulse on hearing a fact is to doubt it or the deductions from it—may very often be the best way in which such a man can gain a knowledge of his subject. He gets an all-round look at it, and though he may not entirely understand everything that he reads he will obtain a general familiarity with the topic and see the fallacy of the objections which rise in his mind. The bald statements for which alone the small manual can find room arouse in him nothing but opposition, and he will be well advised to go straight to the big book where the explanations are included with the facts. But he *must* supplement his wider range of reading with as honest and as earnest a course of practical work as his less literary fellow-students. When confronted with examination he will find, as hundreds of the most promising students of medicine have found to their considerable discomfiture, that practical work is absolutely necessary, that without it book-work is as nothing, that even to pass in the written part of the examination (for which he feels so amply equipped) will be almost impossible unless his knowledge is fortified and made alive by some measure of practical experience; and, lastly, that no amount of book-work will ever enable him to answer questions by word of mouth.

The list of books given above as necessary to be read before the student can make certain of obtaining the diploma of the Conjoint Board will if absolutely mastered go very far to take him through any honour examination—especially if his practical work be good and if he have an orderly mind and a ready wit, so that he is at his best during his tests; but in certain directions the aspirant for the medical degree of the University of London and the Fellowship of the Royal College of Surgeons of England must read more advanced works. The degrees of other universities, especially those of Oxford and Cambridge, will also require from their candidates a larger range of reading, but in these it is chiefly for the final examination, the standard of which is (or is expected to be) higher than the standard of the pass examinations of the various corporations. In the case of London University the increased stringency of the tests is felt from the beginning, while the first examination for the Fellowship of the Royal College of Surgeons of England is one of the hardest and most uncertain examinations known to us. In making the suggestions which follow we premise in the student a complete knowledge of the simpler works.

For the Preliminary Scientific Examination of London University RIDEAL'S *Practical Organic Chemistry* (Lewis, 2*s*. 6*d*.), TILDEN'S *Inorganic Chemistry* (J. & A. Churchill, 10*s*.), REMSEN'S *Organic Chemistry* (Macmillan, 6*s*. 6*d*.), and BERNAYS' *Practical Chemistry* (J. & A. Churchill, 4*s*. 6*d*.) are recommended. DANIELL'S *Text-book of Physics* (Macmillan and Co., 21*s*.) should be supplemented by DESCHANEL'S well-known volumes and such books as CATCHPOOL'S *Sound* (Clive, 3*s*. 6*d*.), LOWSON'S *Botany* (Clive, 6*s*. 6*d*.), and WELLS and DAVIES'S *Zoology* (Clive, 6*s*. 6*d*.). Botanical reading should include SCOTT'S *Structural Botany* (Adam Black and Co., two vols., 3*s*. 6*d*. each). For the first M.B. of the University of London and for the first Fellowship of the Royal College of Surgeons of England MORRIS'S *Anatomy* (J. & A. Churchill, 36*s*.) is, on the whole, the best text-book, but the student should also read embryology by SCHÄFER and splanchnology by SCHÄFER and SYMINGTON in QUAIN'S *Anatomy* and revise his osteology from time to time by GRAY'S *Anatomy* and his practical work by CUNNINGHAM'S *Practical Anatomy* (two vols.; Young J. Pentland, 12*s*. 6*d*. each) or BRODIE'S *Dissections Illustrated* (Whittaker and Co., 42*s*.). For both these examinations STEWART'S *Physiology* (Baillière, Tindall, and Cox, 15*s*.) or FOSTER'S *Physiology* (Macmillan and Co., in four parts, 10*s*. 6*d*. each, and appendix, 7*s*. 6*d*.) should be read.

For the final medical examinations of the great universities no different text-books are absolutely required to those suggested for the final examination of the Conjoint Board, but the student's reading should be regularly supplemented by studying the valuable monographs in ALLBUTT'S *System of Medicine*, CASSELL'S *Year-book of Treatment*, the pages of the medical journals, and such works as POWELL'S *Diseases of the Lungs and Pleura* (Lewis, 18*s*.), GOWERS'S *Treatises on Neurology* (J. & A. Churchill, vol. i., 15*s*.; vol. ii., 20*s*.), and JUDSON BURY'S *Clinical Medicine* (Charles Griffin, 21*s*.). For the final surgical examination of the University of London (that for the degree of M.S.) and for the final F.R.C.S. the first thing for the candidate to remember absolutely is that his anatomical knowledge must be as perfect as it was at his previous tests. If it be taken for granted that the student has a thorough knowledge of such a text-book as that of ROSE and CARLESS, then the book to read is TILLMANN'S *System of Surgery* (Kimpton, 63*s*.). The book is thoroughly well written, comprehensive, and completely up to date, which can no longer be said of HOLMES'S *System* or even of ERICHSEN'S splendid work. *A Manual of Surgical Treatment* by W. WATSON CHEYNE and F. F. BURGHARD is being issued in parts at prices varying from 10*s*. to 14*s*. by Longmans. Three parts are published and a fourth is ready. This is a valuable book, sound, practical, and up-to-date. CASSELL'S *Year-book of Treatment* should also be read and such monographs as those by BLAND-SUTTON on *Tumours*, by TREVES on *Intestinal Obstruction*, by TUBBY on *Deformities*, by MORRIS on the *Surgery of the Kidney*, by WARING on *Operative Surgery*, and by MARSH on *Joints*.

We regretfully leave out of this list many old friends, but we have done so deliberately, not because we are otherwise than certain that everyone must derive much benefit from reading the works of Erichsen, Holmes, Playfair, and Bristowe, for example, but because in these days of an extended curriculum and frequent examinations it is of the first importance to the student to have his knowledge always on hand, clear, well-defined, and certain. A text-book that in details, especially in details of classification, has dropped behind might possibly muddle a student or betray him into error. By all means let him, when he has passed his examination, read these excellent books, but he had better wait until his days of probation are over before studying the evolution of medicine. We have also made no attempt whatever to indicate the best books to

employ in the more special branches of medical and surgical work. At the classes and clinical demonstrations dealing with these subjects, as in the laboratory, the professor or lecturer will tell his pupils what books he desires them to read and the particular book will depend upon the scope of his addresses and demonstration. In previous Students' Numbers of THE LANCET will be found an exhaustive list with critical comments of all the best text-books.

## SOME OF THE CHIEF APPOINTMENTS HELD BY MEDICAL MEN.

*Medical Officer to the Local Government Board.*—This appointment is in the hands of the President of the Local Government Board for the time being, and has hitherto been filled by the promotion of one of the two assistant medical officers of that Board.

*Medical Inspectors of the Local Government Board.*—These appointments also are made by the President of the Local Government Board. Qualification and experience in public health are taken into consideration.

*Medical Officers to Poor-law Districts.*—These appointments are made by the guardians of the union or parish in question, subject to the approval of the Local Government Board, which approval is primarily concerned with the medical and surgical qualifications of the persons appointed and the locality of their residences.

*District Medical Officers of Health.*—The appointments are made by the urban or rural district council in question subject to the sanction of the Local Government Board which sanction takes account of qualifications, salary, area of district, &c.

*County Medical Officers of Health.*—The appointments are made by the respective county councils, with whom the question in all its details absolutely rests.

*Lord Chancellor's Visitors in Lunacy.*—There are two Medical Visitors in Lunacy nominated by the Lord Chancellor. The appointments are usually bestowed on gentlemen who have distinguished themselves in psychological medicine.

*Prison Medical Service.*—The medical officers attached to the larger prisons are required to devote their whole time to their official duties. The service is a small one and vacancies do not often occur. Forms of application can be procured from the Secretary to the Prison Department at the Home Office. The salary commences at £250 per annum, with free quarters, or an allowance in lieu thereof.

*Medical Officers of the Mercantile Marine.*—The Merchant Shipping Act, 1894, directs (Section 209) that every foreign-going ship having 100 persons or upwards on board shall carry a duly qualified medical practitioner. Ship's medical officers, however, are more often appointed under the part of the same Act re'ative to "emigrant ships." For the purposes of the Act an emigrant ship is defined as one which carries more than 50 steerage passengers, and a steerage passenger is defined as one who is not a cabin passenger. Section 303 provides that a medical practitioner shall be carried on board an emigrant ship where the number of steerage passengers exceeds 50 and also where the number of persons on board (including cabin passengers, officers, and crew) exceeds 300. A medical practitioner shall not be considered to be duly authorised for the purposes of this Act unless (*a*) he is authorised by law to practise in some part of Her Majesty's dominions or in the case of a foreign ship in the country to which that ship belongs; and (*b*) his name has been notified to the emigration officer at the port of clearance, and has not been objected to by that officer; and (*c*) he is provided with proper surgical instruments to the satisfaction of that officer. If any person proceeds or attempts to proceed as medical practitioner in any emigrant ship without being duly authorised he shall be liable to a fine not exceeding £100. Surgeons in charge of passenger ships should keep a record of any sickness that occurs on the voyage, whether among saloon passengers, emigrants, or crew, and they are requested to report the same to the emigration officer at the end of the voyage. The remuneration for these appointments is extremely variable, ranging from a free passage to the port of destination to a salary of £10 a month during continuance in the service. The appointments are of course made by the various firms of shipowners and the applicants are sometimes numerous.

*Factory Surgeon.*—Under the Factory and Workshop Act certifying surgeons are appointed by the inspectors of factories. The duties are to certify as to the fitness for employment of children and young persons about to be engaged in factories and workshops and to investigate and report on accidents. There is a standard scale of fees for special cases and the following fees are allowed for investigating and reporting on accidents sanctioned by the Secretary of State. For the examinations and report on any accident which may not require the surgeon to travel a greater distance than one mile, 3*s*. For the examinations and report on any accident which may require the surgeon to travel a greater distance than one mile, and not more than two miles, 4*s*. For the examinations and report on any accident which may require the surgeon to travel a greater distance than two miles, and not more than three miles, 5*s*. Where any examination or report may require the surgeon to travel a greater distance than three miles a further sum of 6*d*. for each half mile that such distance may exceed three miles. In any intricate case, or when any peculiar circumstances arise either in making the inquiry or in framing the report, the inspectors may recommend a higher fee than those above stated, so that no fee exceeding 10*s*. be assigned for any one accident, and provided the reason for assigning such higher fee be stated by the inspector.

*Public Vaccinator.*—A candidate for this office must hold a certificate of proficiency in vaccination from an authorised person, and produce it to the guardians unless it was required for his degree or diploma. Except in the case of the medical officer of a workhouse, the contract must provide for a payment to the public vaccinator of not less than 1*s*. in respect of each child registered in the district from Sept. 1st, 1898, or resident there and afterwards registered or not registered at all, except where such child has before attaining the age of four months died, or been removed, or had small-pox, or been duly certified as vaccinated by another practitioner, or where a certificate of exemption has been obtained by the parent; a payment of not less than 5*s*. for each successful primary vaccination or revaccination at the home of the person vaccinated, and a payment of not less than 2*s*. 6*d*. for each successful primary vaccination of a person other than a child, or successful revaccination at the surgery or elsewhere than at such home. No payment is to be made for revaccination of a person less than 10 years old or who has been revaccinated within 10 years. These payments include postage unless otherwise agreed. In the case of a workhouse medical officer a fee of not less than 2*s*. 6*d*. is to be paid for each successful primary vaccination or revaccination. A visit must be paid to the home of the child on the request of its parent or custodian, or after notice from the vaccination officer, between 9 A.M. and 4 P.M., and 24 hours' notice must be given to the parent or custodian, unless otherwise arranged.

*Colonial Appointments.*—West Africa and the West Indies are the places where medical officers are chiefly required. As vacancies occur, which are not very frequent, the Colonial Office fill them in British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, British Honduras, Fiji, Sierra Leone, Gambia, Gold Coast, Lagos, Ceylon, Straits Settlements, Hong-Kong, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon and Jamaica local candidates usually receive the vacant appointments. West Indian appointments as a rule involve medical charge of a district, including the care of a hospital, poor-house, asylum, or other institution and free attendance on the aged and children. In West Africa the medical officers are also required to take charge of any hospital, public dispensary, lunatic asylum, or other Government institution at their respective stations, to supervise the sanitation of the district, to perform vaccination, and to give gratuitous attendance to all Government officials and, in most cases, the families of such officials also.

# SESSION 1900–1901.

## GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION OF THE UNITED KINGDOM.

*Registration of Medical Students.*—The following are the General Medical Council's Regulations in reference to the registration of students in medicine :—

Every medical student shall be registered in the manner prescribed by the General Medical Council. No medical student shall be registered until he has passed a preliminary examination as required by the General Medical Council and has produced evidence that he has commenced medical study. The commencement of the course of professional study recognised by any of the qualifying bodies shall not be reckoned as dating earlier than fifteen days before the date of registration. The registration of medical students shall be placed under the charge of the branch registrars. Every person desirous of being registered as a medical student shall apply to the branch registrar of the division of the United Kingdom in which he is residing ; and shall produce or forward to the branch registrar a certificate of his having passed a preliminary examination as required by the General Medical Council, and evidence that he has commenced medical study. The branch registrar shall enter the applicant's name and other particulars in the Students' Register, and shall give him a certificate of such registration. Each of the branch registrars shall supply to the several qualifying bodies, medical schools, and hospitals, in that part of the United Kingdom of which he is registrar, a sufficient number of blank forms of application for the registration of medical students. Applications for special exceptions are dealt with by the Students' Registration Committee, which reports all such cases to the Council.

The Preliminary Examination in General Education, required to be passed previously to registration as a medical student, shall be as follows :—

"1. English language, including grammar and composition. 2. Latin, including grammar, translation from specified authors, and translation of easy passages not taken from such authors. 3. Mathematics, comprising (*a*) arithmetic, (*b*) algebra, as far as simple equations, inclusive; (*c*) geometry, the subject matter of Euclid, Books I., II., and III., with easy deductions. 4. One of the following optional subjects: (*a*) Greek, (*b*) French, (*c*) German, (*d*) Italian, (*e*) any other modern language."

In many cases the Council will not accept certificates of pass in Preliminary Examination in General Education unless the whole of the subjects included in the Preliminary Examination required by the Council for Registration of Students of Medicine have been *passed at the same time*.

*Professional Education.*—The course of professional study after registration shall occupy at least five years. The Final examination in Medicine, Surgery, and Midwifery must not be passed before the close of the fifth academic year of medical study.

The following is a list of Examining Bodies whose examinations in general education are recognised by the General Medical Council as qualifying for registration as a medical or dental student the applicant producing satisfactory evidence that he has passed them :—

I.—UNIVERSITIES IN THE UNITED KINGDOM.

*University of Oxford.*—Junior Local Examinations. Senior Local Examinations. Responsions. Moderations. Final Examination for a degree in Arts.

*University of Cambridge.*—Junior Local Examinations. Senior Local Examinations. Higher Local Examinations. Previous Examination. General Examination. Final Examination for a degree in Arts.

*University of Durham.*—Examination for Certificate of Proficiency. Preliminary Examination in Arts for Graduation in Medicine and Science. Final Examination for a degree in Arts.

*University of London.*—Matriculation Examination. Final Examination for a degree in Arts or Science.

*Victoria University.*—Preliminary Examination. Entrance Examination in Arts. Final Examination for a degree in Arts or Science.

*University of Birmingham.*—Matriculation Examination.

*University of Wales.*—Matriculation Examination. Final Examination for a degree in Arts or Science.

*University of Edinburgh.*—Local Examinations (Senior and Junior). Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science.

*University of Aberdeen.*—Local Examinations (Senior and Junior). Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science.

*University of Glasgow.* — Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science.

*University of St. Andrews.*—Preliminary Examination for Graduation in Arts or Science or Medicine and Surgery. Final Examination for a degree in Arts or Science or for the diploma of L.L.A.

*University of Dublin.* — Public Entrance Examination. Examination for the first, second, third, or fourth year in Arts. Final Examination for a degree in Arts.

*Royal University of Ireland.*—Matriculation Examination. Final Examination for a degree in Arts or Science.

*Oxford and Cambridge Schools Examination Board.*—Lower certificate (to include all the required subjects at one time). Higher certificate (to include the required subjects).

II.—MEDICAL LICENSING BODIES.

*Royal Colleges of Physicians and Surgeons in Ireland.*—Preliminary Examination.[1]

III.—EDUCATIONAL BODIES OTHER THAN UNIVERSITIES.

*College of Preceptors.*—Examination for a First Class Certificate.

*Intermediate Education Board of Ireland.*—Junior or Middle Grade Examination ; Senior Grade Examination.

*Educational Institute of Scotland.* — Preliminary Medical Examination.

*Scotch Education Department.* — Leaving Certificates in Lower and Higher Grades and in Honours.

*Central Welsh Board.*—Senior Certificate Examination.

IV. — INDIAN, COLONIAL, AND FOREIGN UNIVERSITIES AND COLLEGES.

The Certificates from Indian, Colonial, and Foreign Universities and Colleges must contain evidence that the Examination has been conducted by or under the authority of the Body granting it, must include all the subjects required by the General Medical Council, and must state that all the subjects of Examination have been passed in at one time; copies of the form of the required Certificate are supplied by the Registrar of the Council for the purpose. In the case of Natives of India or other Oriental countries whose vernacular is other than English an Examination in a Classic Oriental Language may be accepted instead of an Examination in Latin.

H. E. Allen, LL.B., Registrar of the General Council and of the Branch Council for England, 299, Oxford-street, London, W.—James Robertson, Registrar of the Branch Council for Scotland, 48, George-square, Edinburgh.—S. W. Wilson. L.R.C.P. Irel., Registrar of the Branch Council for Ireland, 35, Dawson-street, Dublin.

## REGULATIONS OF THE MEDICAL EXAMINING BODIES IN THE UNITED KINGDOM.

### UNIVERSITY OF OXFORD.

THERE are two degrees in Medicine, B.M. and D.M., and two degrees in Surgery, B.Ch. and M.Ch.

The B.M. and B.Ch. degrees are granted to those members of the University who have passed the Second Examination. Graduates in Arts (B.A. or M.A.) are alone eligible for these two degrees. In order to obtain the degrees of B.M. and B.Ch. the following examinations must be passed :—1. Preliminary subjects : Mechanics and Physics, Chemistry, Animal Morphology and Botany. 2. Professional. (*a*) First Examination : Subjects — Organic Chemistry, unless the candidate has obtained a first or second class in Chemistry in the Natural Science School ; Human Physiology unless he has obtained a first or second class in Animal Physiology in the Natural Science School ; Human Anatomy, and Materia Medica with Pharmacy. (*b*) Second Examination : Subjects — Medicine, Surgery, Midwifery, Pathology, Forensic Medicine with Hygiene. The approximate dates of the examinations are as follows :—Preliminaries—Mechanics, Physics and Chemistry, December and

[1] The Council has recommended that this examination be discontinued.

June; Animal Morphology, December and March; Botany, March and June; Professional (First and Second B.M.) June and December.

The degree of D.M. is granted to Bachelors of Medicine of the University—(1) who took the degree of B.M. previously to the end of Trinity Term, 1886, provided they have spent three years in the practice of Medicine after taking that degree, and have composed a dissertation on some medical subject approved by the Regius Professor of Medicine, before whom it must be read in public; (2) who took the degree of B.M. subsequently to the end of Trinity Term, 1886, provided they have entered their thirty-ninth term and have composed on some medical subject a dissertation which is approved by the professors in the Faculty of Medicine and examiners for the degree of B.M. whose subject is dealt with. A book published within two years of the candidate's application for the degree may be substituted for a dissertation. The degree of M.Ch. is granted to Bachelors of Surgery of the University who have entered their twenty-seventh term, who are members of the surgical staff of a recognised hospital, or have acted as Dresser or House Surgeon in such a hospital for six months, and who have passed an examination in Surgery, Surgical Anatomy, and Surgical Operations. This examination is held annually, in June, at the end of the Second B.M. Examination.

The First Examination for the degrees of B.M. and B.Ch. may be passed as soon as the Preliminary Scientific Examinations have been completed. The subjects of this examination may be presented separately or in any combination or in any order, provided Anatomy and Physiology be passed together.

The Second Examination may be passed after the completion of the first, but Pathology may be professed before, with, or after the remaining subjects. Before admission to the Second Examination candidates must present Certificates of instruction in Infectious and Mental Diseases, and of attendance on Labours, and of proficiency in the practice of Vaccination.

*Scholarships, &c.*—Scholarships in some branch of Natural Science (Chemistry, Physics, Biology) of the average value of £80 per annum, tenable for four years and renewable under certain conditions for a fifth year, as well as Exhibitions of a less annual value, are awarded after competitive examination every year by some of the Colleges. Notices of vacancy, &c., are published in the *University Gazette*. In February there is competed for annually by those who, having obtained a first-class in any school (Moderations or final), or a Scholarship or Prize open to general competition in the University, have passed all the examinations for the degree of B.M. one Radcliffe Travelling Fellowship. It is tenable for three years and is of the annual value of £200. The examination is partly scientific, partly medical. The holder must travel abroad for the purpose of medical study. A Rolleston Memorial Prize is awarded once in two years to members of the Universities of Oxford and Cambridge of not more than ten years' standing for an original research in some Biological subject including Physiology or Pathology.

More detailed information may be obtained from the University Calendar; from the Examination Statutes, 1894, which contain the official schedules of the several subjects of examination in both Arts and Medicine; from the Student's Handbook to the University, published by the Clarendon Press; from the Regius Professor of Medicine; and from the Professors in the several departments of medical science.

The Lecturers for the various subjects are as follows:—Regius Professor of Medicine: Sir J. S. Burdon-Sanderson, D.M. Pathological Histology and Practical Bacteriology: The Lecturer in Pathology, J. Ritchie, D.M. Edin. Professor of Human Anatomy: A. Thomson, M.A. Waynflete Professor of Physiology: F. Gotch, M.A. University Lecturer on Physiology: J. S. Haldane, M.A. Practical Physiology and Histology: G. Mann, D.M. Edin. Physiological Chemistry: Walter Ramsden, M.A. Lichfield Lecturer in Clinical Medicine: W. Collier, M.A., D.M. Camb. Lichfield Lecturer in Clinical Surgery: Alfred Wiokfield, F.R.C.S. Eng. Organic Chemistry in Relation to Medicine, &c., followed by Practical Work: Aldrichian Demonstrator, W. W. Fisher, M.A., and J. E. Marsh, M.A. Lecturer in Materia Medica and Pharmacology: W. J. Smith Jerome, B.M. Lond. Linacre Professor of Comparative Anatomy, W. F. R. Weldon, M.A. Elementary Animal Morphology (Practical): the Aldrichian Demonstrator, E. Goodrich, M.A., and assistants. Sherardian Professor of Botany: S. H. Vines, M.A. Waynflete Professor of Chemistry: W. Odling, M.A. Lees Reader in Chemistry: A. G. Vernon Harcourt, M.A. Laboratory Instruction: W. W. Fisher, M.A., J. Watts, M.A., V. H. Veley, M.A., and J. E. Marsh, M.A. Professor of Experimental Philosophy: R. B. Clifton, M.A. Instruction in Practical Physics: R. B. Clifton, M.A., J. Walker, M.A., and J. C. Alsop, B.A. Elementary Heat and Light: Lees Reader in Physics, R. E. Baynes, M.A. Elementary Mechanics: F. J. Smith, M.A.

## UNIVERSITY OF CAMBRIDGE.

The student must enter at one of the Colleges, or as a non-collegiate student, and keep nine terms by residence in the University. He must pass the Previous Examination in Classics, Mathematics, &c., which may, and should if possible, be done before coming into residence in October, or he may obtain exemption through the Oxford and Cambridge Schools Examination Board or the Cambridge Senior Local Examinations. He may then devote himself to medical study in the University, attending the hospital and the medical lectures, dissecting, &c. Or he may, as nearly all students now do, proceed to take a degree in Arts, either continuing mathematical and classical study and passing the ordinary examinations for B.A., or going out in one of the Honour Triposes. The Natural Sciences Tripos is the most appropriate, as some of the subjects are practically the same as those for the first and second M.B. examinations.

For the degree of *Bachelor of Medicine (M.B.)* five years of medical study are required. This time may be spent in Cambridge or at one of the recognised Schools of Medicine. The first three or four years are usually spent in Cambridge, the student remaining in the University till he has passed, say, the examination for the Natural Sciences Tripos and the first and second examinations for M.B. Cambridge being now a complete School of Medicine, all the requisite lectures and hospital practice may be attended here, and many students remain to attend lectures and hospital practice until they have passed the first part of the third examination for M.B. The supply of subjects for Dissection is abundant and the laboratories for Pathology, Bacteriology, and Pharmacology are well equipped. Addenbrooke's Hospital provides for the necessary clinical training.

There are three examinations for M.B. The *first* includes Chemistry and other branches of Physics, and Elementary Biology. These parts may be taken together or separately. The *second* includes Human Anatomy and Physiology, and Pharmaceutical Chemistry. These may be taken together or separately. The *third* may also be taken in two parts—viz., (1) Principles and Practice of Surgery (with Operative and Clinical Surgery) and Midwifery and Diseases of Women; and (2) Pathology, Principles and Practice of Medicine, including Pharmacology and Therapeutics, Elements of Hygiene, Medical Jurisprudence and Mental Diseases. The examinations are partly in writing, partly oral, and partly practical, in the hospital, in the dissecting-room, and in the laboratories. An Act has then to be kept in the Public Schools, by the candidate reading an original dissertation composed by himself on some subject approved by the Regius Professor of Physic.

As Operative and Clinical Surgery now form parts of the third M.B. examination candidates who have passed both parts of that examination are admitted to the registrable degree of *Bachelor of Surgery (B.C.)* without separate examination and without keeping an Act.

The degree of *Doctor of Medicine* may be taken three years after that of M.B. or four years after that of M.A. An Act has to be kept, consisting of an original Thesis sustained in the Public Schools, with *viva-voce* examination; and an extempore Essay has to be written on some subject relating to Physiology, Pathology, the Practice of Medicine, or State Medicine.

For the degree of *Master of Surgery (M.C.)* the candidate must have passed all the examinations for B.C., or if he is an M.A. have obtained some other registrable qualification in surgery. He is required either (1) to pass an examination in Surgical Anatomy and Surgical Operations, Pathology, and the Principles and Practice of Surgery, and to write an extempore Essay on a Surgical Subject; or (2) to submit to the Medical Board original contributions to the advancement of the Science or Art of Surgery. Before he can be admitted to the examination two years at least must have elapsed from

the time when he completed all required for the degree of B.C. Before submitting original contributions he must have been qualified at least three years.

An abstract of the Regulations and Schedules of the range of the examinations in Chemistry, Physics, Biology, and Pharmaceutical Chemistry may be obtained upon sending a stamped directed envelope to the Registrary, Cambridge. Full information is contained in the *Cambridge University Calendar*.

## UNIVERSITY OF LONDON.

*The Matriculation Examination.*—Candidates for any degree in this University must have passed the Matriculation Examination. No exemption either from Matriculation or from subsequent examinations is allowed on account of degrees obtained at other Universities or of examinations of other examining bodies that may have been passed. The examinations take place twice in each year—on the second Monday in January and the second Monday in June; and may be held not only at the University of London, but also, under special arrangement, in other parts of the United Kingdom or in the colonies. Every candidate must, on or before April 25th for the June examination, and on or before Nov. 25th for the January examination, apply to the Registrar for a form of entry, which must be returned on or before May 1st or Dec. 1st respectively, accompanied by a certificate showing that the candidate has completed his sixteenth year and by his fee for the examination. A certificate from the Registrar-General in London or from the superintendent registrar of the district, or a certified copy of the baptismal register, is required in every case in which it can possibly be obtained. In other cases a declaration of the candidate's age, made before a magistrate by his parent or guardian, or by the candidate, if of full age, will be accepted. As candidates cannot be admitted after the list is closed, any candidate who may not have received a form of entry within a week after applying for it should communicate immediately with the Registrar, stating the exact date of his application and the place where it was posted. Every candidate must pay a fee of £2, and if he withdraws his name, or fails to present himself at the examination, or fails to pass it, the fee shall not be returned to him, but he shall be allowed to enter for any subsequent matriculation examination upon payment at every such entry of an additional fee of £1, provided that he comply with the other regulations. Candidates must show a competent knowledge of: 1. Latin. 2. English Language, History to the end of the seventeenth century, with the Geography relating thereto. 3. Mathematics (Elementary). 4. General Elementary Science. 5. Any one of the following languages or sciences: Greek, French, German, Sanskrit, Arabic, Elementary Mechanics, Elementary Chemistry, Elementary Sound, Heat, and Light, Elementary Magnetism and Electricity, and Elementary Botany. (No credit will be given for more than one of these subjects, and candidates desiring to be examined in Sanskrit or Arabic must give two months' notice to the Registrar. The examination in Botany is only held in the United Kingdom. Candidates in any one of the optional Branches of Science will find it an advantage to have obtained some elementary instruction in the practical use of apparatus.) A pass certificate signed by the Registrar is delivered to each successful candidate after the report of the examiners shall have been approved by the Senate. The first six candidates in the Honours Division, of not more than twenty years of age at the commencement of the examination, shall respectively receive an exhibition or a prize. Any candidate obtaining a place in the Honours Division at the matriculation examination in January shall be admissible to the intermediate examination either in Arts or in Science in the following July.

*Provincial Examinations for Matriculation.*—These examinations are appointed by the Senate from time to time upon the application of any city, institution, or college desiring to be named as a local centre for one or more examinations, and are carried on simultaneously with the examinations in London under the supervision of sub-examiners also appointed by the Senate. Candidates wishing to be examined at any provincial centre must give notice upon their forms of entry to the Registrar of the University, who will then make all necessary arrangements. Besides the University fee, a fee usually varying from £1 to £2 is charged by the local authorities, and must be paid *at the local centre* immediately before the commencement of the several examinations. The answers of the candidates at the provincial examinations are reviewed by the examiners at the same time as the answers of the candidates examined in London, and a list of the candidates who have passed at each provincial examination is published, at the time fixed by the regulations, at the place where such examination has been held.

*Preliminary Scientific Examination.*—Professional studies pursued before the whole of this examination has been passed will not count towards the course required for the M.B. degree. Candidates must have passed the matriculation examination. The examination takes place twice in each year, once for Pass and Honours, commencing on the second Monday in July, and once for Pass candidates only, commencing on the third Monday in January. Every candidate must apply by post-card to the Registrar for a form of entry on or before May 24th for the July examination, or on or before Dec. 15th for the January examination, which must be returned on or before June 1st and Dec. 22nd respectively, accompanied by the candidate's fee of £5. The subjects of the Preliminary Scientific Examination are divided into two sections: (1) Chemistry and Physics, and (2) General Biology. Chemistry includes a written examination in Chemistry and a practical examination in Qualitative and Simple Volumetric Analysis. Physics implies a knowledge of acoustics, heat, magnetism, electricity, and optics. General Biology comprises a knowledge of the elements of zoological (vertebrate or invertebrate) and botanical morphology, physiology, and embryology. Candidates shall be allowed to enter for the whole examination or for either section. Candidates who present themselves for the two sections together shall be credited with either section in which they may have passed, although they may have failed to pass in the other, but no such candidate shall be placed in the Honours List. Candidates must bear in mind that the standard of attainment for the Honours examination is much higher than that for the Pass examination; and they should therefore exercise due caution in making their choice, to which they will be required to adhere. Candidates for Honours in Botany and Zoology must take the Pass examination in General Biology; in other respects no candidate may take both the Pass and the Honours papers in the same subject. The fee of £5 covers the whole of the examination, whether taken altogether or in sections.

*Provincial Examinations for the Preliminary Scientific Examination.*—The pass examination (except the practical examinations) may be held not only at the University of London but also under special arrangements in other parts of the United Kingdom. All Honours papers, some of which under former arrangements used to be given out at the provincial centres, must now be taken only at the University of London.

*Bachelor of Medicine.*—Every candidate for the degree of Bachelor of Medicine will be required—1. To have passed the Matriculation Examination in this University not less than five years previously. 2. To have passed the Preliminary Scientific Examination not less than four years previously. 3. To have been engaged in his professional studies during five years subsequent to matriculation and four years subsequent to passing the Preliminary Scientific Examination at one or more of the medical institutions or schools recognised by this University, one year at least of the four being spent in one or more of the recognised institutions or schools in the United Kingdom. 4. To pass two examinations in Medicine.

*Intermediate Examination.*—The Intermediate Examination in Medicine takes place twice in each year—once for Pass and Honours, commencing on the first Monday in July, and once for Pass candidates only, commencing on the third Monday in January. The subjects of the examination are Anatomy, Physiology and Histology. Organic Chemistry, Materia Medica, and Pharmaceutical Chemistry. The standard of attainment required for Honours is much higher than for a Pass. No candidate shall be admitted to this examination unless he have passed the Preliminary Scientific Examination at least two years previously and have produced certificates to the following effect:—1. Of having completed his nineteenth year. 2. Of having, subsequently to having passed the Preliminary Scientific Examination, been a student during two years at one or more of the medical institutions or schools recognised by this University, and of having attended a course of lectures on each of three of the subjects in the following list: Descriptive and Surgical Anatomy, Physiology and Histology,

Pathological Anatomy, Materia Medica and Pharmacy, General Pathology, General Therapeutics, Forensic Medicine, Hygiene, Obstetric Medicine and Diseases Peculiar to Women and Infants, Surgery, Medicine. 3. Of having, subsequently to having passed the Preliminary Scientific Examination, dissected during two sessions. 4. Of having, subsequently to having passed the Preliminary Scientific Examination, attended a course of Practical Chemistry, comprehending practical exercises in conducting the more important processes of general and pharmaceutical chemistry, in applying tests for discovering the adulteration of articles of the Materia Medica and the presence and nature of poisons, and in the examination of mineral waters, animal secretions, urinary deposits, calculi, &c. 5. Of having attended to Practical Pharmacy and of having acquired a practical knowledge of the preparation of medicines. These certificates (as is the case also with all the certificates hereinafter mentioned) must be transmitted to the Registrar at least four weeks before the commencement of the examination. Fee for this examination, £5.

*M.B. Examination.*—The M B. Examination takes place twice in each year—once for Pass and Honours, commencing on the last Monday in October, and once for Pass candidates only, commencing on the first Monday in May. The subjects of the examination are General Pathology, General Therapeutics, Hygiene, Surgery, Medicine, Obstetric Medicine, and Forensic Medicine. No candidate will be admitted to this examination within twenty-one months of the time of his passing the Intermediate Examination unless he be a registered medical practitioner of not less than three years' standing, in which case he must produce certificates of having gone through the required course of training at any time previously. Every candidate must produce certificates:—1. Of having passed the Intermediate Examination. 2. Of having attended a course of lectures on each of two of the subjects enumerated above in the regulations for that examination for which the candidate had not on that occasion presented certificates. 3. Of having conducted at least twenty labours. Certificates on this subject will be received from any legally qualified practitioner in Medicine. 4. Of having attended the Surgical Practice of a recognised hospital or hospitals during two years, with clinical instruction and lectures on Clinical Surgery. 5. Of having attended the Medical Practice of a recognised hospital or hospitals during two years, with clinical instruction and lectures on Clinical Medicine, including Infectious Diseases and Lunacy. 6. Of having, after having attended Surgical and Medical Hospital Practice for at least twelve months subsequently to passing the Intermediate Examination in Medicine, attended to Practical Medicine, Surgery, or Obstetric Medicine, with special charge of patients, in a hospital, infirmary, dispensary, or parochial union during six months, such attendance not to be counted as part of either the Surgical or the Medical Hospital Practice prescribed in Clauses 4 and 5. 7. Of having acquired proficiency in Vaccination. Certificates on this subject will be received only from the authorised vaccinators appointed by the Privy Council. The fee for this examination is £5.

*Bachelor of Surgery.*—The examination for the degree of Bachelor of Surgery takes place once in each year and commences on the Tuesday following the first Monday in December. Candidates must produce certificates to the following effect:—1. Of having passed the examination for the degree of Bachelor of Medicine in this University. 2. Of having attended a course of instruction in Operative Surgery and of having operated on the dead subject. The subjects of the examination are Surgery and Pathology and Surgical Anatomy. Fee £5.

*Master in Surgery.*—The examination for the degree of Master in Surgery takes place once in each year and commences on the first Monday in December. Candidates must produce certificates to the following effect:—1. Of having taken the degree of Bachelor of Surgery in this University. 2. Of having attended, subsequently to having taken the degree of Bachelor of Surgery in this University: (*a*) to Clinical or Practical Surgery during two years in a hospital or medical institution recognised by this University; or (*b*) to Clinical or Practical Surgery during one year in a hospital or medical institution recognised by this University, and of having been engaged during three years in the practice of his profession; or (*c*) of having been engaged during five years in the practice of his profession, either before or after taking the degree of Bachelor of Surgery in this University. One year of attendance on Clinical or Practical Surgery, or two years of practice, will be dispensed with in the case of those candidates who at the B.S. Examination have been placed in the first division. 3. Of moral character, signed by two persons of respectability. The examination is conducted by means of printed papers and *viva-voce* interrogation, and the subjects are Mental Physiology (especially in its relations to mental disorder) and Surgery. Any candidate for the degree of M.S. may transmit to the Registrar, not later than Oct. 1st, a printed Dissertation, Thesis, or Commentary, written in view of candidature, or published within two academical years immediately preceding, treating scientifically some special department of Surgical Science; and if the Thesis be approved by the examiners the candidate will be exempt from the written examination in Surgery. The fee is £5.

*Doctor of Medicine.*—The examination for this degree takes place once in each year and commences on the first Monday in December. Candidates may present themselves for examination either in Medicine or State Medicine. Those presenting themselves for the M.D. Examination in Medicine must produce certificates to the following effect:—1. Of having attended, subsequently to having taken the degree of Bachelor of Medicine in this University: (*a*) to Clinical or Practical Medicine during two years in a hospital or medical institution recognised by this University; (*b*) or to Clinical or Practical Medicine during one year in a hospital or medical institution recognised by this University, and of having been engaged during three years in the practice of their profession; (*c*) or of having been engaged during five years in the practice of their profession, either before or after taking the degree of Bachelor of Medicine in this University. 2. Of moral character, signed by two persons of respectability. One year of attendance on Clinical or Practical Medicine, or two years of practice, will be dispensed with in the case of those candidates who at the M.B. Examination have been placed in the First Division. Candidates presenting themselves for the M.D. Examination in State Medicine must produce certificates to the following effect:—1. Of having attended, subsequently to having taken the degree of Bachelor of Medicine in this university: (*a*) to State Medicine during two years, including six months' practical instruction in a laboratory and six months' outdoor sanitary work; (*b*) or to State Medicine during one year, and of having held for a period of two years the position of medical officer of health in any sanitary district; (*c*) or of having held for a period of three years the position of medical officer of health in any sanitary district. 2. Of moral character. One year of attendance on State Medicine or one year of holding the position of medical officer of health will be dispensed with in the case of those candidates who at the M.B. Examination have been placed in the First Division. The examination is conducted by means of printed papers and *viva-voce* interrogation, and the subjects are Medicine (or State Medicine) and Mental Physiology (especially in its relation to mental disorder). Any candidate for the degree of M.D. may transmit to the Registrar, not later than Oct. 1st, a printed Thesis, written in view of candidature, or published within two academical years immediately preceding, treating scientifically some special department of Medical Science; and if the Thesis be approved by the examiners the candidate will be exempt from the written examination in Medicine (or State Medicine). The fee is £5.

## UNIVERSITY OF DURHAM.

One Diploma and six degrees are conferred—viz., the Diploma in Public Health and the degrees of Bachelor in Medicine, Bachelor in Surgery, Master in Surgery, Doctor in Medicine, Bachelor in Hygiene, and Doctor in Hygiene. These degrees are open both to Men and Women.

For the degree of *Bachelor in Medicine* (*M.B.*) there are four professional examinations.

The subjects of the First Examination are—Elementary Anatomy and Elementary Biology, Chemistry, and Physics.

The subjects for the Second Examination are—Anatomy, Physiology, Materia Medica, Therapeutics, Pharmacology, Pharmacy.

The subjects for the Third Examination are—Pathology, Medical Jurisprudence, Public Health, and Elementary Bacteriology.

The subjects of the Fourth Examination are—Medicine, Clinical Medicine and Psychological Medicine, Surgery and Clinical Surgery, Midwifery and Diseases of Women and Children.

For the degree of *Bachelor in Surgery (B.S.)* every candidate must have passed the examination for the degree of Bachelor in Medicine of the University of Durham and must have attended one course of lectures on Operative Surgery and one course on Regional Anatomy. Candidates will be required to perform operations on the dead body and to give proof of practical knowledge of the use of surgical instruments and appliances.

For the degree of *Master in Surgery (M.S.)* candidates must not be less than twenty-four years of age and must satisfy the University as to their knowledge of Greek. In case they shall not have passed in this subject at the Preliminary Examination in Arts for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.S. They must also have obtained the degree of Bachelor in Surgery of the University of Durham and must have been engaged for at least two years subsequent to the date of acquirement of the degree of Bachelor in Surgery, in attendance on the practice of a recognised hospital, or in the naval or military services, or in medical or surgical practice.

The subjects of examination are:—Principles and Practice of Surgery, Surgical Pathology, Surgical Anatomy, Surgical Operations, Clinical Surgery.

For the degree of *Doctor in Medicine (M.D.)* candidates must be not less than twenty-four years of age and must satisfy the University as to their knowledge of Greek. In case they shall not have passed in this subject at the Preliminary Examination in Arts for the M.B. degree they must present themselves at Durham for examination in it at one of the ordinary examinations held for this purpose before they can proceed to the higher degree of M.D. They must also have obtained the degree of Bachelor in Medicine of the University of Durham and must have been engaged for at least two years subsequently to the date of acquirement of the degree of Bachelor in Medicine in attendance on the practice of a recognised hospital, or in the military or naval services, or in medical and surgical practice. Each candidate must prepare an Essay, which must be typewritten, based on original research or observation, on some medical subject selected by himself, and approved of by the Professor of Medicine and must pass an examination thereon, and must be prepared to answer questions on the other subjects of his curriculum so far as they are related to the subject of the Essay.

The University of Durham has instituted a special examination whereby the degree of Doctor of Medicine may be obtained without residence. Candidates shall not be under 40 years of age and shall have been in active practice for 15 years as registered medical practitioners. They shall produce certificates of moral character from three registered members of the medical profession, and if they have not passed an examination in Arts previously to the Professional Examination in virtue of which they have been placed on the Register, they shall be required to pass in Classics and Mathematics. Candidates who have passed an examination in Arts previously to being placed on the Register are required to pass an examination in Latin. They will be examined in the Principles and Practice of Medicine, including Psychological Medicine, Hygiene, and Therapeutics, the Principles and Practice of Surgery, Midwifery, and Diseases of Women and Children, Pathology (Medical and Surgical), Anatomy (Medical and Surgical) Medical Jurisprudence, and Toxicology. The fee will be 50 guineas, of which 20 guineas will be retained if the candidate fails to satisfy the examiners.

Candidates for any of the above degrees must give at least 28 days' notice to Professor Howden, Secretary, College of Medicine, Newcastle-on-Tyne.

## VICTORIA UNIVERSITY.

Colleges of the University: Owens College, Manchester; University College, Liverpool; and Yorkshire College, Leeds.

Matriculation, which consists in signing the University Register, must precede entry upon any course of study in a College of the University, if that course is to be counted towards the required minimum of attendance for a degree. Those only can matriculate who are registered students of a College of the University.

Four degrees in Medicine and Surgery are conferred by the Victoria University—viz., Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.).

All candidates for degrees in Medicine and Surgery are required to pass an examination called the Preliminary Examination (Faculty of Medicine), or to have passed such other examination as may be recognised by the University for this purpose.[2]

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Before admission to the degree of M.B. or Ch.B. candidates are required to present certificates that they will graduation and that they have pursued the courses of have attained the age of 21 years on the day of study required by the University Regulations during a period of not less than five years subsequently to the date of their registration by the General Medical Council, two of such years having been passed in a College of the University, and one year at least having been passed in a College of the University subsequently to the date of passing the First M.B. Examination. All candidates for the degrees of Bachelor of Medicine and Bachelor of Surgery are required to satisfy the examiners in the several subjects of the following examinations: the First Examination, the Second Examination, and the Final Examination.

*The First Examination.*—The subjects of examination are as follows:—(1) Chemistry; (2) Elementary Biology; (3) Physics. Candidates must have attended during at least one year courses both of lectures and of laboratory work in each of the above-named subjects. The Examination is divided into two parts: Part 1. Physics and Chemistry; Part 2, Biology; and the candidates may pass in these parts separately.

*The Second Examination.*—The subjects of examination are as follows:—A: (1) Anatomy; (2) Physiology, including Physiological Chemistry and Histology; B: (3) Materia Medica and Pharmacy. Candidates may pass in A or B separately.

*The Final Examination.*—The subjects of examination are as follows:—(1) Pharmacology and Therapeutics. (2) General Pathology and Morbid Anatomy. (3) Forensic Medicine and Toxicology, and Public Health. (4) Obstetrics and Diseases of Women. (5) Surgery, Systematic, Clinical and Practical. (6) Medicine, Systematic and Clinical, including Mental Diseases and Diseases of Children.

Candidates may either present themselves in all the six subjects of examination on the same occasion or may pass the examination in two parts, the first part consisting of *two* or *three* of the subjects (1), (2) and 3), the second part of the remaining subjects.

Candidates who fail to satisfy the examiners in the first part must either present themselves again in the subjects as selected or in all the three subjects of the First part or in all the six subjects of examination.

Candidates for the first part of the examination must have completed the *fourth winter* of medical study.

Candidates for the second part of the examination, or for the whole examination, must have completed the fifth year of medical study.

*Degree of Doctor of Medicine.*—Candidates are not eligible for the degree of Doctor of Medicine unless they have previously received the degrees of Bachelor of Medicine

[2] The examinations at present recognised are:—1. Graduation in this or some other university of the United Kingdom, provided that Latin has formed part of one of the Degree Examinations. 2. London Matriculation. 3. Higher Certificate of the Oxford and Cambridge Schools Examination Board. (Certificates must show that the candidate has satisfied the Examiners in Latin, Elementary and Additional Mathematics, English or History, and in either Greek, French, or German. The Mechanical Division of Natural Philosophy will satisfy the requirements in Mechanics.) 4. Senior Oxford Locals (Honours). (Certificates must show that the candidate has satisfied the Examiners in Latin, Pure Mathematics, English Essay, English History, and in either Greek, French, German, or Spanish. Applied Mathematics (Section D) or Mechanics and Hydrostatics (Section E) will satisfy the requirements in Mechanics.) 5. Senior Cambridge Locals (Honours). (Certificates must show that the candidate has satisfied the Examiners in Latin, Euclid, and Algebra, English Composition, and English History, and in either Greek, French, German, or Spanish. Applied Mathematics (Section H) or Statics, Dynamics, and Hydrostatics (Section K) will satisfy the requirements in Mechanics). Provided that the subjects included in each of the above examinations shall include all the subjects required by the General Medical Council. If Mechanics has not been included among the subjects of examination, an approved examination in that subject must be passed before the candidate passes the First M.B. Examination. The Board of Studies has discretionary power to accept other examinations of at least equal standard.

and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. Candidates for the degree of Doctor of Medicine are required to present a printed Dissertation embodying the results of personal observations or original research, either in some department of medicine or of some science directly relative to medicine. No candidate will be admitted to the degree unless his Dissertation shall have been recommended by the General Board of Studies to the Council for acceptance. Candidates may be examined on any subject connected with their dissertations.

*Degree of Master of Surgery.*—Candidates are not eligible for the degree of Master of Surgery unless they have previously received the degrees of Bachelor of Medicine and Bachelor of Surgery and at least one year has elapsed since they passed the examination for those degrees. The subjects of examination are as follows: (1) Surgical Anatomy; (2) Surgery; (3) Operative Surgery; (4) Clinical Surgery; (5) Ophthalmology; (6) Pathology and Bacteriology.

## UNIVERSITY OF BIRMINGHAM.

The University of Birmingham grants the degrees of M.B., B.Ch., M.D., M.Ch., and also a B.Sc., and a degree and a diploma in Public Health. In order to obtain any of these degrees it is necessary that a student shall have passed at least the first four years of his curriculum in attendance upon the classes of the University.

*Degrees of Bachelor of Medicine and Bachelor of Surgery.*—The student must have passed either the Matriculation Examination of the University or one of the following examinations, which will be accepted in lieu thereof, for the present: (*a*) the previous examination of the University of Cambridge; (*b*) responsions of the University of Oxford; (*c*) the Matriculation Examination of any other University in the United Kingdom; (*d*) the leaving Certificate (Higher) of the Oxford and Cambridge Boards; (*e*) the Oxford or Cambridge Junior Local Examinations (First or Second Class Honours); (*f*) the Oxford or Cambridge Senior Local Examination (Honours); or (*g*) the College of Preceptors Examination for First Class Certificate. A Matriculation Examination will be held on June 3rd, 1901, and succeeding days. First Examination.—Part 1: Elementary Biology. One course of lectures and practical work. Part 2: Chemistry and Physics. One year's lectures with practical work. Second Examination.—Anatomy and Physiology. Two winter's and one summer's Dissections with lectures in Anatomy, and one winter course and one summer course of lectures and practical work in Physiology. Third Examination.—Materia Medica and Pharmacy. One course of lectures and practical work. Fourth Examination (at the end of the fourth year)—Pharmacology, Pathology, Forensic Medicine, and Public Health. Two years' hospital work must have been accomplished and the following course attended. Medicine and Surgery (two each). Hygiene and Public Health, Pathology, Therapeutics and Pharmacology, Midwifery, Gynæcology, and Forensic Medicine. Final Examination.—Medicine, Surgery, Midwifery, Gynæcology, Mental Diseases, and Ophthalmology. Attendance on general hospital for a year after the passing of the fourth examination, also attendance at fever hospital, lunatic asylum, vaccination, and courses of Ophthalmology, Medical and Surgical Anatomy and Operative Surgery.

*Degrees of Doctor of Medicine and Master of Surgery.*—Candidates for either of these degrees will be required either (*a*) to present a thesis embodying original observations in some subject embraced in the medical curriculum and approved by a board of medical examiners to whom the thesis will subsequently be submitted, on the report of which board the degree will be awarded or withheld (the candidate will be examined on the subject which he has chosen for his thesis and the examiners may require to see the notes of original observations on which the thesis is based); or (*b*) to pass a general examination (written and practical) in Medicine or Surgery, according to the degree desired, and, in addition, to show special proficiency in any one of the following subjects to be chosen by the candidate. For the degree of M.D.: (*a*) Infectious Diseases, (*b*) Diseases of the Chest, (*c*) Diseases of the Abdomen, (*d*) Nervous Diseases, (*e*) Diseases of Children, (*f*) Midwifery, (*g*) Pathology, (*h*) Bacteriology, (*i*) Medical Jurisprudence and Toxicology, (*j*) Public Health, (*k*) Mental Diseases, or (*l*) Diseases of the Skin. For the degree of M.Ch.: (*a*) Regional Surgery, (*b*) Gynæcology, (*c*) Ophthalmology, or (*d*) Diseases of the Ear, Nose, and Throat.

*Fees.*—Matriculation, £2; First Examination, £5; Second Examination, £5; Third Examination, £1; Fourth Examination, £3; Final Examination, £5.

## UNIVERSITY OF EDINBURGH.

Four Degrees in Medicine and Surgery are conferred by the University of Edinburgh—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degree of Bachelor of Surgery cannot be conferred on any person who does not at the same time obtain the degree of Bachelor of Medicine, and similarly the degree of Bachelor of Medicine is not conferred on any person who does not at the same time obtain the degree of Bachelor of Surgery.

Subject to regulations to be made from time to time by the University Court, the University may also confer diplomas in special branches of medical and surgical practice on graduates of the University in Medicine and Surgery.

Before commencing his medical studies each student must pass a preliminary examination in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek or French or German: Provided always that, in the case of a candidate whose native language is not English, an examination in the native language of the candidate may be substituted for one in either French or German, and an examination in any other classical language for one in Latin or Greek.

No one is admitted to the degrees of Bachelor of Medicine and Bachelor of Surgery who has not been engaged in Medical and Surgical study for five years. No course of lectures will be allowed to qualify unless the lecturer certifies that it has embraced at least 100 lectures, or 50 lectures, as may be required by the regulations, and that the student has also duly performed the work of the class.

Candidates for the degrees of M.B. and Ch.B. must have attended for at least three academic years the medical and surgical practice either of the Royal Infirmary, Edinburgh, or of a general hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons. They must have attended Clinical Surgery during a course or courses extending over not less than nine months. These courses may be conducted by the professor of clinical surgery, or by professors or lecturers appointed for the purpose by the University Court, or by the ordinary surgeons of the Royal Infirmary, Edinburgh, or of a general hospital defined and recognised as hereinbefore provided, and shall consist of regular instruction at the bedside, along with clinical lectures. A similar course of clinical medicine during a course or courses extending over not less than nine months is required. The candidate must have attended a course of instruction in Mental Diseases given by the University Lecturer, or by a recognised Teacher, consisting of not less than six Class-room meetings for lectures and demonstrations and ten meetings in the Wards of a recognised Asylum for the insane. The candidate must have attended a course of 25 meetings on Practical Pharmacy in a university or recognised school of medicine, or have dispensed drugs for a period of three months in a hospital or dispensary, or in an establishment recognised by the Pharmaceutical Society. The candidate must have attended for at least six months, by apprenticeship or otherwise, the out-practice of a hospital, or the practice of a dispensary, or of a physician or surgeon, or of a member of the London or Dublin Society of Apothecaries. He must have acted as clerk in the medical wards and dresser in the surgical wards of a public hospital for a period of six months in each case; and must also have availed himself, to such an extent as may be required by the Senatus, with the approval of the University Court, of opportunities of studying at a hospital or dispensary, Post-mortem Examinations, Fevers, Diseases of the Eye, Operative Surgery, and one of the three following, viz.—Diseases of Children, and Diseases of the Larynx, Ear, and Nose, and Diseases of the Skin, or such other special departments as may from time to time be determined. The candidate must have attended, under the superintendence of a registered medical practitioner, twelve cases of labour, or such additional number as the Senatus, with the sanction of the University Court, may from time to time determine; or have attended for three months the practice of a lying-in hospital, or of the maternity department of a general

hospital or other public charitable institution, and have conducted personally six or such an additional number of cases of labour as the Senatus, with the approval of the University Court, may from time to time determine. The candidate must have been properly instructed in Vaccination at a public vaccination station, by a public vaccinator, authorised by the proper Government authority to grant certificates of proficiency in vaccination.

Next, with respect to the places and institutions at which the studies of the candidate may be prosecuted, the following regulations have effect:—Two of the five years of medical study must be spent in the University of Edinburgh. The remaining three years may be spent in any University of the United Kingdom, or in any Indian, Colonial, or Foreign university recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court. Of the subjects of study, 16 in number—viz., Anatomy. Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica, Physiology, Practical Physiology. Practice of Medicine, Surgery, Midwifery and Diseases of Women, Pathology, Practical Pathology, Physics, Botany, Zoology, Medical Jurisprudence, and Public Health—not less than eight must be taken in the University of Edinburgh or in some other university of the United Kingdom, or in some Foreign or Colonial university entitled to confer the degree of Doctor of Medicine, recognised for the purpose by the University Court, or in a college incorporated with, or affiliated to, a university entitled to confer the degree of Doctor of Medicine, recognised for the purpose by the University Court.

Each candidate is examined, both in writing and orally, and clinically where the nature of the subject admits:—First, in Chemistry, Zoology, Botany, and Physics; second, in Anatomy, Physiology, Materia Medica and Therapeutics; third, in Pathology, and Medical Jurisprudence and Public Health; and fourth, in Surgery, Medicine, Midwifery, and clinically in Medicine and Surgery in a hospital. The examinations are conducted, as far as possible, by demonstrations of objects placed before the candidates. Candidates who profess themselves ready to submit to an examination in the first division of these subjects may be admitted to examination therein at the first period of examination after they have completed their attendance on the necessary classes. Candidates who have passed their examination in the first division of these subjects may be admitted to examination in the second division at the end of their third winter session. Candidates who have passed their examinations in the subjects comprised in the first and second divisions may be admitted to examination in the third division at the end of the fourth winter session. Candidates who have passed their examinations in the subjects comprised in the first, second, and third divisions may be admitted to examination in the fourth or final division when they have completed the fifth year of study.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery is £23 2*s*., and the proportion of this sum to be paid by a candidate at each division of the examination shall be as follows—viz.: For the First Division of the Examination (Botany, Zoology, Physics, and Chemistry), £6 6*s*.; for the Second Division (Anatomy, Physiology, and Materia Medica and Therapeutics), £6 6*s*.; for the Third Division (Pathology and Medical Jurisprudence and Public Health), £4 4*s*.; and for the Final Division (Surgery and Clinical Surgery, Medicine and Clinical Medicine, and Midwifery), £6 6*s*. The fee to be paid for the degree of Doctor of Medicine is £10 10*s*., and the fee to be paid for the degree of Master of Surgery is £10 10*s*.

## UNIVERSITY OF GLASGOW.

The University of Glasgow is both a teaching and a degree-granting body, but admits to graduation only candidates whose preliminary examination and course of study conform to its own regulations. Within certain limits instruction given by recognised medical schools and teachers may be accepted, but eight of the subjects other than clinical must be taken in this or some other recognised university entitled to confer the degree of M.D., and at least two years of the course must be taken in Glasgow University. Under the new regulations four degrees, open both to men and women, are conferred: M.B. and Ch.B. (always conjointly), M.D. and Ch.M. A Preliminary Examination must be passed in (1) English, (2) Latin, (3) Elementary Mathematics, and (4) Greek, or French, or German, with possible options to students whose native language is not English in the case of the fourth subject. Candidates taking the University preliminary examination are not obliged to pass in all the four subjects at one examination but must do so at not more than two occasions. For the degrees of M.B. and Ch.B. a curriculum of five years is required, in each of the first four of which the student must attend at least two five months' courses, or alternatively one five months' course and two courses of two and a half months. The minimum of attendance in the first four years includes five months' courses in the following subjects:—Anatomy, Practical Anatomy (two courses), Chemistry, Materia Medica and Therapeutics, Physiology, Practice of Medicine, Surgery, Midwifery and Diseases of Women and Infants, and Pathology; and courses of two and a half months in the following:—Practical Chemistry, Physics, Botany, Zoology, Practical Physiology, Practical Pathology, Medical Jurisprudence and Public Health. Candidates must attend at least three years the Medical and Surgical Practice of a recognised hospital accommodating at least 80 patients and having a distinct staff of physicians and surgeons. At least nine months' hospital attendance is required on both Clinical Surgery and Clinical Medicine, and the student must have acted as clerk in medical and dresser in surgical wards, and must have had six months' out-door practice; he must also have attended a course of Mental Diseases and of Practical Pharmacy (25 meetings), must have been properly instructed in Vaccination at a public vaccination station, and must have attended at least 12 cases of labour, or three months of the practice of a Lying-in Hospital, six cases being personally conducted. The University also requires further study in Post-Mortem Examinations, Fevers, and Ophthalmology, and recommends study in other special subjects. If a candidate has completed in a University of the United Kingdom a course of study and passed an examination in Botany, Zoology, Physics or Chemistry, qualifying for a degree in Science or in Arts, he is held to have passed the examinations in such subject or subjects.

There are four Professional Examinations, the first comprising Botany, Zoology, Physics, and Chemistry, to be taken after the completion of the included courses (candidates being at liberty to take two subjects at a time); the second comprising Anatomy, Physiology, and Materia Medica and Therapeutics, to be taken at the end of the third winter session; the third comprising Pathology, Medical Jurisprudence and Public Health, to be taken at the end of the fourth winter session; and the fourth or final, comprising Surgery, Clinical Surgery, Practice of Medicine, Clinical Medicine, and Midwifery, to be taken on completion of the fifth year of study.

The degrees of M.D. (Doctor of Medicine) and Ch.M. (Master of Surgery) are higher degrees in Medicine and Surgery respectively, and candidates (not under 24 years of age) who have previously obtained the double bachelorship may be admitted to either M.D. or Ch.M. on completing the after course prescribed, including an examination in Clinical Medicine for M.D. and an examination in Surgical Anatomy, operations on the dead body, and Clinical Surgery for Ch.M.

*Fees.*—The fees for M.B. and Ch.B. are £23 2*s*. The class fee in each subject of the curriculum for M.B. and Ch.B. is £3 3*s*. and the present fees for hospital attendance are £21. The fee for M.D. is £10 10*s*. (stamp duty being now abolished), and for Ch.M. £10 10*s*.

During last academic year there were 608 men and 76 women attending University courses in the Faculty of Medicine—a total of 684. The great majority of the students take their hospital course at the Western Infirmary, where clinical instruction is given by professors of the University and other physicians and surgeons. Clinical instruction on Fevers is given at Belvidere Hospital, while special courses, largely of a practical nature and embracing work in Hospital or Asylum wards, are conducted by University Lecturers on the Eye, the Ear, the Throat and Nose, and Insanity. Queen Margaret College, hitherto conducted as a separate institution for the higher education of women, has now been made over to the University, and in it medical classes for women are conducted under University professors and other lecturers appointed by the University Court, whilst for clinical

instruction female students are admitted to the Royal Infirmary. 52 women have graduated in Medicine since 1894, the year in which the University first conferred degrees on women.

Bursaries and Prizes to the annual amount of about £820 are appropriated to medical students, and Scholarships and Fellowships to the annual amount of about £1600 may be held by medical students who have gone through the Arts course.

## UNIVERSITY OF ABERDEEN.

The curricula for the several degrees conferred are nearly the same as in the Universities of Edinburgh and Glasgow.

Professional Examinations are held twice in each year—namely, in March and July, directly after the close of the winter and summer sessions.

The fees for graduation are the same as in the University of Edinburgh. Matriculation fee, including all dues, for the winter and summer sessions, £1 1*s.*; summer session alone, 10*s.* 6*d.*

Besides the Royal Infirmary, students have the opportunity of attending the following institutions: General Fever Hospital; Sick Children's Hospital; General Dispensary, and Lying-in and Vaccine Institutions daily; Royal Lunatic Asylum; Eye Institution, in which is given clinical instruction on Diseases of the Eye, and on the application of the Ophthalmoscope for their diagnosis.

A diploma in Public Health is granted by the University to graduates in Medicine of a University in the United Kingdom, after a special examination. The diploma can be entered on the Register of the General Medical Council.

Application for further information should be addressed to the Secretary of the Medical Faculty.

## UNIVERSITY OF ST. ANDREWS (UNITED COLLEGE ST. ANDREWS AND UNIVERSITY COLLEGE, DUNDEE)

The following are extracts from the Regulations for Degrees in Medicine contained in Ordinance No. 45 (St. Andrews, No. 4) of the Commissioners under the Universities (Scotland) Act, 1889. These regulations came into force on April 19th, 1897. Four Degrees in Medicine and Surgery shall be conferred by the University of St. Andrews—viz., Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). The degrees of M.B. and Ch.B. shall always be conjoined. Before commencing his medical studies each student shall pass a Preliminary Examination in, (*a*) English, (*b*) Latin, (*c*) Elementary Mathematics, and (*d*) one of the following optional subjects:—(α) Greek, (β) French, (γ) German, (δ) Italian, (ε) any other Modern Language, (ζ) Logic. A degree in Arts or in Science in any of the universities of the United Kingdom and in some colonial or foreign universities shall exempt from the Preliminary Examination. The Preliminary Examination for graduation in Medicine and Surgery, Arts or Science, of the University of St. Andrews is accepted as equivalent to the Registration Examination required by the General Medical Council (the certificate to include the required subjects). Also the Final Examination for a degree in Arts or Science and the final examination for the Diploma of L.L.A.

Candidates for the degree of Bachelor of Medicine and Bachelor of Surgery must have been engaged in medical study for at least five years. In each of the first four years the candidate must have attended at least two courses of instruction in one or more of the subjects of study specified below, each course extending over a session of not less than five months, either continuous or divided into two terms, or, alternatively, one such course along with two courses, each extending over a session of not less than two and a half months. During the fifth or final year the candidate shall be engaged in clinical study for at least nine months at the Infirmary of Dundee or at one or more of such public hospitals or dispensaries, British or foreign, as may be recognised for the purpose by the University Court. The candidate must have received instruction in each of the following subjects of study, including such examinations as may be prescribed in the various classes—viz.: Anatomy, Practical Anatomy, Chemistry, Materia Medica, Physiology, or Institutes of Medicine, Practice of Medicine, Surgery, Midwifery and the Diseases peculiar to Women and Infants, Pathology, Practical Chemistry, Physics (including the Dynamics of Solids, Liquids, and Gases, and the Rudiments of Sound, Heat, Light, and Electricity), Elementary Botany, Elementary Zoology, Practical Physiology, Practical Pathology, Forensic Medicine and Public Health. The candidate must have attended for at least three years the Medical and Surgical Practice either of the Infirmary of Dundee or of a General Hospital elsewhere which accommodates not fewer than 80 patients and possesses a distinct staff of physicians and surgeons and is recognised for the purpose by the University Court. Additional subjects of study are Practical Pharmacy, Mental Diseases, Practical Midwifery (12 cases of labour), Vaccination, Children's Diseases, Fevers, Ophthalmology, and Post-mortem Examinations.

With respect to the places and institutions at which the studies of the candidate may be prosecuted the following regulations shall have effect:—1. Two of the five years of medical study must be spent in the University of St. Andrews. 2. The remaining three years may be spent in any University of the United Kingdom or in any Indian, Colonial, or Foreign University recognised for the purpose by the University Court, or in such medical schools or under such teachers as may be recognised for the purpose by the University Court.

Women shall be admitted to graduation in Medicine, subject to the provisions of Ordinance No. 18 [General No. 9—Regulations for the Graduation of Women and for their Instruction in the Universities]: Provided always that every candidate for graduation shall produce evidence of having satisfied the conditions herein laid down with respect to the Preliminary Examination, and shall be examined in all the subjects necessary for graduation by the Examiners of the University of St. Andrews. All the classes necessary for graduation shall be taken in the University of St. Andrews, except in so far as instruction obtained elsewhere is allowed by the said Ordinance.

*Professional Examinations for the Degrees of Bachelor of Medicine and Bachelor of Surgery.*—Each candidate shall be examined both in writing and orally, and also clinically where the nature of the subject admits, in the following divisions—viz., First, in Botany, Zoology, Physics, and Chemistry; Second, in Anatomy, Physiology, and Materia Medica; Third, in Pathology, and Forensic Medicine and Public Health; Fourth, in Surgery and Clinical Surgery, Practice of Medicine and Clinical Medicine, and Midwifery.

The fee to be paid for the degrees of Bachelor of Medicine and Bachelor of Surgery shall be 22 guineas, and the proportion of this sum to be paid by a candidate at each division of the examination shall be regulated from time to time by the University Court. The fee to be paid for the degree of Doctor of Medicine shall be 10 guineas, exclusive of any stamp duty which for the time may be exigible. The fee to be paid for the degree of Master of Surgery shall be 10 guineas.

The whole medical curriculum can be taken in University College or the first two years in United College.

*Bursaries, United College, St. Andrews.*—Twelve Berry Bursaries for male Medical students of the annual value of £20 each, for two years. Fourteen Taylour Thomson Bursaries for female Medical students of the annual value of from £20 to £30 each, tenable for one or two years. The Bursaries are awarded in the order of merit, the most valuable ones being given to those students who obtain the highest marks in the Preliminary Examination, and who are prepared to take two Anni Medici at the United College, St. Andrews.

*University College, Dundee.*—(*a*) Open to either sex: Eleven Entrance Bursaries of £15, tenable for one year. (*b*) Open to either sex: Four £20 and three £15, second year. (*c*) Four £20 and two £15, third year. (*d*) Bute Bursary, founded in 1893 by the Most Honourable the Marquis of Bute, K.T. This Bursary consists of the free proceeds of £1000. (*e*) Two Bursaries of the annual value of £25, tenable for three years at either University College, Dundee, or at any Scottish University (local candidates only).

For further particulars apply to the Dean of the Medical Faculty, University College, Dundee, N.B.

## UNIVERSITY OF DUBLIN (TRINITY COLLEGE).

*Matriculation.*—All students in the School of Physic intending to practise Physic must be matriculated, for which a fee of 5*s.* is payable. No student can be admitted for the winter course after Nov. 25th.

*Degrees in Medicine (M.B.), Surgery (B.Ch.), and Midwifery (B.A.O.).*—Candidates for these degrees must be

of B.A. standing and must be for at least five academic years on the books of the Medical School, reckoned from the date of matriculation. The Arts course may be concurrent with the medical course, and the B.A. degree need not be taken before the final medical examination, but the medical degrees are not conferred without the Arts degree. The following courses must be attended:—(1) Lectures—Systematic, Practical and Applied Anatomy, Chemistry and Practical Chemistry, Surgery and Operative Surgery, Histology, Botany, Zoology, Physics, Physiology, Practice of Medicine, Midwifery, Pathology, Materia Medica and Therapeutics, Medical Jurisprudence and Hygiene; (2) three courses of nine months' attendance on the Clinical Lectures of Sir Patrick Dun's or other recognised Dublin Hospital (one year at a recognised London or Edinburgh hospital before the commencement of the Dublin curriculum may be counted as one year spent in such Dublin hospital); (3) Practical Vaccination, one month's instruction; (4) Mental Disease, three months'; (5) Practical Midwifery with Clinical Lectures, including not less than 30 cases, six months'; (6) Ophthalmic Surgery, three months'. Two examinations have to be passed. The Previous Medical or Half M.B. Examination, including Physics and Chemistry, Botany and Zoology, Anatomy and Institutes of Medicine (Practical Histology and Physiology), may be passed when credit has been obtained for the corresponding subjects and these may be taken separately if desired. The Final Examination is subdivided into five sections, comprising Applied Anatomy (Medical and Surgical), Applied Physiology, Jurisprudence and Hygiene, Materia Medica and Therapeutics, Medicine, Surgery, Pathology, Midwifery, Gynæcology, Obstetrical Anatomy, Clinical Medicine, Mental Diseases, Clinical Surgery, Operations, Clinical Ophthalmology. The first seven of these subjects may be passed in the fourth year and the last eight in the fifth year. Fee for the *Liceat ad Examinandum*, £10. Fee for the degrees, £17.

*Doctor in Medicine.*—A Doctor in Medicine must be a Bachelor in Medicine of at least three years' standing, or have been qualified to take the degree of M.B. for three years, and must read a thesis before the Regius Professor of Physic. Total amount of fees for this degree, £13.

*Master in Surgery.*—A Master in Surgery must be a Bachelor in Surgery of the University of Dublin of not less than three years' standing, and must produce satisfactory evidence of having been engaged for not less than two years from the date of his registration in the study, or study and practice, of his profession. He must then pass an examination in the following subjects:—1. Clinical Surgery. 2. Operative Surgery. 3. Surgical Pathology. 4. Surgery. 5. Surgical Anatomy (on the dead subject), and one of the following optional subjects:—1. Surgery in one of the following branches—viz., Ophthalmic and Aural, Gynæcological, and Dental. 2. Mental Disease. 3. Medical Jurisprudence and Hygiene. 4. Advanced Anatomy and Physiology. 5. Comparative Anatomy. Fee for the degree of Master in Surgery, £11.

*Master in Obstetric Science.*—A Master in Obstetric Science must have passed the M.B. and B.Ch. examinations, and produce a certificate of having attended a summer course in Obstetric Medicine and Surgery.[2] He is then required to pass an examination in the following subjects:—1. Practice of Midwifery. 2. Gynæcology. 3. Anatomy of Female Pelvis and Elementary Embryology. 4. Clinical Gynæcology. Fee for the degree of Master in Obstetric Science, £5.

*University Diplomas.*—Candidates for the diplomas in Medicine, Surgery, or Obstetric Science must be matriculated in Medicine, and must have completed two years in Arts and five years in Medical Studies. The Course and Examination necessary for the diplomas are the same as for the degrees, except that the candidate is not required to attend the Lectures on Botany and Zoology nor to pass the Previous Medical examination in those subjects. A diplomate, on completing his course in Arts and proceeding to the degree of B.A., may become a Bachelor by attending the Lectures on Botany and Zoology, passing the Previous Medical examination in those subjects, and paying the degree fees. Fee for the *Liceat ad Examinandum*, £10. Fee for the diplomas in Medicine, Surgery, and Midwifery, £11.

[2] Existing graduates in Medicine of the standing of M.D. are not required to attend this course.

## ROYAL UNIVERSITY OF IRELAND.

All Degrees, Honours, Exhibitions, Prizes Scholarships, and Studentships in this University are open to students of either sex.

Candidates for any degree in this University must have passed the Matriculation Examination. Students from other universities and colleges are included in this rule.

The following degrees, &c., are conferred by the University in this Faculty:—Bachelor of Medicine, Doctor of Medicine, Bachelor of Surgery, Master of Surgery, Bachelor of Obstetrics and Master of Obstetrics; in Sanitary Science, a special diploma; and in Mental Disease, a special diploma.

The Medical Examinations, except that for the diploma in Sanitary Science, will be held twice yearly—viz., in April and in October. The examination for the diploma in Sanitary Science will be held in July.

The course for degrees in Medicine, &c., is of at least five years' duration.

*The First Examination in Medicine.*—Students may be admitted to this examination after the lapse of one academical year from the time of their matriculation. They must also have previously passed the First University Examination and completed the first year of the medical curriculum. The subjects of this examination are Natural Philosophy, Systematic Chemistry, Zoology and Botany. The examination in each subject will comprise two parts:—1. A written examination. 2. Practical work and oral examination. For Chemistry the practical examination takes place at the close of the second year. Particular weight will be given to the practical part of the examination. Candidates at the First Examination in Medicine who at the First University Examination did not obtain 30 per cent. of the marks assigned to French or German will be required to present themselves for a qualifying examination in French or German. Failure to obtain 30 per cent. of the marks assigned to either of those languages will involve the loss of the examination.

*The Second Examination in Medicine.*—Students will be admitted to this examination after the lapse of one medical year from the time of passing the First Examination in Medicine, provided they have completed the second year of the medical curriculum. The subjects for this examination are Anatomy, Physiology, and Practical Chemistry.

*The Third Examination in Medicine.*—Students will be admitted to this examination after the lapse of one medical year from the time of passing the Second Examination in Medicine, provided they have completed the third year of the medical curriculum. The subjects for this examination will be Anatomy, Physiology, and Materia Medica (Pharmacology and Therapeutics).

*The Examination for the Medical Degrees.*—Students will be admitted to this examination after the lapse of not less than one medical year from the time of passing the Third Examination in Medicine, provided they have completed the course of medical studies prescribed for the entire medical curriculum. The examination consists of three parts or divisions:—(*a*) Medicine, including Therapeutics and Pathology, Mental Diseases, Medical Jurisprudence and Hygiene. (*b*) Surgery, Theoretical, Clinical, Operative; Surgical Anatomy, with Ophthalmology and Otology; Surgical Pathology. (*c*) Midwifery and Gynæcology, with Diseases of Children. Each part of this examination must be passed as a whole. Upon completing satisfactorily his examination in all three divisions the candidate will, in addition to the parchment diplomas recording his admission to the Medical Degrees of M.B., B.Ch., and B.A.O., receive a certificate of having passed a qualifying examination in the subjects of Medicine, Surgery, and Midwifery. The fee for this certificate is £10, which must be paid prior to the candidate's admission to the Medical Degrees.

*M.D. Degree.*—Candidates may present themselves for the examination for this degree after the lapse of three academical years from the time of obtaining the degree of M.B. They must at the same time produce a certificate of having been, for at least two academical years, engaged in hospital or private, medical, surgical, or obstetrical practice, or in the military or naval medical service. Every candidate will be examined at the bedside, and required to diagnose at least three medical cases, and prescribe treatment, and to write detailed reports on at least two cases to be selected by the examiners and to discuss all the questions arising thereon.

*The M. Ch. Degree.*—This degree will be conferred only on graduates in Medicine of the University of at least three years' standing. They must at the same time produce a certificate of having been, for at least two academical years, engaged in hospital or private, medical, surgical, or obstetrical practice, or in the military or naval medical service. The examination for this degree will comprise Surgical Diseases and Surgery, both theoretical and operative; Surgical Anatomy; Ophthalmology and Otology; and will include—(*a*) a written examination; (*b*) a clinical examination; (*c*) an examination on Surgical Instruments and Appliances; and (*d*) an examination in Operative Surgery.

*The Mastership in Obstetrics.*—This degree will be conferred only on graduates in Medicine of the University of at least three years' standing. They must at the same time produce a certificate of having been, for at least two academical years, engaged in hospital or private, medical, surgical, or obstetrical practice, or in the military or naval military service. The examination will comprise the Theory and Practice of Midwifery and of Diseases of Women and Children and the Use of Instruments and Appliances and will include—(*a*) a written examination; (*b*) a clinical examination as far as practicable; (*c*) an oral examination, with practical illustrations; and (*d*) an examination on Instruments and Appliances.

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## EXAMINING BOARD IN ENGLAND BY THE ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.[1]

*Regulations relating to the several Examinations applicable to Candidates who commenced their Professional Education on or after Jan. 1st, 1892.*

Any candidate who desires to obtain both the licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England is required to complete five years of professional study at recognised Medical Schools and Hospitals and to comply with the following regulations and to pass the examinations hereinafter set forth. (One of the five years may be spent in an Institution recognised by the Board for instruction in Chemistry, Physics, Practical Chemistry, and Biology.)

*Professional Examinations.*—There are three Examinations, called herein the First Examination, the Second Examination, and the Third or Final Examination, each being partly written, partly oral, and partly practical. These examinations will be held in the months of January, April, July, and October, unless otherwise appointed. Every candidate intending to present himself for examination is required to give notice in writing to Mr. F. G. Hallett, secretary of the Examining Board, Examination Hall, Victoria Embankment, W.C., fourteen clear days before the day on which the examination commences, transmitting at the same time the required certificates.

The subjects of the First Examination are—Chemistry and Physics, Practical Pharmacy, and Elementary Biology. A candidate may take this examination in three parts at different times. A candidate will be admitted to examination in Chemistry and Physics and Elementary Biology before registration as a medical student, and to examination in Practical Pharmacy on producing evidence of having been registered as a medical student by the General Medical Council, *or he may take Pharmacy* at any time during the curriculum. A candidate rejected in one part or more of the First Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection, and he will be re-examined in the subject or subjects in which he has been rejected. If referred in Chemistry or Biology he must produce evidence of further instruction at a recognised institution. Any candidate who shall produce satisfactory evidence of having passed an examination for a degree in Medicine on any of the subjects of this examination conducted at a university in the United Kingdom, in India, or in a British colony will be exempt from examination in those subjects in which he has passed.

The fees for admission to the First Examination are as follows: For the whole examination, £10 10*s.*; for re-examination after rejection in Part I., £3 3*s.*; and for re-examination in each of the other parts, £2 2*s.*

The subjects of the Second Examination are Anatomy and Physiology. Candidates will be required to pass in both subjects at one and the same time. Candidates will be admissible to the Second Examination at the expiration of two winter sessions and one summer session (or fifteen months during the ordinary sessions) from the date of registration as Medical Students and after the lapse of not less than 12 months of one Winter and one Summer Session from the date of passing Parts I. and III. of the First Examination.

A candidate referred on the Second Examination will be required, before being admitted to re-examination, to produce a certificate that he has pursued, to the satisfaction of his teachers, in a recognised place of study, his Anatomical and Physiological studies during a period of not less than three months subsequently to the date of his reference.

The fees for admission to the Second Examination are: £10 10*s.* for the whole examination, and £6 6*s.* for re-examination after rejection.

The subjects of the Third or Final Examination are: Part I. Medicine, including Medical Anatomy, Pathology, Practical Pharmacy, Therapeutics, Forensic Medicine, and Public Health. Candidates who have passed in Practical Pharmacy at the First Examination will not be re-examined in that subject at the Third Examination. Part II. Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances. Part III. Midwifery and Diseases Peculiar to Women. Candidates may present themselves for examination in Midwifery and Diseases of Women at any time after the completion of the fourth year of professional study, not less than one year after passing the Second Examination, on production of the required certificates. Candidates may take this examination in three parts at different times, or they may present themselves for the whole examination at one time. They will be required to produce the following evidence before being admitted to the several parts of the Third, or Final Examination—viz., in Medicine, of having attended Lectures on Medicine, Pathology including Bacteriology, Pharmacology and Therapeutics, Forensic Medicine, and Public Health; Practical Instruction in Medicine; Medical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Medicine during nine months; of having discharged the duties of Medical Clinical Clerk; Practice of a Fever Hospital and Clinical Demonstrations at a recognised Lunatic Asylum; in Surgery, of having attended Lectures on Surgery and Pathology including Bacteriology; Practical Instruction in Surgery; of having performed operations upon the Dead Subject; Surgical Hospital Practice during two winter and two summer sessions; Demonstrations in the Post-mortem Room during 12 months; Clinical Lectures on Surgery during nine months; of having discharged the duties of Surgical Dresser, and Clinical Instruction in Ophthalmology; in Midwifery of having attended Lectures on Midwifery; Practical Instruction in Midwifery; Clinical or other Lectures, with Practical Instruction in Diseases Peculiar to Women; and of attendance on 20 Labours.

Fees for admission to the Third or Final Examination are as follows: For the whole examination, £21. Part I. For re-examination in Medicine, including Medical Anatomy, Pathology, Therapeutics, Forensic Medicine, and Public Health, £5 5*s.*; for re-examination in Practical Pharmacy (if taken at this examination), £2 2*s.* Part II. For re-examination in Surgery, including Pathology, Surgical Anatomy, and the use of Surgical Appliances, £5 5*s.* Part III. For re-examination in Midwifery and Diseases Peculiar to Women, £3 3*s.*

A candidate referred on the Third or Final Examination will not be admitted to re-examination until after the lapse of a period of not less than three months from the date of rejection and will be required, before being admitted to re-examination, to produce a certificate, in regard to Medicine and Surgery, of having attended the Medical and Surgical Practice, or the Medical or Surgical Practice, as the case may be, during the period of his reference; and in regard to Midwifery and Diseases Peculiar to Women a certificate of having received, subsequently to the date of his reference, not less than three months' instruction in that subject by a recognised teacher.

[1] The diploma of Member of the Royal College of Surgeons of England and the Licence of the Royal College of Physicians of London are no longer granted separately except to students who commenced their professional study prior to Oct. 1st, 1884.

## ROYAL COLLEGES OF SURGEONS AND PHYSICIANS OF EDINBURGH AND FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

These Colleges have made arrangements by which, after one series of examinations, held in Edinburgh or in Glasgow, or in Edinburgh and Glasgow, the student may obtain the diplomas of the three Bodies.

The three Bodies grant their Single Licences only to candidates who already possess another and opposite qualification in Medicine or Surgery, as the case may be, recognised by them. Copies of the Regulations for the Single Licence of any of the Bodies may be had on application to the respective secretaries.

*Professional Education.*—1. Candidates who commenced medical study *before* Jan. 1st, 1892, must have been engaged in professional study during 45 months from the date of registration as medical students by the General Medical Council, which period shall include not less than four winter sessions' attendance at a recognised medical school. 2. The candidate must produce certificates or other satisfactory evidence of having attended the following separate and distinct courses of instruction: Anatomy, during at least six months; Practical Anatomy, twelve months; Chemistry, six months; Practical or Analytical Chemistry, three months; Materia Medica, three months; Physiology, six months; Practice of Medicine, six months; Clinical Medicine, nine months; Principles and Practice of Surgery, six months; Clinical Surgery, nine months; Midwifery and the Diseases of Women and Children, three months; Medical Jurisprudence, three months; Pathological Anatomy, three months. The six months' courses delivered in Scotland must consist of not fewer than 100 lectures. The three months' courses must consist of not fewer than 50 lectures. The number of lectures certified as attended at any school not situated in Scotland should not be less than three-fourths of the total number of lectures delivered in a course. 3 The candidate must also produce the following certificates:—(*a*) Of having attended not less than six cases of labour, three of these to be conducted personally under the direct superintendence of the practitioner who signs the certificate, who must be a registered medical practitioner. (*b*) Of having attended, for three months, instruction in Practical Pharmacy; the certificate to be signed by the teacher, who must be a member of the Pharmaceutical Society of Great Britain, or the superintendent of the laboratory of a public hospital or dispensary, or a registered practitioner who dispenses medicines to his patients, or a teacher of a class of Practical Pharmacy. (*c*) Of having attended for 24 months the Medical and Surgical practice of a public general hospital containing on an average at least 80 patients available for clinical instruction and possessing distinct staffs of physicians and of surgeons. (*d*) Of having attended for six months (or three months, with three months' hospital clerkship) the practice of a public dispensary specially recognised by any of the above authorities, or the out-patient practice of a recognised general hospital, or of having acted for six months as pupil to a registered practitioner who either holds such a public appointment, or has such opportunities of imparting practical knowledge as shall be satisfactory to the coöperating authorities; this attendance should be made after the student has passed the First and Second Examinations. (*e*) Of having been instructed by a registered medical practitioner in the Theory and Practice of Vaccination, and of having performed operations under the teacher's inspection, during a period of not less than six weeks.

Candidates shall be subjected to three Professional Examinations, and they may enter either for the whole of an Examination or for a division thereof.

*First Examination.*—The First Examination shall embrace the two divisions of (1) Chemistry and (2) Elementary Anatomy and Histology, and shall take place not sooner than the end of the first year, including the period of a winter and a summer session. For the whole Examination taken at one time the sum of £5 5*s.* must be paid to the inspector of certificates not later than one week preceding it, after which no candidate will be entered. After rejection, for re-entry in all subjects, £3 3*s.*; for re-entry after obtaining exemption from re-examination in one or two subjects, £2 2*s.*; for entering for one division of subjects separately, £3 3*s.*; and for each re-entry after rejection, £2 2*s.* Any candidate who shall produce satisfactory evidence of having passed an equivalent examination in any of the subjects of the First Examination before any of the boards specified in the Regulations will be exempt from examination in such subjects.

*Second Examination.*—The Second Examination shall embrace the three subjects of (1) Anatomy, (2) Physiology, (3) Materia Medica and Pharmacy, each of which shall constitute a division of the examination and may be entered for separately. The examination shall not take place before the termination of the summer session of the second year of study, including two winters and two summers. The fees for admission to this examination payable not later than one week before the day of examination, are as follows:—For the whole examination, £5 5*s.*; after rejection for re-entry in all subjects, £3 3*s.*; for re-entry after obtaining exemption from re-examination in one or two subjects, £2 2*s*; for entering for one subject separately, £2 2*s.*; and for each re-entry therein after rejection, £2 2*s* Any candidate who shall produce satisfactory evidence of having passed an equivalent examination in any of the subjects of the Second Examination before any of the boards specified in the Regulations will be exempt from examination in such subject or subjects.

*Final Examination.*—The Final Examination shall embrace the three divisions of—(1) the Principles and Practice of Medicine (including Therapeutics, Medical Anatomy, and Pathology) and Clinical Medicine; (2) the Principles and Practice of Surgery (including Surgical Anatomy and Surgical Pathology) and Clinical Surgery; (3) Midwifery and Gynæcology, Medical Jurisprudence, and Hygiene (which divisions may be entered for separately at different times); and shall not take place before the termination of the full period of study. The fees for this Examination, payable not later than one week before the examination day, are as follows: For the whole Examination, taken at one time, in the case of candidates who have passed the First and Second Examinations, £15 15*s.*, of which £10 10*s.* shall be returned to unsuccessful candidates. For entering for each of the three divisions of subjects separately, £6 6*s.*, and on re-entry after rejection, £2 2*s.* in respect of each division or part thereof. This rule will also apply to any subsequent rejection. Any candidate admitted to the Final Examination, on the footing of having passed in the subjects of the First and Second Examinations at a recognised board, shall, on entering, pay the full fee of £26 5*s.*

All candidates shall be subjected, in addition to the Written and Oral Examinations, to Clinical Examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical Use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface Markings, &c.

### REGULATIONS FOR CANDIDATES WHO COMMENCED STUDY *after* JANUARY 1ST, 1892.

In addition to the courses above prescribed candidates are required to attend the following courses: Physics, three months; Elementary Biology, three months; Diseases and Injuries of the Eye, three months; Insanity, three months; Infectious Diseases, three months; and a third year of Hospital Practice with Clinical instruction (which may include the study of special diseases).

The curriculum lasts for five years; the fifth year should be devoted to clinical work at one or more public hospitals or dispensaries. Six months of the fifth year may be passed by the student as a pupil to a registered practitioner possessing such opportunities of imparting practical knowledge as may be deemed satisfactory by the Committee of Management. The student's regularity of attendance in the wards and out-patient departments of the hospitals and at the post-mortem examinations should be duly ascertained and noted on the certificate.

Candidates shall be subjected to four Professional Examinations:

*First Examination.*—The First Examination shall embrace the following divisions of subjects—(1) Physics, (2) Chemistry, and (3) Elementary Biology. The fees payable for admission to the First Examination shall be for the whole Examination, £5; for each division separately, £2 10*s.*

*Second Examination.*—The Second Examination shall embrace Anatomy and Physiology including Histology; and candidates may be admitted to this Examination at the end of the second year of medical study. The fees payable for admission to the Second Examination shall be—for the whole Examination, £5.

*Third Examination.*—The Third Examination shall embrace Pathology and Materia Medica with Pharmacy. The

fees payable for admission to the Third Examination shall be—for the whole Examination, £5; for re-entry in both subjects after rejection, £3.

*Final Examination.*—The Final Examination shall not be passed earlier than the end of the fifth year of study and shall embrace the following subjects:—Medicine, including Therapeutics, Medical Anatomy, and Clinical Medicine; Surgery, including Surgical Anatomy, Clinical Surgery, and Diseases and Injuries of the Eye; Midwifery and Diseases of Women and of New-born Children; and Medical Jurisprudence and Public Health. All candidates shall be subjected, in addition to the Written and Oral Examinations, to Clinical Examinations in Medicine and Surgery, which shall include the Examination of Patients, Physical Diagnosis, the Clinical use of the Microscope, Examination of the Urine and Urinary Deposits, Surgical Appliances, Bandages, Surface markings, &c. The fees payable for the Final Examination shall be,—for the whole Examination, £15, for re-entry in all subjects after rejection, £5.

There are six periods of Examination annually, four in Edinburgh and two in Glasgow, and candidates may present themselves at either examining centre irrespective of the place of the previous examination. The Registrar in Edinburgh is Mr. J. Robertson, Solicitor, 48, George-square; and the Registrar in Glasgow, Mr. A. Duncan, LL.D., 242, St. Vincent-street, to whom fees and certificates must be sent.

*Note.*—In applying for copies of the Regulations students should state whether they commenced medical study before or after Jan. 1st, 1892.

## ROYAL COLLEGE OF PHYSICIANS AND ROYAL COLLEGE OF SURGEONS IN IRELAND.

Two sets of Regulations are at present in force, under which examinations take place for the conjoint diploma of these bodies. The following Regulations are obligatory on all students commencing on or after Dec. 31st, 1891:—

### PRELIMINARY EXAMINATION AND REGISTRATION.

Every candidate for the Conjoint Examinations of the Colleges shall produce evidence—(*a*) of having, before entering on medical studies, passed a Preliminary Examination in general education recognised by the General Medical Council; and (*b*) of having been registered by that Council as a Student in Medicine. Each candidate before receiving his diplomas must produce a registrar's certificate or other satisfactory evidence that he has attained the age of 21 years.

*Preliminary Examination.*—The subjects for examination are identical with those prescribed for the Preliminary Examination by the General Council of Medical Education and Registration.

### *Professional Examinations.*

Every candidate is required to pass four Professional Examinations—at the end of the first, second, fourth and fifth years of his professional studies. No candidate shall be admitted to the Final or Qualifying Examination within three months of his rejection at the Final or Qualifying Examination by any other licensing body. All examinations shall be conducted as far as possible by demonstration of objects placed before the candidates.

*First Professional Examination.*—Every candidate is required, before admission to the First Professional Examination, to produce evidence—(1) of having passed in the subjects of the Preliminary Examination; (2) of having been registered as a medical student by the General Medical Council; and (3) of having attended a course of—(*a*) Demonstrations and Dissections; (*b*) lectures on Theoretical Chemistry, winter courses; (*c*) Practical Chemistry, three months' summer or winter course; (*d*) Elementary Biology; (*e*) Physics. [*Note.*—Biology and Physics may be studied either before or after registration at institutions recognised for the purpose by the Colleges.] (*f*) Practical Pharmacy—(1) evidence of attendance for three months in the compounding department of a clinical hospital, which hospital shall have satisfied the committee of management that its means of instruction are sufficient, and shall return to the committee the names of its students at the commencement of the course, together with a record of their attendance at its close; or (2) evidence of attendance on a course of Practical Pharmacy in a recognised medical school, the course to consist of not less than 20 demonstrations; or (3) evidence of having served a full apprenticeship of three years, or of having acted as paid assistant for not less than one year, in the establishment of a Licentiate apothecary or of a registered pharmaceutical chemist. The fee for this examination is £15 15*s*.

The subjects of the First Professional Examination are the following:—1. (*a*) Chemistry; (*b*) Physics. 2. Practical Pharmacy. 3. Elementary Biology. 4. Anatomy—viz., Bones, with attachments of Muscles and Ligaments, and Joints. Candidates may take this examination as a whole at one time or in four parts, but no portion earlier than the end of the first winter session.

*Second Professional Examination.*—Candidates are not admissible to this examination before the end of their second winter session. Every candidate is required, before admission to the Second Professional Examination, to produce evidence of having passed the First Professional Examination; also certificates of having attended—(1) a medico-chirurgical hospital for nine months; (2) Demonstrations and Dissections for six months; (3) Practical Histology for three months; (4) Lectures on (*a*) Anatomy for six months; (*b*) Physiology for six months; (*c*) Materia Medica for three months. Materia Medica may be deferred to the third year. The fee for this examination is £10 10*s*.

The subjects of the Second Professional Examination are the following:—1. Anatomy: the anatomy of the whole human body; (2) Histology; (3) Human Physiology; (4) Materia Medica. The candidate must present himself, in the first instance at least, in Anatomy and Histology; if he pass in either of these subjects he may, at the discretion of the examiners, get credit therefor. Physiology and Materia Medica may, at the option of the candidate, be passed at the end of the second or during the third year.

In the case of candidates who commenced medical study on or after Oct. 1st, 1898, the Second Professional Examination will be divided into two parts. Part I. Anatomy, Histology, Elementary Physiology. Part II. Advanced Physiology, Materia Medica.

*Third Professional Examination.*—Candidates are not admitted to this examination before the end of their fourth winter session. Every candidate is required, before admission to the Third Professional Examination, to produce evidence of having passed the Second Professional Examination; also, in addition to the certificates required for the Second Professional Examination, certificates of having attended—(1) a medico-chirurgical hospital for eighteen months, including fever wards; (2) a midwifery hospital or maternity for six months, including evidence of having been present at 30 labours;[5] (3) clinical instruction in Mental Diseases at an institution recognised by the Colleges[5] for three months; (4) Operative Surgery, including operations on the dead subject, not less than 30 meetings of the class; (5) Demonstrations and Dissections, for six months; (6) Vaccination;[5] (7) Practical Pathology, not less than 30 meetings of the class; (8) Lectures on (*a*) Medicine for six months; (*b*) Surgery for six months; (*c*) Public Health and Forensic Medicine for three months; (*d*) Midwifery, including Diseases peculiar to Women and to New-born Children, for six months. Nos. 2, 3, and 6 may be deferred to fifth year. Satisfactory evidence must be produced of attendance in fever wards in connexion with the hospital attendance in either the third or a subsequent year. The fee for this examination is £9 9*s*.

The subjects for the Third Professional Examination are the following:—(1) Medicine; (2) Surgery; (3) Pathology; (4) Therapeutics; (5) Public Health and Forensic Medicine. A candidate must present himself, in the first instance at least, in Medicine, Surgery, Therapeutics, and Pathology. Should he pass in any subject he may, at the discretion of the examiners, get credit therefor, even if he have failed in other parts of the examination.

*Final Professional Examination.*—Candidates are not admissible to this examination before the end of their fifth year of medical study. Every candidate is required before admission to produce evidence—(1) of having passed the Third Professional Examination; (2) of having attended—(*a*) Clinical Instruction in Ophthalmic and Aural Surgery for three months; (*b*) a midwifery hospital or maternity, if not taken in the fourth year, for six months; (*c*) Vaccination, if not taken in the third or fourth year; (*d*) Clinical Instruction in Mental Diseases, if not taken in the fourth year.

The subjects for the Fourth Professional Examination

[5] May be taken in either the fourth or fifth year.

are the following:—(1) Medicine, including Medical Anatomy and Mental Diseases; (2) Surgery, including Operative Surgery and Surgical Anatomy; (3) Ophthalmic and Aural Surgery; (4) Midwifery, including Diseases of Women and New-born Children; and (5) the Theory and Practice of Vaccination. Every candidate shall produce evidence of having acted as medical clinical clerk and as surgical dresser. Candidates may present themselves for examination in *all* the subjects of the Final Examination at the *same* time, or in one or more of the following groups:—(*a*) In Medicine, including Mental Diseases, Medical Anatomy, and Clinical Medicine; (*b*) Surgery, including Ophthalmic and Aural Surgery, Clinical Surgery, Operations, and Surgical Anatomy; (*c*) Midwifery, including Diseases of Women and New-born Children, and the Theory and Practice of Vaccination. Candidates must pay the full fee before being admitted to any part of the examination. Candidates may take the groups in any order they please. The fee for this examination is £6 6*s*.

## SOCIETY OF APOTHECARIES OF LONDON.

There are two examinations—Primary and Final. The Final Examination is divided into Section I. and Section II. The Primary Examination is held quarterly, on the first Wednesday and on the Monday and Thursday of the same week, in the months of January, April, July, and October. Final Examinations are held monthly.

The Primary Examination consists of two parts. Part I. Elementary Biology; Chemistry, Chemical Physics, including the Elementary Mechanics of Solids and Fluids, Heat, Light, and Electricity; Practical Chemistry; and Materia Medica and Pharmacy. A synopsis indicating the range of the subjects in the examination will be sent with the regulations on application. Evidence of instruction in these subjects must be produced prior to examination. Part II. includes Anatomy, Physiology, and Histology. This examination cannot be passed before the completion of twelve months' Practical Anatomy with Demonstrations, and these subjects cannot be taken separately except in the event of the candidate having previously passed in one. Evidence must be produced of the candidate's course of study. A schedule for the Primary Examination, to be obtained of the Secretary, must be signed by the Dean of the Medical School or other authority. Section I. of the Final Examination consists of three parts. Part I. includes the Principles and Practice of Surgery, Surgical Pathology, and Surgical Anatomy, Operative Manipulation, Instruments, and Appliances. Part II. includes the Principles and Practice of Medicine, Pharmacology, Pathology and Morbid Histology; Forensic Medicine, Hygiene, Theory and Practice of Vaccination; and Mental Diseases. Part III. includes Midwifery, Gynæcology, and Diseases of New-born Children and the Use of Obstetric Instruments and Appliances. Section I. of the Final Examination cannot be passed before the expiration of 45 months after registration as medical student, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognised by the Society. Section II. of the Final Examination consists of two Parts. Part I. Clinical Surgery; Part II. Clinical Medicine and Medical Anatomy. Section II. cannot be passed before the end of the fifth year.

The course of study for the Primary Examination is as follows:—Elementary Biology, not less than three months; Chemistry and Chemical Physics, six months; Practical Chemistry, three months; Pharmacy and Dispensing, three months; Anatomy, six months; Practical Anatomy with Demonstrations, twelve months; Physiology, six months; Histology with Demonstrations, three months. The study of these subjects must be pursued at a Medical School recognised by the Society. Evidence of having received instruction in the subjects of Part I. of the Primary Examination before registration as medical student will be accepted. Instruction in Pharmacy and Dispensing must be given by a registered medical practitioner or by a member of the Pharmaceutical Society by examination or in a public hospital, infirmary, or dispensary.

The course of study for the Final, Section I., Examination includes attendance on the Surgical and Medical Practice (with Post-mortem Examinations) at a hospital connected with a medical school for a period of one winter and one summer session; lectures on the Principles and Practice of Surgery, six months; Practical Surgery, three months; Clinical Surgical Lectures, nine months; Dressership, six months; Performance of Surgical Operations on the Dead Body; lectures on Principles and Practice of Medicine, six months; Pathology, three months; Clinical Medical Lectures, nine months; Clinical Clerkship,[6] six months; Forensic Medicine, Hygiene, and Insanity, three months; Midwifery and Gynæcology, three months; Clinical Instruction in the same, three months; a course of Practical Midwifery; attendance on 20 Midwifery cases. The course of medical study must extend over the above-mentioned period of 45 months.

The course of study for the Final Examination Section II. includes either attendance on the Practice of Medicine and Surgery at a hospital or other institution recognised by the Society for a further period of 12 months, or six months as above and six months as a pupil of a registered practitioner holding a public medical or surgical appointment, or attendance at two special hospitals for six months (three months at each hospital), and for six months at a general hospital, all such hospitals to be recognised by the Society. Evidence shall also be given of practical instruction in Infectious Diseases and in Mental Diseases (at a lunatic asylum or in the wards of an institution containing a special ward set apart for the treatment of mental diseases), and in any two of the following subjects: Ophthalmic Surgery, Laryngology with Rhinology and Otology, Dermatology, and Diseases of Children. No candidate is eligible for the Final Examination who has not completed the curriculum prescribed by the Society, in evidence of which a schedule, to be obtained of the Secretary, must be produced, signed by the Dean of the Medical School or other authority. Prior to Section II. of the Final Examination the candidate must produce certificates: (1) of being 21 years of age; (2) of moral character; (3) of the course of medical study; and (4) of proficiency in vaccination signed by a teacher authorised by the Local Government Board. Candidates intending to present themselves for examination are required to give 14 days' notice. A form for this purpose will be sent on application.

The fee for the Licence is 15 guineas, or five guineas for each examination. The examination offices are open from 10 A.M. to 4 P.M.; on Saturdays from 10 A.M. to 1 P.M. All letters should be addressed to the Secretary, Society of Apothecaries of London, Blackfriars, E.C.

## APOTHECARIES' HALL OF IRELAND.

The Licence of this Hall is granted to students who can present certificates of having fully completed the course of study as laid down in the curriculum. The diploma of the Apothecaries' Hall of Ireland entitles the holder to be registered as a practitioner in medicine, surgery, and midwifery, also with the privileges of the Apothecary Licence. There are four professional examinations, the total fees in connexion with which amount to 21 guineas. Ladies are eligible for this diploma. Candidates already on the Register will receive the diploma of the Hall upon passing an examination in the subjects which are not covered by their previous qualifications and on paying a fee of 10 guineas. If medicine or surgery be required two guineas extra will be charged.

Further information can be obtained from Mr. R. Montgomery, Registrar.

## UNIVERSITY OF BRUSSELS.

British and other practitioners holding registrable qualifications are admitted to the examination for the Doctorate of the University of Brussels without further curriculum. It is essentially a *practitioner's* examination and is separate from that intended for the Belgian students who take up the medical curriculum of the University. The fees are—For matriculation, £3 12*s*.; for 1st Part, £4 8*s*.; for 2nd Part, £4 4*s*.; for 3rd Part, £4 8*s*.; for legalisation of diploma, 8*s*.—total, £22. Candidates who have paid in advance the fees for the three examinations, and are unsuccessful in the first, recover the fees paid for the second and third; those who fail in the second recover the fees paid for the third examination. Unsuccessful candidates are allowed to come up again three months after rejection on payment of examination fees only.

[6] These offices must be held at a hospital, or other institution recognised by the society.

provided this second appearance be in the course of the same academical year (October 1st to June 30th), otherwise they must renew the payment of the matriculation fee of £8 12*s*. There are three examinations, viz.—1st Part: General Medicine; Pathology and Morbid Anatomy; General Therapeutics; Materia Medica and Pharmacology; Special Therapeutics and Mental Diseases. 2nd Part: Surgery; Midwifery; Hygiene; and Medical Jurisprudence. 3rd Part: Clinical Examination in Medicine at the Hospital; Clinical Surgical Examination; Examination in Midwifery, consisting of obstetrical operations on the mannequin (doll and model of pelvis); Examination in Operative Surgery, consisting of some of the usual operations on the dead subject, such as Amputation, Ligature of an Artery, &c.; Regional Anatomy on the Dead Body, with Dissections; and Ophthalmology. The first and second parts are theoretical and the third is mainly practical and clinical. The time required for the three examinations seldom exceeds ten days, and is usually less. Candidates have the option of passing each part separately or of taking the three together, and the latter is the usual course; also of demanding a written examination on payment of an additional fee of one guinea for each part, a rule of which candidates rarely or never avail themselves. The examinations, which are *viva voce*, take place on the first Tuesday in November, December, February, May, and June. Candidates should appear with their diplomas at the Secretary's office not later than 2 P.M. on the day preceding the examination. Most of the examiners speak English and those who do not examine through the medium of an interpreter. Great importance is attached to practical knowledge, but candidates must also possess sound theoretical knowledge, the standard required varying with the subject. Pathological and other specimens are not usually shown. There are in England at present over 600 graduates holding this degree, and an English Association of Brussels Medical Graduates has been in existence many years.

Further information may be obtained from Dr. Walter Reeve, 38, Manchester-street, Manchester-square, W.

## THE ARMY, NAVY, AND INDIAN MEDICAL SERVICES.

Consequent upon the issue of the Royal Warrant published in Army Orders dated July 1st, 1898, the Army Medical Staff and the Medical Staff Corps were formed into the Royal Army Medical Corps. Medical officers also have been placed, as regards sick leave of absence on full pay, on the same footing as that laid down for regimental officers. By a Royal Warrant, dated Nov. 10th, 1891, Art. 1208*b* of the Pay Warrant was revised by inserting the words "an officer of our Royal Army Medical Corps" after the words "combatant officer," thus giving medical officers an equal title with combatant officers to reckon time on half-pay towards retirement, when the half-pay has been due to ill-health contracted in the performance of military duty. Under the Royal Warrant of July, 1895, time on half-pay not exceeding a year may under similar circumstances also reckon towards promotion. In the New Royal Warrant it is announced that the Queen has been pleased to approve of the following ranks for the officers of the Royal Army Medical Corps:—Colonel, Lieutenant-Colonel, Major, Captain, and Lieutenant. The Warrant also states that the Medical Staff of the Army shall in future consist of Surgeon-Generals (ranking as Major-Generals). Officers of the Royal Army Medical Corps holding appointments in the Household Troops are to be borne as seconded officers on the establishment of the Royal Army Medical Corps. The substantive rank of the Director-General of the Army Medical Service is that of Surgeon-General.

Admission into the Royal Army Medical Corps and Indian Medical Services is gained as the result of competitive examination. Under special conditions the admission may take place by nomination under the authority of the Secretary of State for War. The number of nominated candidates for the Royal Army Medical Corps is not to exceed in number those admitted for the corps to the Army Medical School by examination. The candidates are nominated by the Secretary of State for War, who invites such governing bodies of public schools of medicine in the United Kingdom or Colonies, as he may think proper, to propose probationers. The Secretary of State for War will from time to time fix the order of precedence and the proportion in which the several schools of medicine shall be offered the nomination of candidates. Candidates for both services must, before being admitted to examination, possess a double qualification to practise Medicine and Surgery and be registered under the Medical Act. They are also now required to produce certificates of having acted as a medical clinical clerk for six months, as surgical dresser for another six months, and of having had not less than three months' instruction at an ophthalmic hospital or the ophthalmic department of a general hospital, including a course on errors of refraction. They must also furnish satisfactory certificates of moral character. A candidate for the Royal Army Medical Corps must be between 21 and 28 years of age, in good mental and bodily health, and must sign a declaration upon honour that he is of pure European descent; he must also state whether he holds, or has held, any commission or appointment in the public services; for the Indian Service a candidate must be between 21 and 28 years of age, of sound bodily health, and a natural-born subject of Her Majesty. Both are examined as to physical fitness by a Board of Medical Officers. The standard of fitness is set forth in Appendix I. of the regulations for admission to the Royal Army Medical Corps. These conditions being satisfied, the candidate is admitted to the competitive examination, which is usually held in London twice a year, in the months of February and August. An entrance fee of £1 is required from each candidate admitted to the competition, and is payable at the conclusion of the candidate's physical examination, if he be pronounced fit. No candidate for the Indian Service will be allowed to compete on more than three occasions. The subjects of examination are divided into *compulsory* and *voluntary*. The former comprise Surgery (1200 marks), Medicine, including Therapeutics and the Diseases of Women and Children (1200 marks), Anatomy and Physiology (600 marks), Chemistry and Pharmacy, and a practical knowledge of Drugs (600 marks). The examination in Medicine and Surgery will be in part practical, and will include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. The eligibility of the candidate for admission into the service is determined by the result of this part of the examination. By an Army Order dated May 1st, 1895, no candidate shall be considered eligible who shall not have obtained at least one-third of the marks obtainable in each of the compulsory subjects, and at least one-half of the aggregate of marks for all the compulsory subjects. The *voluntary* subjects are French (200 marks), German (200 marks), Hindustani (200 marks), and Natural Sciences: (*a*) Physics (300 marks); (*b*) Zoology (300 marks); (*c*) Geology and Physical Geography (300 marks); and (*d*) Botany (300 marks). A candidate may not present himself for examination in more than two of the subjects included under the term "Natural Sciences." A number less than one-third of the marks obtainable in each of the voluntary subjects will not be allowed to count in favour of a candidate who has qualified in the compulsory subjects. Although the results of the examination in voluntary subjects do not affect the question of the eligibility of the candidate for a commission, they influence his position on the list, which is determined by the numbers obtained under the two heads conjointly. A candidate for the Royal Army Medical Corps when submitting his application may also enter for the Indian Medical Service (and *vice versâ*), subject to his satisfying the Secretary of State for India or War that he is eligible under the regulations for that service. The names of the successful candidates for the two services will be placed on one list in order of merit, as determined by the total number of marks each has obtained in both the compulsory and voluntary subjects. So far as the number of vacancies will permit, the successful candidates will be allotted, according to their position on the list, to the service for which they have expressed a preference, subject to their having been accepted prior to examination as eligible for that service. After having passed this examination the successful candidates for both services are sent to the Army Medical School at Netley as "surgeons-on-probation," receiving a daily pay of 8*s*. and certain allowances, to go through a four months' course of instruction in the special duties required of them in the services; or, in the case of the Royal Army Medical Corps, such a course at the Army Medical School as the Secretary of State shall decide on as sufficient. They are required to attend the Royal Army

Medical Corps mess at Netley and to conform to the rules and regulations thereof. The staff of the school consists of four professors, all of them men of high standing in their special departments. The Professorship of Military Medicine is held by Colonel K. Macleod, M.D., I.M.S. Colonel W. F. Stevenson, M.B., is Professor of Military Surgery (as this officer is now in South Africa as P.M.O. of the line of communication and consulting surgeon to the Forces his place in the School is temporarily taken by Major W. Dick, M.B., F.R.C.S. Edin.); Colonel J. L. Notter, M.D., of Military Hygiene; and Dr. A. E. Wright, of Pathology. There is an Assistant Professor for each of these subjects who is an officer of the Royal Army Medical Corps. The lectures on Military Surgery include gunshot and other wounds, transport of sick and wounded, duties of army medical officers in the field, on board troopships and transports, recruiting, and other duties incident to military service. Those on Military Medicine treat of tropical and other diseases to which soldiers are exposed in the course of their service, the mortality and invaliding by disease, in peace and war, at home and abroad, the management of lunatics under the conditions of military service, &c. The course of six lectures on Lunacy and Military Asylum work is delivered at the Netley Lunatic Asylum by Lieutenant-Colonel Chester, M.B. The course of Hygiene comprises the examinations of water and air, the general principles of diet, with the quality and adulterations of food and beverages, the sanitary requirements of barracks, hospitals, and camps, the consideration of the clothing, duties, and exercises of the soldier, and the circumstances affecting his health, with the best means of preventing disease, and instruction in the mode of preparing the various statistical and other returns required of the medical officer. The Pathological course includes bacteriology and demonstrations in physiological chemistry. The surgeons-on-probation are detailed for duty in the wards of the hospital, under the Professors and Assistant Professors of Medicine and Surgery. They, as a rule, spend two months in the medical and two months in the surgical division of the hospital, and there they are taught practically the details of the management of patients in a military hospital, the registration of their diseases, the duties of invaliding, the modes of filling up the regulation statistical returns and other service documents. The surgeons-on-probation are provided with quarters and are extra members of the mess at Netley. They are required to provide themselves with the regulation undress and mess uniform of a lieutenant, but without the sword, sword-belt, dress trousers, forage cap, patrol jacket, and badge of rank. After having passed through the course of instruction they are required to pass a qualifying examination in the subjects taught in the school, and their position on the list of those recommended for commissions is determined by the combined results of the competitive and final examinations. At the close of each session eight prizes are awarded: the Herbert Prize of £20 to the surgeon-on-probation who has obtained the highest number of marks at the Netley examination; the Parkes Memorial Bronze Medal to the one who gains the highest number of marks in the examination in Hygiene; the de Chaumont prize of books to the one who takes second place in Hygiene; the Martin Memorial Gold Medal for the highest number of marks in the examination on Military Medicine; the Montefiore Medal and £21, awarded for Military Surgery; the Montefiore Second Prize, a revolver to the surgeon-on-probation who obtains the second highest number of marks in this branch; the Maclean prize of books for Clinical Medicine and Surgery and for Ward Work; and a prize of books for the highest number of marks gained in Pathology.

At the close of the Netley Session those surgeons-on-probation who have obtained one-third of the possible total of marks in each subject are recommended for commissions as Lieutenants. The surgeons-on-probation of the Royal Army Medical Corps who pass out of the Army Medical School at one qualifying examination will take precedence among each other as lieutenants, as follows:—(*a*) Those appointed by competition according to the order of merit as determined by the combined results of the competitive and qualifying examinations, with priority over any joining under paragraph (*b*). (*b*) Those appointed on nomination, according to the number of marks they individually obtain at the final examination at the Army Medical School, but junior to all those appointed by competition. Commissions will bear the date of the day of passing out of the Army Medical School. The Lieutenants of the British Medical Service pass on from Netley to Aldershot, where they go through a systematic course of instruction in company and ambulance drill and equitation. The officers of the Indian Medical Service do not go to Aldershot, but undergo, whilst at Netley, a course of instruction in company and ambulance drill and in other military duties. The position of the officers of the Indian Service on the list of Lieutenants is determined by the combined results of the London and Netley examinations, and, as far as the requirements of the service permit, they have the choice of commands in India—i.e., Bengal, Panjab, Madras, or Bombay—according to their position in that list. All officers appointed to the Indian Medical Service are now placed on one list. Though ordinarily employed within the limits of the command to which they are posted, they are liable for employment in any part of India. In the *Gazette* dated India Office, August 26th, 1898, it is announced that Her Majesty has deemed it expedient to alter the ranks of the officers of the Indian Medical Service. The same military titles as those conferred on the officers of the Royal Army Medical Corps are announced for the officers of the Indian Medical Service.

*The Royal Army Medical Corps.*—Lieutenants, if duly recommended, are promoted to be Captains on completing three years' full-pay service.

Captains, if recommended by the Director-General, are promoted to be Majors on completing twelve years' full-pay service, of which three must have been passed abroad. Before being promoted they will be required to pass an examination. This examination may be taken at any time after their seventh year of service. It will embrace the following subjects: (*a*) Surgery and Surgical Anatomy; (*b*) Medicine and Pathology; and (*c*) the theory and practice of Hygiene, especially in relation to military requirements, also the regulations regarding the sanitation of garrisons, quarters, hospitals, &c., as well as of camps and hospitals in the field, and of transports, troop and hospital ships; (*d*) duties of medical officers at home and abroad and at sea, as defined in the regulations, also hospital organisation and administration in peace and war, including the transport of sick and wounded by land and sea; (*e*) and the administration, interior economy, command, and discipline of the Royal Army Medical Corps, together with a knowledge of the principles of military law and their practical application (a certificate of proficiency in military law obtained at a garrison class will exempt the holder from examination in the latter).

A certificate will be required from a recognised teacher of surgery in any medical school, at home or abroad, in which operative surgery is taught, showing that the officer has gone satisfactorily through a complete course of operative surgery during the period within which the examination must be taken, and that he is a competent operator.

A report on any subject of a practical professional character, to be selected by the officer himself, and certified to be his own composition and in his own handwriting, will also be required. Considerable importance will be attached to the literary and scientific merits of this report, which must be furnished before the officer completes twelve years' service.

The examinations will be conducted by printed questions, which will enter so far into the subject matter of each head selected for examination as to show that the officer's knowledge has been fully tested.

The questions and answers will be forwarded, under a sealed confidential cover, to the Director-General for transmission to the examiners, who will report to the Director-General as to the competence of the officer examined.

The examination in Medicine and Surgery will be held by two gentlemen appointed by the Secretary of State; that in Hygiene by the Professor of Hygiene, Army Medical School, Netley; and that in Regulations, Duties, Military Law, &c., by an administrative medical officer, nominated for the purpose by the Director-General.

Any higher qualification, such as M.D., F.R.C.S., &c., or any diploma in Hygiene and State Medicine, taken after May 1st, 1890, will not exempt Captains from this examination.

A Lieutenant in the Royal Army Medical Corps promoted to the rank of Captain on account of distinguished

service in the field, shall be eligible for further promotion to the rank of Major, and subsequently to that of Lieutenant-Colonel, when the officer next below him in the rank of Captain or Major respectively becomes eligible by service for promotion to the next higher rank. A Captain so promoted to the rank of Major shall, on the same conditions, be eligible for promotion to the rank of Lieutenant-Colonel. An officer promoted under this article shall not receive any increase of pay in the rank to which he has been so promoted until he becomes entitled thereto by service.

Majors are promoted to be Lieutenant-Colonels on completing twenty years' full-pay service.

The selection of Lieutenant-Colonels for advancement to the grade of Colonel is made on the grounds of ability and merit (on the recommendation of the Commander-in-Chief), in determining which the following points will be considered:—The officer to be so selected must have been favourably reported on by the several military officers under whom he may have served, as set forth in their Annual Confidential reports. He must be physically fit for general service and have served abroad for at least eight years.

A Lieutenant-Colonel, to be eligible for selection as Colonel, must have served abroad at least ten years, of which three must have been in India. All promotions from the rank of Lieutenant-Colonel to that of Colonel, and from the rank of Colonel to that of Surgeon-General, shall be given for ability and merit, upon the selection of the Commander-in-Chief, with the approval of the Secretary of State, and the grounds of such selection shall be stated in writing. In all such cases the amount of service abroad shall be expressly stated. All officers under the rank of Colonel are placed on the retired list at the age of fifty-five, and those of that rank and of the rank of Surgeon-General at the age of sixty, except that in any particular case in which it may be considered necessary for the interest of the public service the age of retirement of a Surgeon-General may be extended for a period not exceeding two years. From recent promotions which have been made it is evident that Colonels who have passed the age of fifty-seven before being selected for the rank of Surgeon-General will be passed over in favour of younger officers who can, by reason of age, serve a full three years in the rank of Surgeon-General.

In cases of distinguished service in the field a medical or departmental officer may, with the concurrence of the Lords Commissioners of our Treasury, be promoted from any departmental or other rank to that next above it and shall, if promoted to another rank having a fixed establishment, remain supernumerary in that rank until the occurrence of the vacancy to which, in the ordinary course, he would have been promoted. The recommendation detailing the services for which the officer may be proposed for promotion shall in such cases be published in the *London Gazette*. An officer so promoted shall not receive any increase of pay in the rank to which he has been promoted until he becomes entitled thereto by service. In a case of distinguished service in the field for which an officer may merit special reward, although there may not be sufficient grounds for his promotion, Our Secretary of State shall have the power, with the concurrence of the Lords Commissioners of Our Treasury, to grant him a higher rate of pay in his rank, but without alteration of his seniority.

*Foreign Service.*—Army Order 85 of June, 1897, states that the periods of service abroad, reckoning from the date of embarkation at home, will (except in the case of a Surgeon-General or Colonel) be five years for all stations abroad (except that on the west coast of Africa), unless such period should be incompatible with the interests of the public service.

*Sick Leave.*—An officer of the Royal Army Medical Corps may be allowed full pay during sick leave of absence on the same conditions as those laid down for regimental officers.

*Service on the West Coast of Africa.*—Officers who entered the Royal Army Medical Corps, or volunteered expressly for service on the West Coast of Africa on or after the 1st of March, 1873, receive double pay while actually serving on the coast. Candidates who present themselves expressly for service in the Royal Army Medical Corps on the West Coast enter under the same qualifications as other candidates, except that they may be admitted up to thirty years of age. After 3 years' actual service on the coast they are eligible for general service. If, however, it be certified by a medical board that any such officer is unfit for further duty on the coast he shall be eligible for general service, though he may not have completed 3 years' service there. For each year's service on the coast an officer is entitled to a year's leave at home. Each year or portion of a year served on the West Coast reckons double towards voluntary retirement or retired pay, provided that an officer has served 12 months on the coast. An officer volunteering for, or ordered to, the West Coast of Africa receives double pay while actually serving on the coast.

*Exchanges.*—An officer of Our Royal Army Medical Corps shall be permitted to exchange with another officer of such corps, or with a medical officer of Our Household Troops, under such conditions and regulations as shall from time to time be made by Us. Exchanges between officers of Our Royal Army Medical Corps under the rank of major and medical officers of Our Indian Military Forces, and transfers of such officers from either of the above services to the other, shall only be permitted subject to the approval of Our Secretary of State for India in Council and on the following conditions:—(1) that the officers have less than seven years' service; (2) that the senior officer exchanging takes the place of the junior on the list and shall not be promoted under Article 359 until the officer next above him has been so promoted; (3) that the junior officer exchanging is placed for seniority next below all medical officers whose commissions have the same date as his own; and (4) that the officer transferred is placed for seniority below all medical officers holding the same rank at the time of his transfer, and shall not be promoted under Article 359 until the officer next above him has been promoted.

*Indian Medical Service.*—Officers on appointment are, when possible, provided with passage to India by troopship; when troopship accommodation is not available passage at the public expense is provided by steamer, or a passage allowance granted if preferred. A charge for messing during the voyage is made at the rate of 2*s.* a day. This payment does not include the cost of liquors, which are charged for as extras. Any officer who may neglect or refuse to proceed to India under the orders of the Secretary of State for India within two months from the date of leaving Netley will be considered as having forfeited his appointment, unless special circumstances shall justify a departure from this regulation. A Lieutenant's commission is dated from the day he passes out of the Army Medical School. Lieutenants are promoted to the rank of Captain on completing three years' full-pay service, Captains to the rank of Major after twelve years' service, and Majors to the rank of Lieutenant-Colonel after twenty years' service. No examination to qualify for promotion is required. All promotions to higher grades are to be given by selection for ability and merit. In case of distinguished service in the field a medical officer may be at once promoted from any rank to the one next above it, remaining supernumerary in the higher rank until he would have been promoted in ordinary course or until selected for further promotion for which he is eligible. The ages for compulsory retirement are the same as those for the Royal Army Medical Corps. Officers of the Indian Medical Service below the rank of Colonel may be granted: 1. Privilege leave under such regulations as may from time to time be in force. 2. Leave out of India for no longer period than one year, capable of extension to two years' absence from duty, on the following pay:—After arrival in India, on first appointment, £200 a year; after the commencement of the fifth year's service for pension, £250 a year; after the commencement of the tenth year's service for pension, £300 a year; after the commencement of the fifteenth year's service for pension, £400 a year; after the commencement of the twentieth year's service for pension, £450 a year; and after the commencement of the twenty-fifth year's service for pension, £500 a year. 3. Leave in India, but for the period of one year only, on full military pay and half the staff salary of appointment. No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted except on specially urgent grounds and without pay. An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence, unless he is specially granted an extension of leave without pay, is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India. Leave may be granted at any time, but solely at the discretion of the

Commanders-in-Chief or of the Local Governments in India in the case of officers not under the direct orders of a Commander-in-Chief. Officers of the Administrative grades may be granted one period of leave not exceeding eight months during their tenure of appointment. An officer on leave is required to join at once on being recalled to duty unless certified by a medical board as unfit to do so.

*Naval Medical Service.*—A candidate must be between the ages of twenty-one and twenty-eight, and must be the son of parents of pure European blood. He must declare his readiness for general service at home or abroad. Candidates will be examined by the Board in the following compulsory subjects: (*a*) Medicine, including Therapeutics and Diseases of Women and Children, 1200 marks; (*b*) Surgery, 1200 marks; (*c*) Anatomy and Physiology, 600 marks; and (*d*) Chemistry and Materia Medica, 600 marks. No candidate is considered eligible who does not obtain one-third of the maximum marks in each of the compulsory subjects. The attention of candidates is especially drawn to the importance of the section of Operative Surgery as a competent knowledge in this subject is essential in order to qualify for a commission. Candidates may be examined in the following voluntary subjects: Zoology, 300 marks; Botany, 300 marks; Physics, 300 marks; Geology and Physical Geography, 300 marks (no candidate will be allowed to present himself for examination in more than two of these subjects); French and German (200 each), 400 marks. A number less than one-third of the marks obtainable in each of these voluntary subjects will not be allowed to count in favour of a candidate who has qualified in the compulsory subjects. The appointments announced for competition will be filled up from the list of qualified candidates, arranged in the order of merit, as finally determined by the total number of marks each has obtained in both the compulsory and voluntary subjects, but should it at any time be considered expedient to grant commissions beyond those periodically competed for it will be competent for the Board of Admiralty to admit annually one candidate proposed by the governing bodies of public schools of medicine in the United Kingdom, or attached to such Colonial Universities as they may think proper, the candidate so proposed to be approved by the Director-General of the Medical Department of the Navy and to be certified by the governing body proposing him to be duly qualified according to the regulations in force for the entry of candidates. Candidates from schools at home will be required to pass a physical and test examination in London which will be arranged for by the Medical Director-General. Colonial candidates will have to pass a physical and test examination before a Board of Naval Medical Officers on the station. Successful candidates immediately after passing the examination will receive commissions as surgeons in the Royal Navy and will undergo a course of practical instruction in Naval Hygiene, &c., at Haslar Hospital. Three prizes of the approximate value of £10 each will be awarded at the close of each session at Haslar to the students who have shown the greatest proficiency. The seniority of surgeons on entry will be determined by the sum total of the marks they obtain at the London examination and those at the conclusion of the Haslar course, and their names will then be placed in the Official Navy List. Surgeons entered without competition will take seniority next after the last surgeon entered at the same time by competition. Surgeons are promoted to be Staff Surgeons after twelve years from date of entry, provided they pass the requisite examination after completion of eight years' service from the date of entry; and Staff Surgeons to Fleet Surgeons after twenty years' service if recommended by the Director-General. Deputy Inspectors-General are promoted by selection for ability and merit from the Fleet Surgeons, and Inspectors-General from the Deputy Inspectors-General having three years' foreign service, or four years' mixed, of which not less than two must have been abroad, or five years' home service in such appointments as preclude foreign service, provided they have not refused to go abroad when called upon to do so. Inspectors and Deputy Inspectors-General are retired compulsorily at 60 years of age (except that if in any particular case the Lords Commissioners of the Admiralty may consider that the interests of the public service will be materially advanced by the further retention of an Inspector-General on the active list, the age for retirement of such Inspector-General may be extended to 62 years of age) and other grades at 55 years of age, and all ranks at any time if an officer has not served for five years. In calculating service for retired pay time on half-pay will be taken as equivalent to one-third service on full-pay. All retired officers are liable, till the age of 55 years, to serve in time of declared national emergency in a rank not lower than that held on retirement.

The following tables, showing the rates of pay and half-pay of the three branches, will probably be acceptable to students who entertain any intention of entering the public service:—

| — | At headquarters, inclusive of all allowances other than for travelling. | Exclusive of allowances. |
|---|---|---|
| *Medical Staff.* | Yearly. | Daily. |
| Director-General, Army Medical Service | £ 1500 | £ s. d. — |
| Surgeon-General (with rank of Major-General) | 1300 | 2 15 0 |
| *Royal Army Medical Corps.* | | |
| Colonel | 900 | 2 0 0 |
| Lieutenant-Colonel— | | |
| After 20 years' service | 650 | 1 5 0 |
| After 25 years' service | 650 | 1 7 6 |
| Lieutenant-Colonel (specially selected for increased pay under Article 362)* | 750 | 1 10 0 |
| After five years in receipt of £1 10*s.* a day | — | 1 13 0 |
| Major or Lieutenant-Colonel | 650 | 1 0 0 |
| After 15 years' service | 650 | 1 2 6 |
| | | Yearly. |
| Captain or Lieutenant | — | 200 |
| Captain— | | |
| After 5 years' service | — | 250 |
| | | Daily. |
| After 10 years' service | — | 0 15 0 |
| Surgeon on probation | — | 0 8 0 |

* A lieutenant-colonel in the Royal Army Medical Corps may be specially selected for increased pay from lieutenant-colonels who have served at least eight years abroad.

SCALE OF RETIRED PAY.

*Army Medical Staff.*

| | |
|---|---|
| DIRECTOR-GENERAL, ARMY MEDICAL SERVICE— | Yearly. £ |
| After 5 years' service as Director-General, and not less than 30 years' service | 1000 |
| After 3 years' service as Director-General, in addition to the retired pay of a Surgeon-General | 100 |
| | Daily. £ *s.* *d.* |
| SURGEON-GENERAL— | |
| After 3 years' service as such | 2 0 0 |
| *Royal Army Medical Corps.* | |
| COLONEL— | |
| After 3 years' service as such | 1 15 0 |
| LIEUTENANT-COLONEL— | |
| After 20 years' service | 1 0 0 |
| After 25 ,, | 1 2 6 |
| After 30 ,, | 1 5 0 |
| LIEUTENANT-COLONEL, after being in receipt of the increased pay allowed by Article 362 for 3 years— | |
| Under 30 years' service | 1 7 6 |
| After 30 ,, | 1 10 0 |
| MAJOR, after 3 years' service as such— | |
| After 20 years' service | 1 0 0 |
| After 25 years' service if his service reckoning for promotion is insufficient to qualify him for promotion to the rank of Lieutenant-Colonel under Article 359 | 1 2 6 |
| LIEUTENANT-COLONEL, MAJOR, CAPTAIN, OR LIEUTENANT— | Gratuity. £ |
| After 10 years' service | 1250 |
| After 15 ,, | 1800 |
| After 18 ,, | 2500 |

Director-General of the Army Medical Service, £1500 yearly; retired pay from £1125 to £830, according to length of service as Director-General.

Under Army Order 63 of May, 1897, officers of the Royal Army Medical Corps attached to a militia unit during preliminary drill and training are entitled to an allowance in aid of mess at the rate of 4*s.* a day.

An officer who, on voluntary retirement, has served for less than three years in the rank from which he retires is only entitled to the gratuity or retired pay assigned to the next lower rank.

Half-pay is also applicable to officers having less than twenty years' service, as follows:—

Lieutenant-Colonel, Major, Captain, or Lieutenant:

| | Daily. |
|---|---|
| Under 5 years' service | £0 6 0 |
| After 5 ,, ,, | 0 8 0 |
| After 10 ,, ,, | 0 10 0 |
| After 15 ,, ,, | 0 13 6 |

*Rates of Retirement for Officers not qualified for Retired Pay on Voluntary Retirement.*

If the unfitness was caused by military service retired pay equal to the half pay of his rank. If not so caused, provided the officer has at least 12 years' service, retired pay equal to the half-pay of his rank, for such period only, not exceeding five years from the date of the officer's retirement from the army, after five years on half-pay under Article 306, as the Secretary of State shall determine according to the merits of the case.

Pay of officers in India:

| | Rs. per mensem. |
|---|---|
| Lieutenant-Colonel ... ... ... ... ... ... ... ... | 1150 |
| ,, after 25 years ... ... ... ... ... ... | 1093 |
| ,, ... ... ... ... ... ... ... ... ... ... | 1056 |
| Major, after 15 years ... ... ... ... ... ... ... | 825 |
| ,, ... ... ... ... ... ... ... ... ... | 789 |
| Captain, after 10 years ... ... ... ... ... ... ... | 500 |
| ,, ,, 5 ,, ... ... ... ... ... ... ... | 450 |
| ,, or Lieutenant ... ... ... ... ... ... ... | 350 |

## ROYAL NAVY.

| Rank. | Daily pay. | Half-pay. | Gratuities and retired pay. Rank. | Gratuity. |
|---|---|---|---|---|
| | £ s. d. | £ s. | | |
| Surgeon .. .. .. | 0 11 6 | 0 6 | Surgeon and Staff. | |
| aft. 2 years' f. p. in rank | .. | 0 7 | *Surgeon: | |
| 4 ,, | 0 13 6 | 0 8 | aft. 8 years' f. p. | £1000 |
| 6 ,, | .. | 0 9 | 12 ,, | 1500 |
| 8 ,, | 0 15 6 | 0 10 | 16 ,, | 2250 |
| 10 ,, | .. | 0 11 | | |
| Staff Surgeon: | | | | |
| on promotion .. .. | 1 1 0 | 0 12 | | |
| aft. 2 years' f. p. in rank | .. | 0 13 | | |
| 4 ,, | 1 4 0 | 0 14 | | |
| 6 ,, | — | 0 15 | | |
| Fleet Surgeon: | | | Fleet-Surgeon. | Daily. |
| on promotion .. .. | 1 7 0 | 0 17 | aft. 20 years' | £1 0 0 |
| aft. 2 years' f. p. in rank | .. | 0 18 | 24 ,, | †1 2 6 |
| 4 ,, | 1 10 0 | 0 19 | 27 ,, | †1 5 0 |
| 6 ,, | .. | 1 0 | 30 ,, | 1 10 0 |
| 8 ,, | 1 13 0 | .. | | |
| Deputy Inspector-General: | | | | |
| on promotion .. .. | 2 2 0 | 1 5 | | 1 15 0 |
| aft. 2 years' f. p. in rank | .. | 1 7 | | |
| 4 ,, | .. | 1 9 | | 2 0 0 |
| Inspector-General .. .. | 2 15 0 | 1 18 | | |

*If the health of a surgeon breaks down before he completes eight years' service, even if his disability be contracted in the service or be due to climatic causes, he is liable to be at once placed on the retired list, receiving a gratuity at the rate of £125 for each year of completed service.

† Including proportion of half-pay time.

The half-pay, retired pay, and gratuities on retirement are liable to reduction in cases of misconduct.

When an officer retires or withdraws *on a gratuity* his widow and children will have no claim to pension or compassionate allowance.

The hospital allowances for Medical Officers at home and abroad in lieu of provisions for themselves and servants and for fuel and light are as follows:—

| Rank. | At home. | Abroad. |
|---|---|---|
| | £ | £ |
| Inspector-Generals of Hospitals .. .. | 85 | 130 |
| Deputy Inspector-Generals .. .. .. | 67 | 112 |
| Fleet Surgeons and Staff Surgeons .. .. | 53 | 112 |
| Surgeons .. .. .. .. .. .. | 39 | 108 |

Medical officers serving afloat receive an allowance of 1*s.* 6*d.* a day in lieu of provisions, fuel, and lights, as laid down in the Queen's Regulations.

The allowance of 5*s.* a day, in addition to full pay, at present granted to the Fleet Surgeon of a flag-ship bearing the flag of a Commander-in-Chief on a foreign station, will be given to the senior medical officer of such ship, being a Fleet or Staff Surgeon; and an allowance of 2*s.* 6*d.* a day to the senior medical officer, being a Fleet or Staff Surgeon, of the ship of a Commodore or of a senior officer commanding a foreign station.

Candidates will do well to notice that the regulations issued to applicants do not put any limit on the amount of half-pay service which they may be compelled to undergo.

Surgeons who have been kept away from England and from naval hospitals in consequence of lengthened periods of service abroad may, if the convenience of the service will admit, be allowed to attend metropolitan hospitals for three months to improve their professional knowledge, and while so employed they will be borne on ships' books and receive the ordinary pay of their rank; but the number is not to exceed 20 in each year.

## INDIAN MEDICAL SERVICE.§

The rate of pay drawn by Lieutenants from the date of passing the final examination at the Army Medical School until arrival in India is 10*s.* a day.

Pay at the above rate is issued in this country up to the date of embarkation, and an advance of two months' pay at the same rate is also made prior to embarkation, which is adjusted in India.

The following are the rates of "Indian pay and allowances" which will be drawn by officers hereafter appointed to the Indian Medical Service:—

| Rank. | Years' service. | Indian pay and allowance per mensem. When not holding an appointment carrying higher pay. Rs. a. p. | A. When not receiving any staff allowance. Rs. a. p. | B. When receiving staff allowance in addition. Rs. a. p. |
|---|---|---|---|---|
| Lieutenant-Colonel (Senior) ... ... ... | | 900 0 0 | | |
| Lieutenant-Colonel .. | 25 and over | 888 12 0 | | |
| Lieutenant-Colonel .. | 20 ,, | 852 3 7 | | |
| Major .. .. .. .. .. | 15 ,, | 677 6 11 | | |
| ,, .. .. .. .. | 12 ,, | 640 14 6 | | |
| Captain .. .. .. | 10 ,, | | 500 0 0 | 450 0 0 |
| ,, .. .. .. | 5 ,, | | 450 0 0 | 400 0 0 |
| Captain and Lieutenant .. .. .. | under 5 | | 350 0 0 | 300 0 0 |

On first appointment they will only come into receipt of "Indian pay and allowances" from the date of their arrival in India.

Officers holding the principal administrative appointments and substantive military charges of the Indian Medical Service receive at present the following consolidated salaries:—

| | Rs. per mensem. |
|---|---|
| Surgeon-General ... ... ... ... ... ... | 2700 to 2200 |
| Colonel ... ... ... ... { from ... | 2250 |
| { to ... ... | 1800 |
| Lieutenant-Colonel in substantive charge of a native regiment ... ... | 1000 or 1100 with Rs. 90 horse allowance in cavalry regiments. |
| Major in substantive charge of ditto | 800 with Rs. 90 ditto. |
| Captain above 5 years' full-pay service in substantive charge of a native regiment ... ... ... ... ... | 600 with Rs. 60 ditto. |
| Captain or Lieutenant under 5 years' ditto in substantive charge of a native regiment... ... .. ... ... | 450 with Rs. 60 ditto. |

The salaries of other substantive medical appointments in the Civil and Military Departments are consolidated and vary from Rs. 1800 to Rs. 460 per mensem.

Qualified officers of the Medical Service are also eligible for appointments in the Assay Department. The salaries of these appointments are from Rs. 600 to Rs. 2250 per mensem.

Officers are required to perform two years' regimental duty in India before they can be considered eligible for civil employment.

Except in the administrative grades and in certain special appointments officers are not debarred from taking private practice as long as it does not interfere with their proper duties.

### RETIRING PENSIONS AND HALF-PAY.

Officers of the Indian Medical Service will be allowed to retire on the following scale of pension, on completion of the required periods of service:—

| | |
|---|---|
| After 30 years' service for pension | £700 per annum + £350 after 5 years' active employment in India as a Surgeon-General, or + £250 per annum after 5 years' active employment as a Colonel. |
| ,, 25 ,, ,, ,, | £500 per annum. |
| ,, 20 ,, ,, ,, | £375 ,, |
| ,, 17 ,, ,, ,, | £292 ,, |

Time (not exceeding one year) passed on temporary half-pay reckons as service for promotion and pension, in the case of an officer placed on half-pay on account of ill-health contracted in the performance of military duty.

Officers of the Indian Medical Service are liable, after retirement on pension before completing 30 years' service, to recall to military duty in case of any great emergency arising, up to 55 years of age.

All officers of the rank of Lieutenant-Colonel and Major are placed on the retired list at the age of 55, and all Surgeons-General and Colonels at the age of 60.

Officers not entitled to pension, when placed on temporary or permanent half-pay, will be granted the British rate of half-pay of their military rank, as under:—

| Rank. | Rates of Half-pay. Per diem. | Per annum. |
|---|---|---|
| | s. d. | £ s. d. |
| Lieutenant-Colonel (Senior) .. .. | 11 0 | 200 15 0 |
| Lieutenant-Colonel .. .. .. .. | | |
| Major .. .. .. .. .. .. | 9 6 | 173 7 6 |
| Captain .. .. .. .. .. .. | 7 0 | 127 15 0 |
| Lieutenant .. .. .. .. .. | 3 0 | 54 15 0 |

INVALID PENSIONS.

An officer who has become incapacitated for further service in India on account of unfitness caused by duty may, after he has been two years on temporary half pay, be granted an Invalid Pension on the following scale:—

| | Per annum. |
|---|---|
| After 16 years' pension service .. .. .. .. | £272 |
| " 15 " " " .. .. .. .. | 252 |
| " 14 " " " .. .. .. .. | 232 |
| " 13 " " " .. .. .. .. | 212 |
| " 12 " " " .. .. .. .. | 192 |

§ No staff or regimental allowance can be drawn until the lower standard examination in Hindustani has been passed. As many lieutenants have been sent to the frontier immediately on arriving in India they have found it impossible to study and pass this examination, and have consequently been doing regimental and other work for Rs. 350 a month. Lately a concession has been granted to medical officers so situated on the frontier, but the rule is still most illiberal and requires alteration.

‖ Officers cannot retire *in India* on half-pay (No. 45, Feb. 28th, 1865).

WOUND PENSIONS.

Officers are entitled to the same allowances on account of wounds and injuries received in action as are granted to combatant officers of Her Majesty's Indian Military Forces holding the corresponding military rank.

FAMILY PENSIONS.

The claims to pension of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being.

The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India.

HONOURS AND REWARDS.

Officers of the Indian Medical Service are eligible for the military distinction of the Order of the Bath and for other Orders, British and Indian, and for good service pensions. Six of the most meritorious officers are named Honorary Physicians and six are named Honorary Surgeons to Her Majesty.

## METROPOLITAN MEDICAL SCHOOLS.[1]

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—The clinical practice of the hospital comprises a service of 744 beds, of which 674 are for patients in the hospital at Smithfield and 70 for convalescent patients at Swanley. Ten house physicians and ten house surgeons are appointed annually. During their first six months of office they act as "junior" house physicians and house surgeons and receive a salary of £25 a year. During their second six months they become "senior" house physicians and house surgeons and are provided with rooms by the hospital authorities and receive £80 a year as salary. A resident midwifery assistant and an ophthalmic house surgeon are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two assistant anæsthetists are appointed annually, and receive salaries of £120 and £100 respectively. An extern midwifery assistant is appointed every three months, and receives a salary of £80 a year. Two assistant electricians are appointed every six months. The clinical clerks, the obstetric clerks, the clerks to the medical out-patients, the dressers to the surgical in-patients and to the out-patients, and the dressers in the special departments are chosen from the students. All the appointments are now free.

A college is attached to the hospital, in which students can reside, subject to the college regulations.

*The Medical School Buildings* include three large lecture theatres, a large dissecting room, a spacious library (containing 13,000 volumes), a well-appointed museum of anatomy, physiology, comparative anatomy, materia medica, botany, and pathological anatomy. The pathological museum is the most complete in the kingdom. There are laboratories for chemistry, physiology, pathology, pharmacology, physics, public health, and biology, giving ample accommodation in every department.

A ground of ten acres has been purchased by the school committee at Winchmore-hill for the use of the Students' Amalgamated Clubs, and all students are expected to become members.

*Instruction in Preliminary Science* is given to University of London students in chemistry, biology, and physics throughout the year.

*Laboratory Instruction for the D.P.H.* is provided during the winter and summer sessions, and elementary instruction in Bacteriology is also given throughout the year.

[1] For Scholarships see p. 703 et seq.

CHARING-CROSS HOSPITAL AND COLLEGE.—Total fees, 110 guineas if paid in a single sum on entry, or 121 guineas if paid in five instalments; the sons of Registered Medical Practitioners pay 100 guineas in one sum or 110 guineas in five sums; for Dental students, 54 guineas, or 60 guineas in two equal instalments. General students pay proportionately lower fees, and are admitted without additional fee to the courses of Clinical Medicine and Surgery and to the practice of the Royal Westminster Ophthalmic Hospital. They alone are entitled to compete for the Scholarships, Gold Medal, Huxley, and Pereira Prizes.

Classes for the Preliminary Scientific Examination of the University of London are held at this Medical School. The fee for the whole course, which begins in October, is 15 guineas. There are also special classes for the practical work for the Department of Public Health and a course in the subject of diseases of tropical climates.

ST. GEORGE'S HOSPITAL.—Students may become Perpetual Pupils by payment of £150 on entering, or of £160 in four annual instalments. Perpetual pupils are entitled to perpetual admission to lectures and demonstrations as well as to the entire medical and surgical practice of the hospital; they may compete for all prizes and exhibitions, may become clinical clerks during six months and dressers during another six months, or longer if required, without fee, may attend midwifery practice, and may compete for all hospital and school appointments without extra charge. Four house surgeoncies and four house physiciancies, and the salaried offices of obstetric assistant, senior and junior anæsthetists, medical registrars (2), surgical registrar, curator and assistant curator of the Museum, besides demonstratorships and a number of junior hospital appointments, are open to perpetual pupils. Students not being perpetual pupils are admitted to lectures, demonstrations, and hospital practice on payment of £50 annually for two years and £20 annually for succeeding years. Such students may become Perpetual in their third year if they wish and if their conduct has been satisfactory.

GUY'S HOSPITAL.—House physicians, house surgeons, assistant house physicians, and assistant house surgeons, obstetric residents, gynæcological assistants, clinical assistants, clerks to anæsthetists, surgeons' and assistant surgeons' dressers, surgical ward clerks, clinical clerks, post-mortem clerks, extern obstetric attendants, and dressers and clerks in the special departments are appointed from among the students upon the recommendation of the medical staff, according to merit and without extra payment. The house physicians, of whom there are four, hold office for six months each. The assistant house physicians, who hold office for three months, attend in the out-patient department four afternoons in the week, and see all the cases not seen by the assistant physician of the day. The house physicians have the care of the patients in the medical wards, and attend to all emergencies arising in the absence of the physicians. They are provided with board and lodging in the college free of expense. The house surgeons, of whom there are four, hold office for six months each, and are provided with board and lodging in the college free of expense. The Surgical Casualty Department is in charge of two assistant house surgeons. The surgeons' dressers are selected from those students who have completed their third winter session and have been most diligent in the junior appointments. They hold office for three or six months. Six are attached to each surgeon, and during their weeks of special duty they are provided with board and lodging in the hospital free of expense. The obstetric residents, four in number, are provided with board and lodging in the college free of expense.

*Higher Examinations.*—Classes are held throughout the year for the Preliminary Scientific Examination of the University of London; and special courses of instruction are provided for students preparing for the Primary and Final Fellowship examination and the intermediate M.B. examinations of Oxford, Cambridge, and London. Two courses of Laboratory instruction for candidates for a Diploma in Public Health are given annually.

*The College.*—The College stands upon a site fronting the east gate of the hospital and is connected with it by a subway. The building serves as a Residential College for Students and at the same time provides accommodation for the Students' Club. The Clubs' Union ground is less than

twenty-five minutes' journey from the Hospital. The new school buildings are now open.

KING'S COLLEGE.—Resident medical officers have rooms at the hospital and commons free; they are selected by examination and hold their appointment for six months or a year. There are three house physicians, two physician accoucheur assistants, and three house surgeons. Sambrooke registrarships, value £50 per annum, are tenable for two years. Clinical assistants senior and junior of the special departments—ophthalmic, ear, and throat. Senior dressers and dressers, clinical clerks, assistant demonstrators of anatomy and physiology, and prosectors are elected by examination, and in consideration of their former work in the medical school as matriculated students. Classes for the science subjects required by the University of London are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

*Laboratories.*—Bacteriology, State Medicine, Pathology, and Neuropathology have special laboratories.

*Resident Chambers.*—There are chambers at King's College available for a limited number of students; rent, including dinner during terms, from £50 to £60 a year.

*Athletic Club.*—All students are entitled to the privileges of the Athletic Club, which manages a large recreation ground of the College at Wormwood Scrubbs.

LONDON HOSPITAL AND COLLEGE.—The hospital has nearly 800 beds in constant use and no beds are closed. Being the only general hospital for East London—i.e., for a million and a half people—the practice is immense. In-patients last year 13,234; out-patients, 189,638; accidents, 20,068; major operations, 2568. Owing to the enormous number of patients more appointments are open to students than at any other hospital. Receiving-room officers, house physicians, house surgeons, &c.: 60 of these qualified appointments are made annually and more than 150 dressers, clinical clerks, &c., appointed every three months. All are free to students of the College. Holders of resident appointments have free board. Twenty-nine scholarships and prizes are given annually. Five entrance scholarships, £120, £60, £35, £30, £20, are offered in September. Special classes are held for the University of London and other higher examinations. Special entries for medical and surgical practice can be made. Qualified practitioners will find excellent opportunities for studying the rarest diseases. Lectures and classes are held throughout the year to suit the requirements of candidates desirous of obtaining the Diploma in Public Health. These courses are recognised both by the Universities of Oxford and Cambridge and by the Examining Board in England. A reduction of 15 guineas is made to the sons of members of the profession. The new laboratories and class-rooms for Bacteriology, Public Health, Operative Surgery, Chemistry, and Biology are now in full use. The new Clubs Union Rooms, Garden, and Fives Court are now open. The Clubs Union Athletic Ground is within easy reach of the hospital. The Metropolitan and other railways have stations close to the hospital and the college.

ST. MARY'S HOSPITAL.—The hospital contains 281 beds, which number will be raised to 381 on completion of the Clarence wing. The new out-patients' department, opened in 1898, with its extensive accommodation and modern equipment, offers exceptional advantages to students for clinical work. The situation of the hospital in the centre of the residential districts of Paddington, Bayswater, and North Kensington renders it especially convenient to students who wish to reside in the immediate vicinity, and a register of approved lodgings is kept in the office or the Medical School. All clinical appointments in the hospital are free to students of the Medical School and the resident medical officers are chosen by competitive examination. Six house physicians, six house surgeons, four obstetric officers, and two resident anæsthetists are appointed in each year and receive board and residence in the hospital. Entrance scholarships in Natural Science, one of £145, two of £78 15*s.*, one of £52 10*s.*, and two of £57 15*s.* (open to students from Oxford and Cambridge), are awarded annually by examination in September.

*Improved Laboratories.*—The Physiological Laboratories have been further extended, and a special physiological lecture room adapted for advanced practical classes has been added. The alterations completed in 1898 provide new laboratories for pathology and bacteriology, a new lecture-room fitted with electric light and every modern improvement for practical classes in these subjects, and a new museum. An enlarged chemical laboratory has been provided and the former chemical laboratory has been adapted to public health courses and for the study of pathological chemistry.

*Special Tuition.*—In addition to systematic courses of lectures and demonstrations special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London without additional fees.

*Preliminary Scientific Course.*—Special classes, including lectures and laboratory work, are held throughout the year.

The composition fee for full students is £140 if paid in one sum or £145 if paid in four instalments. University students who have completed their examinations in Anatomy and Physiology are admitted on payment of a composition fee of 55 guineas (£57 15*s.*) paid in one sum or by payment of an annual fee of 28 guineas (£29 8*s.*) for each year of study prior to graduation in Medicine. Separate courses of lectures, laboratory work, or hospital practice may be taken. The composition fees include membership of the amalgamated clubs. The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

MIDDLESEX HOSPITAL.—The hospital contains 320 beds. There is a special wing for patients suffering from cancer, consisting of four wards, containing 40 beds; here cancer patients are received and attended for a period limited only by the duration of their disease.

*Hospital Appointments.*—All hospital appointments are allotted to students without any extra fee. Eighteen Resident Appointments are annually filled from the pupils of the hospital, each appointment extending over six months.

*The Curriculum* is designed to meet the requirements of the Royal Colleges of Physicians and Surgeons and of the Universities of London, Oxford, Cambridge, &c. Special Classes are held to prepare students for the Preliminary Scientific M.B. (Lond.) Examination and for the Primary Examination or the diploma of F.R.C.S. Eng.

The new school buildings now in regular use provide a much larger dissecting-room, a room for operative surgery, a complete physiological department, spacious pathological and bacteriological laboratories, and extended facilities for the teaching of Chemistry, Physics, Biology, &c.

*A Residential College* to accommodate about 30 students adjoins the hospital. The charge for residence is £8 8*s.*, £7 7*s.*, and £6 6*s.* per term, according to the position of the room. Breakfast, luncheon, and dinner are supplied in the College Hall at a very moderate charge.

*Fees.*—The Composition Fee for the entire curriculum is 135 guineas, or 145 guineas if paid in three instalments. The fee for the Dental Curriculum is 54 guineas, or 60 guineas if paid in two instalments. Students who have completed the study of Anatomy and Physiology or passed the London Preliminary Scientific M.B. Examination are received on special terms.

ST. THOMAS'S HOSPITAL.—The composition fee to Hospital Practice and Lectures may be paid in the following ways:—1. £150 on entrance in one sum. 2. £157 10*s.* in instalments: (*a*) by two payments, £85 on entrance and £72 10*s.* at the beginning of the second year; (*b*) by three payments, £75 at the beginning of the first year, £50 at the beginning of the second year, and £32 10*s.* at the beginning of the third year; and (*c*) by four payments, £65 at the beginning of the first year, £50 at the beginning of the second year, £30 at the beginning of the third year, and £12 10*s.* at the beginning of the fourth year. Students entering at St. Thomas's for Lectures and Hospital Practice of the second and subsequent years pay £130 on entrance, or three instalments of £52 10*s.*, £42, and £42. Students entering for Lectures and Hospital Practice of third and subsequent years pay a composition fee of £80, or £52 10*s.* on entrance and £31 10*s.* one year subsequently. The fee for attendance on the general subjects required of students in Dental Surgery is for the two years £65, or, by instalments, £55 for the first year and £15 for the second year. If certificates for Dental Practice are also required the special fee for that subject has to be paid. Qualified practitioners are admitted by

# The Medical Student's Class Guide.

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1900–1901.

| LECTURES, &c. | ST. BARTHOL. HOSPITAL. | | | CHARING-CROSS HOSPITAL. | | | ST. GEORGE'S HOSPITAL | | |
|---|---|---|---|---|---|---|---|---|---|
| | LECTURERS. | FEES. One Course. | FEES. Unlimited. | LECTURERS. | FEES. One Course. | FEES. — | LECTURERS | FEES. One Course. | FEES. Perpetual. |
| | | £ s. d. | £ s. d. | | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
| **WINTER SESSION.** | | | | | | | | | |
| PHYSIOLOGY | Dr. Klein and Dr. Edkins | 9 9 0 | ... | Mr. Moore | 8 8 0 | ... | Dr. Buckmaster | 8 8 0 | 10 10 0 |
| | | | | | | | Ditto, *Phys. Chem.* | ... | ... |
| BIOLOGY | Dr. Shore | 7 7 0 | ... | Dr. Marett Tims | 5 5 0 | ... | ... | 8 8 0 | ... |
| ANATOMY | Mr. Bruce Clarke | 9 9 0 | ... | Mr. Waterhouse | 7 7 0 | ... | Mr. Jaffrey | 4 4 0 | 10 10 0 |
| | Mr. Lockwood | | | Mr Cantlie (*Applied*) | | | Mr. Grimsdale | | |
| ANATOMICAL DEMONSTRATIONS | Messrs. Bailey, Phillips, Christopherson, Mundy, Rawling, Douglas | 10 10 0 | ... | Mr. Gibbs | 8 8 0 | ... | Mr. Keyser | 7 7 0 | ... |
| | | | | | | | Mr. Evans | | |
| | | | | | | | Ditto, *Osteology* | 7 7 0 | ... |
| | | | | | | | *Histology* | 3 3 0 | ... |
| CHEMISTRY | Dr. Chattaway | 7 7 0 | ... | Dr. Morley | 6 6 0 | ... | Mr. Garoner | 8 8 0 | 10 10 0 |
| | | | | | | | Mr. Addyman | 4 4 0 | ... |
| MEDICINE | Sir D. Duckworth | 7 7 0 | ... | Dr. Bruce | 7 7 0 | ... | Dr. Owen | 8 8 0 | 10 10 0 |
| | Dr. Norman Moore | | | | | | Dr. Penrose | | |
| SURGERY | Mr Marsh | 7 7 0 | ... | Mr. Boyd | 7 7 0 | ... | Mr. Dent | 8 8 0 | 10 10 0 |
| | Mr. Walsham | | | | | | Mr. Turner | | |
| HOSPITAL PRACTICE: | | | | | | | | | |
| PHYSICIANS | Drs. Church, Gee, Sir D. Duckworth, Dr. Hensley, Sir Lauder Brunton, Dr. Champneys (*Obstet.*) | 3 mths. 13 2 6 6 mths. 19 19 0 12 mths 26 5 0 | 36 15 0 | Drs. Green, Bruce and Abercrombie [*To out-patients:* Dr. Willcocks, Dr. Murray, Dr. Mott] | 3 mths. 5 5 0 6 mths. 7 7 0 12 mths. 10 10 0 | Full period 21 0 0 | Dr Ewart Dr. Owen Dr. Penrose Dr. Rolleston *Obst. Phys.:* Dr. Dakin | 12 mths 10 10 0 2 years 21 0 0 | 42 0 0 |
| ASSISTANT PHYSICIANS | Drs. Norman Moore, S. West, Ormerod, Herringham, Tooth. | ... | ... | Dr. Galloway *Pract. Midwifery:* Dr. Eden | ... 3 3 0 | ... ... | Dr. Lee Dickinson Dr. Cyril Ogle Dr. Latham | ... | ... |
| | Dr. Griffith (*Obstet.*) | 3 mths. | | | | | Dr. Stabb (*Obstet.*) | | |
| SURGEONS | Messrs. Willett, Langton, Marsh, Butlin, & Walsham | 13 2 6 6 mths. 19 19 0 | 36 15 0 | Mr. Bloxam Mr. Morgan Mr. Stanley Boyd | 3 mths. 5 5 0 6 mths. | Full period 21 0 0 | Mr. Bennett, Mr. Dent, Mr. Turner Mr. Sheild | 12 months 10 10 0 | 42 0 0 |
| ASSISTANT SURGEONS | Messrs. Cripps, Bruce Clarke, Bowlby, Lockwood, and D'Arcy Power *Ophth. Surgs.:* Mr Vernon Mr Jessop | 12 mths 26 5 0 | ... | Mr. Waterhouse Mr. Wallis Mr. Gibbs | 7 7 0 12 mths. 10 10 0 | Full Med. & Surg. 36 15 0 | *Ophth. Surg.:* Mr. Frost Mr. H. Allingham Mr. Jaffrey Mr. Pendlebury | 2 years 21 0 0 | |
| PRACTICAL SURGERY | Messrs. D'Arcy Power and Waring | 7 7 0 | ... | Mr. Wallis | 5 5 0 | ... | Mr. Sheild | 5 5 0 | ... |
| PRACTICAL MEDICINE | ... | ... | ... | ... | ... | ... | Dr. Lee Dickinson | 5 5 0 | ... |
| SURGICAL PATHOLOGY | Drs. West, Drysdale & Horder Mr. Bowlby | ... | ... | ... | ... | ... | ... | ... | ... |
| CLINICAL MEDICINE | Drs. Church, Gee, Sir D. Duckworth, Dr. Hensley, Sir Lauder Brunton | ... | ... | The Physicians and Assistant Physicians | ... | ... | The Physicians | ... | ... |
| CLINICAL SURGERY | Messrs. Willett, Langton, Marsh, Butlin, & Walsham | ... | ... | The Surgeons and Assistant Surgeons | ... | ... | The Surgeons | ... | ... |
| CLINICAL MIDWIFERY, &c. | Dr. Champneys | ... | ... | Dr. Routh | ... | ... | Drs. Dakin & Stabb | ... | ... |
| DENTAL SURGERY | Mr. Paterson | ... | ... | Mr. Colyer | ... | ... | Mr. H. L. Albert | ... | ... |
| | Mr. Ackery | ... | ... | | | | | | |
| PUBLIC HEALTH | Dr. W. H. Hamer ¶ | 3 3 0 | * | Dr. Whitelegge [*Pub. Health, Pract.:* Drs. Morley & Eyre] | 3 3 0 | ... | Dr. Parkes [*Morbid Anat.:* Dr. Rolleston, £4 4 0] ¶ | 3 3 0 | 4 4 0 |
| **SUMMER SESSION.** | | | | | | | | | |
| MATERIA MEDICA | Dr. Calvert †† | 7 7 0 | ... | Dr. Willcocks | ... | ... | Dr. Ogle | 3 3 0 | 4 4 0 |
| PHARMACOLOGY | Sir L. Brunton †† | | ... | Dr. Willcocks | 4 4 0 | ... | ... | ... | ... |
| MIDWIFERY, &c. | Dr. Champneys | 7 7 0 | ... | Dr. Routh | 4 4 0 | ... | Dr. Dakin | 5 5 0 | 7 7 0 |
| BOTANY | Rev. G. Henslow | ... | ... | Dr. Willcocks | ... | ... | ... | ... | ... |
| MEDICAL JURISPRUDENCE | Dr. Hensley | 4 4 0 | ... | Dr. Abercrombie Dr. Morley (*Tox.*) | 4 4 0 | ... | Dr. Lee Dickinson** | 6 6 0 | 8 8 0 |
| THERAPEUTICS | ... | ... | ... | Dr. Willcocks | ... | ... | Dr. Ogle | 2 2 0 | 3 3 0 |
| PATHOLOGICAL ANATOMY | Dr. Andrewes | 7 7 0 | ... | Dr. Murray | 4 4 0 | ... | Dr. Rolleston | 3 3 0 | 4 4 0 |
| PRACTICAL CHEMISTRY | Dr. Chattaway, Dr. Orton, Mr. Hurtley | 5 5 0 | ... | Dr. Morley Mr. Richards | 5 5 0 | ... | Mr. Gardner Mr. Addyman | 4 4 0 4 4 0 | ... |
| COMPARATIVE ANATOMY | Dr. Shore | 2 12 6 | ... | Dr. Marett Tims | ... | ... | Dr. Buckmaster | 4 4 0 | ... |
| OPHTHALMIC SURGERY | Mr. Vernon Mr. Jessop (in Winter) | 3 3 0 | * | Staff of Royal West. Oph. Hosp. | ... | ... | Mr. Frost [*Tropical Medicine:* Dr. Manson] | ... 3 3 0 | ... |
| OPHTHALMOLOGY | ... | ... | ... | ... | ... | ... | ... | ... | ... |
| PSYCHOLOGY | Dr. Claye Shaw | 3 3 0 | ... | Dr. Percy Smith | 4 4 0 | ... | | | |
| DENTAL SURGERY | Mr. Paterson | 2 12 6 | ... | Mr. Colyer | ... | ... | Mr. H. L. Albert | ... | ... |
| PRACTICAL SURGERY | Messrs. D'Arcy Power and Waring | 7 7 0 | ... | Mr. Wallis | 5 5 0 | ... | Mr. Sheild | 4 4 0 | 5 15 6 |
| PRACTICAL PHYSIOLOGY | Dr. Edkins, Mr. Langdon Brown, & Mr. Bainbridge | 10 10 0 | ... | Mr. Moore | 6 6 0 | ... | Dr. Buckmaster [*Clinical Lunacy:* Dr. Alexander] | 3 3 0 2 2 0 | ... |
| PRACTICAL PHARMACY | Dr. Calvert | ... | ... | Mr. Pearce | 2 2 0 | ... | [*Bacteriology:* Dr. Slater] | 4 4 0 | |
| | Dr. Horton-Smith | | | | | | | | |
| OPERATIVE SURG. (DEMON.) | Mr. D'Arcy Power Mr. H. J. Waring Mr. Bailey ‖ | 6 6 0 | ... | Mr. Wallis | ‡ | ... | Mr. H. Allingham [*Pract. Midw.:* Dr. Stabb] | 6 6 0 3 3 0 | ... |
| DISEASES OF THE EAR | Mr. Cumberbatch | ... | ... | Mr. Waterhouse | ... | ... | Mr. Bull | ... | ... |
| DISEASES OF THE SKIN | Dr. Ormerod | ... | ... | Dr. Galloway | ... | ... | Dr. Cottle | ... | ... |
| ORTHOPÆDIC SURGERY | Mr. Bruce Clarke | ... | ... | Mr. Wallis | ... | ... | Mr. Jaffrey | ... | ... |
| DISEASES OF THE THROAT | Mr. Bowlby | ... | ... | Dr. Willcocks | ... | ... | Mr. Sheild | ... | ... |
| FEE for all Lectures and Hosp. Med. and Surg. Practice | £157 10s.; or, 1st yr., £42; 2nd yr., £42; 3rd yr., £42; 4th yr., £42. | | | £115 10s.; or, 1st Win., £34 13s.; 1st Sum., 2nd Win., 2nd Sum., 3rd Win., £23 2s. each.† | | | £150; or, 1st year, £50; 2nd year, £50; 3rd year, £40; 4th year, £20.§ | | |

* Free to general students of the hospital. † The sons of registered medical practitioners pay 100 guineas in one sum, or 110 guineas in five instalments. Dental students £56 14s., or two instalments of 30 guineas each. A proportionate reduction in their fees will be made to students who have already commenced their education at institutions recognised by the Examining Boards on production of satisfactory certificates on joining the school. ‡ Included in Practical Surgery fee. § Fee for Perpetual Pupils. Reduction is made in the case of students who have already passed certain examinations before joining the school. ‖ And in Winter. ¶ In Summer. ** Including one course of Clinical Insanity. †† Also Therapeutics.

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1900-1901—(CONTINUED).

| LECTURES, &c. | GUY'S HOSPITAL. LECTURERS. | GUY'S HOSPITAL. FEES. First Course. | GUY'S HOSPITAL. FEES. Subseqnt. Course. | KING'S COLLEGE AND HOSPITAL. LECTURERS. | KING'S COLLEGE AND HOSPITAL. FEES. One Course. | KING'S COLLEGE AND HOSPITAL. FEES. Perpetual |
|---|---|---|---|---|---|---|
| **WINTER SESSION.** | | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
| PHYSIOLOGY | Dr. Washbourn and Dr. Pembrey | 10 10 0 | 10 10 0 | Prof. Halliburton, Mr. Beale, and Mr. Lyle | 8 8 0 | ... |
| ANATOMY, DESCRIPTIVE & SURGICAL | Mr. Lane and Mr. Dunn | 10 10 0 | 10 10 0 | Prof. Hughes and Mr. Cadman | 6 6 0 or 9 9 0 inc. Prac. Anatomy | ... |
| ANATOMICAL DEMONSTRATIONS | Mr. Fagge, Mr. Rowlands, and Mr. Swan. | 10 10 0 | 10 10 0 | Prof. Hughes and Mr. A. W. Cadman | 7 7 0 | ... |
| CHEMISTRY (*See note below*) | Mr. Groves and Mr. Wade. | 5 5 0 | 5 5 0 | Prof. Thomson and Mr. Jackson | 8 8 0 | ... |
| MEDICINE | Dr. Taylor and Dr. Hale White | 10 10 0 | 10 10 0 | Dr. Tirard | 8 8 0 | ... |
| SURGERY | Mr. Howse and Mr. Lucas | 10 10 0 | 10 10 0 | Mr. W. W. Cheyne | 8 8 0 | ... |
| PRACTICAL SURGERY | Mr. McGavin | 4 4 0 | 4 4 0 | Messrs. Carless, Burghard, Cheatle, and Beale | 3 3 0 | ... |
| OPHTHALMIC SURGERY | Mr. Higgens | | | | | |
| HOSPITAL PRACTICE — PHYSICIANS | Dr. Taylor, Dr. Hale White, Dr. Pitt, Dr. Perry, Dr. Galabin, and Dr. Horrocks (*obst.*) | 3 months 15 15 0<br>6 months 21 0 0<br>1 year 28 7 0 | Perpetual 42 0 0 | Dr. Hayes (*accou.*) Dr. Ferrier, Dr. Curnow, Dr. Tirard, Dr. Dalton, Dr. Phillips (*accou.*), Sir H. Beevor, Bart. | Summer 8 8 0<br>Winter 11 11 0<br>1 year 18 18 0 | 42 0 0 |
| ASSISTANT PHYSICIANS | Drs. Shaw, Washbourn, Bryant, and Fawcett | ... | ... | Dr. Raymond Crawfurd, Dr. W. Turner | ... | ... |
| SURGEONS | Mr. Howse, Mr. Lucas, Mr. Golding-Bird, and Mr. Jacobson, Mr. Higgens (*oph.*), Messrs. Newland-Pedley, Maggs, & Badcock (*dent.*), Mr. L. Purves (*aural*) | 3 months 15 15 0<br>6 months 21 0 0<br>1 year 28 7 0 | Perpetual 42 0 0 | Mr. W. Rose, Mr. Cheyne, and Mr. Barrow<br>Mr. A. S. Underwood (*surg.-dentist*)<br>Mr. McHardy (*ophthalmic*)<br>Dr. Pritchard (*aural*)<br>Dr. Macdonald (*throat*) | ... | ... |
| ASSISTANT SURGEONS | Messrs. Symonds, Lane, Dunn, Fripp, and Steward Brailey (*oph.*), and Rouw, Pillin, & Hopson (*dent.*) | ... | ... | Mr. Carless, Mr. Burghard, Mr. Cheatle, and Mr. Beale | ... | ... |
| CLINICAL MEDICINE | Drs. Taylor, Hale White, Pitt, and Perry<br>*In Summer:*<br>Drs. Shaw, Washbourn, Bryant, and Fawcett. | ... | ... | Dr. Ferrier, Dr. Curnow, Dr. Tirard, Dr. Dalton | ... | ... |
| CLINICAL SURGERY | Messrs. Howse, Lucas, Golding-Bird, and Jacobson<br>*In Summer:*<br>Mr. Symonds, Mr. Lane, Mr. Dunn, Mr. Fripp, and Mr. Steward | ... | ... | Mr. W. Rose<br>[*Osteology:* Dr. Hughes & Mr. A. W. Cadman] | ... | ... |
| CLINICAL MIDWIFERY | Dr. Galabin, Dr. Horrocks, and Mr. Targett<br>[*Med. Classes:* Dr. Bryant]<br>[*Surg. Classes:* Messrs. Fripp and Steward]<br>[*Obst. Classes:* Mr. Bellingham Smith] | ... | ... | Dr. Hayes & Dr. Phillips<br>[*State Medicine Laboratories:* Dr. W. R. Smith] | ... | ... |
| **SUMMER SESSION.** | | | | | | |
| MATERIA MEDICA & THERAPEUTICS | Dr. Perry | 5 5 0 | 5 5 0 | Dr. Tunnicliffe | 5 5 0 | ... |
| MIDWIFERY &c. | Dr. Galabin | 5 5 0 | 5 5 0 | Dr. Hayes | 5 5 0 | ... |
| BOTANY | Dr. Stevens and | 5 5 0 | 5 5 0 | Mr. Bottomley, Ph.D. | 4 4 0 | ... |
| BIOLOGY | Mr. Swan | 10 10 0 | 10 10 0 | Prof. Halliburton, Mr. Beale, and Mr. Lyle | ... | ... |
| MEDICAL JURISPRUDENCE | Dr. Stevenson | 5 5 0 | 5 5 0 | Dr. W. R. Smith | 5 5 0 | ... |
| DISEASES OF WOMEN | Dr. Galabin | 5 5 0 | 5 5 0 | Dr. Hayes | ... | ... |
| PRACTICAL CHEMISTRY | Mr. Wade and Mr. Richmond | 5 5 0 | 5 5 0 | Prof. Thomson and Mr. H. Jackson | 6 6 0 | ... |
| PRACTICAL PHYSIOLOGY | Dr. Pembrey, Dr. Beddard, and Dr. Spriggs | 10 10 0 | 7 7 0 | Prof. Halliburton, Mr. Beale, and Mr. Lyle | 5 5 0 | ... |
| NEURO-PATHOLOGY | ... | ... | ... | Dr. Ferrier & Dr. Turner | 1 11 6 | ... |
| PRACTICAL BIOLOGY | Dr. Stevens and Mr. Swan | 10 10 0 | 10 10 0 | Mr. Beale, Mr. Lyle | 8 8 0* | ... |
| NATURAL PHILOSOPHY | Mr. Reinold | 5 5 0 | 5 5 0 | Prof. Adams | 2 2 0 | ... |
| COMPARATIVE ANATOMY | ... | 5 5 0 | 5 5 0 | ... | ... | ... |
| PATHOLOGY AND MORBID ANATOMY | Drs. Pitt, Bryant, & Fawcett | 5 5 0 | 5 5 0 | Dr. Dalton | 3 3 0 | ... |
| BACTERIOLOGY | Dr. Washbourn & Mr. Pakes | 2 2 0 | 2 2 0 | Prof. Crookshank | 5 5 0 | ... |
| OPERATIVE SURGERY | Messrs. Fripp and Steward | 5 5 0 | 5 5 0 | Mr. Carless | 5 5 0 | ... |
| MORBID HISTOLOGY | ... | 5 5 0 | 5 5 0 | Dr. Dalton | 5 5 0 | ... |
| OPHTHALMIC SURGERY | ... | 3 3 0 | 3 3 0 | Mr. McHardy | 3 3 0 | ... |
| PSYCHOLOGICAL MEDICINE | Dr. Savage & Dr. Hyslop | 3 3 0 | 3 3 0 | Dr. Ernest White | 4 4 0 | ... |
| DENTAL SURGERY | Mr. Newland-Pedley | ... | ... | Mr. A. S. Underwood | ... | ... |
| AURAL SURGERY | Mr. L. Purves | ... | ... | Dr. Pritchard | ... | ... |
| DEMONST. OF CUTANEOUS DISEASES | Dr. Perry | ... | ... | Dr. Whitfield | ... | ... |
| PUBLIC HEALTH | ... | 3 3 0 | 3 3 0 | Dr. Simpson | 1 1 0 | ... |
| PRACTICAL PHARMACY | Mr. Collier | 3 3 0 | 3 3 0 | Mr. Fairweather | 2 2 0 | ... |
| FEE for Lectures and Hospital Medical and Surgical Practice | | 150 guineas; or by 4 instalments of forty guineas each | | £135; or in two annual instalments of £70; or three of £48; or four of £37 each † | | |

* Elementary Course, £5 5s. † Students having completed their studies in Anatomy, Physiology, and previous subjects, £75.

GUY'S HOSPITAL.—The following classes are also held:—*Biology:* Dr. Willey and Dr. Stevens; *Physics:* Mr. A. W. Reinold; *Bacteriology:* Dr. Washbourn and Mr. Pakes; *Public Health:* Dr. Sykes and Mr. Pakes; *Morbid Anatomy and Pathology:* Dr Bryant and Dr. Fawcett; *Microscopical Pathology:* Mr. Bellingham Smith; *Operative Surgery:* Mr. Fripp and Mr. Steward; *Dental Surgery:* Mr. Newland Pedley; *Psychological Medicine:* Dr. Savage and Dr. Hyslop.

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1900-1901—(CONTINUED).

| LECTURES, &c. | LONDON HOSPITAL. | | | ST. MARY'S HOSPITAL. | | | MIDDLESEX HOSPITAL. | | |
|---|---|---|---|---|---|---|---|---|---|
| | LECTURERS. | FEES. One Course. | FEES. Perpetual. | LECTURERS. | FEES. One Session. | FEES. Perpetual. | LECTURERS. | FEES. One Session. | FEES. Perpetual. |
| **WINTER SESSION.** | | £ s. d. | £ s. d. | | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
| PHYSIOLOGY | Dr. Leonard Hill | 7 7 0 | ... | Dr. Waller | 7 0 0 | ... | Dr. Young | 3 8 0 | ... |
| PRACT. DO. AND HISTOL. | with Mr. Hutchison and Dr. Macleod | 4 4 0 | ... | Dr. Waller | ... | ... | ... | 6 6 0 | ... |
| PATHOL. & MORBID ANAT. | Mr. F. S. Eve, Dr. Hadley, and Dr. Bulloch | 3 3 0 | ... | Dr. Maguire Mr. Plimmer | 4 0 0 | ... | ... | ... | ... |
| ANATOMY, DESCRIPTIVE & SURGICAL. | Mr. T. H. Openshaw and Mr. Keith | 7 7 0 | ... | Mr. E. Lane | 8 0 0 | ... | Dr. Robinson | 9 9 0 | ... |
| ANATOMICAL DEMONSTRATIONS. | Messrs. Keith, Barnard, & Worthington | 7 7 0 | ... | Mr. Sanders Mr. Low | ... | ... | Dr. R. Gladstone | 5 5 0 | ... |
| CHEMISTRY | Mr. Page, Mr. Candy [*Pract.*: Mr. Page] | 7 7 0 5 5 0 | ... | Dr. A. P. Laurie | 6 0 0 | ... | Dr. Kellas | 6 6 0 | ... |
| | [*Experim. Physics*: Mr. Page] | 3 3 0 | | [*Bacteriology*: Mr. H. G. Plimmer] | 2 2 0 | | | | |
| MEDICINE | Dr. Percy Kidd | 7 7 0 | ... | Dr. Phillips | 8 0 0 | ... | Dr. Fowler | 3 8 0 | ... |
| SURGERY | Mr. Mansell Moullin | 7 7 0 | ... | Mr. Page Mr. Pepper | 8 0 0 | ... | Dr. Pasteur ‖ Mr. A. Clark ‖ Mr. Pearce Gould | 3 8 0 | ... |
| PRACTICAL SURGERY | Mr. Roxburgh | 5 5 0 | ... | Mr. Silcock Mr. Collier | 4 0 0 | ... | Mr. J. Murray | 3 8 0 | ... |
| PRACTICAL MIDWIFERY | Drs Herman & Lewers | 5 5 0 | ... | Dr. Gow | 3 0 0 | ... | Dr. Boxall | 5 5 0 | ... |
| PRACTICAL MEDICINE | Dr. Percy Kidd | ... | ... | ... | 3 0 0 | ... | Dr. Wynter | 3 8 0 | ... |
| HOSPITAL PRACTICE: PHYSICIANS | Drs. Mackenzie, Sansom, Gilbart Smith, Warner, P. Kidd, F. J. Smith, Herman (*Obst.*), Lewers (*Obst.*) | 3 mths. 10 10 0 6 mths. 15 15 0 1 year 21 0 0 | 26 5 0 | Dr. Cheadle Dr. Lees Dr. Sidney Phillips *To Out-patients*: Drs. Maguire, Luff, and Caley [*Phys. Accoucheur*: Dr. Handfield Jones *Phys. Accoucheur to Out-patients*: Dr. Gow] | 3 mths. 4 0 0 6 mths. 7 0 0 1 year 12 0 0 ... | 24 0 0 ... | Dr. W. Cayley Dr. Fowler Dr. Pasteur Dr W. Duncan (*Obst.*) Dr. Pringle (*Skin*) | 3 mths. 5 5 0 | ... |
| ASSISTANT PHYSICIANS | Drs. Hadley, Schorstein, Dawson, Head, & Hutchison | ... | ... | | | | Dr. W. E. Wynter Dr. A. F. Voelcker Dr. F. J. Wethered Dr. H. C. Thomson Dr. Boxall (*Obst.*) | ... | ... |
| SURGEONS | Mr. W. Tay (*Oph.*), Messrs. C. Mansell Moullin, H. Fenwick, Eve, J. Hutchinson, jun., Openshaw, Dean, Dr. Woakes, & Mr. T. M. Hovell (*Aur.*) Mr. Dolamore & Mr. Farmer (*Dent.*) | 3 mths. 10 10 0 6 mths. 15 15 0 1 year 21 0 0 | 26 5 0 | Mr. Owen Mr. Page Mr. Pepper *To Out-patients*: Mr. Silcock Mr. J. E. Lane Mr. H. S. Collier Mr. Critchett and Mr. Juler (*Oph.*) | 3 mths. 4 0 0 6 mths. 7 0 0 1 year 12 0 0 | 24 0 0 | Mr. Morris Mr. Andrew Clark Mr. Pearce Gould Mr. W. Hern (*Dental*) Mr. Lang (*Oph.*) Mr. Stephen Paget (*Aural.*) | 3 mths. 5 5 0 | ... |
| ASSISTANT SURGEONS | Mr. Roxburgh Mr. Furnivall Mr. Barnard | ... | ... | Dr. Hill Mr. Morris (*Skin*) Mr. Morton Smale (*Dental*) | ... | ... | Messrs. J. Bland-Sutton, J. Murray, T. H. Kellock, W. S. Nowell (*Asst. Dental*) | ... | ... |
| CLINICAL MEDICINE | The Physicians and Asst. Phys. | ... | ... | Dr. Cheadle | 3 0 0 | ... | The Physicians | ... | ... |
| CLINICAL SURGERY | The Surgeons and Asst. Surg. | ... | ... | Mr. Owen | 3 0 0 | ... | The Surgeons [*Superintend. of P.-M. exam.*: Dr. H. C. Thomson] | ... | ... |
| **SUMMER SESSION.** | | | | | | | | | |
| MATERIA MEDICA | Dr. Warner | 4 4 0 | ... | Dr. Caley | 4 0 0 | ... | ... | ... | ... |
| THERAPEUTICS | and § Dr. Dawson | | | Dr. Caley | ... | ... | Dr. W. E. Wynter | 5 5 0 | ... |
| MIDWIFERY, &c. | Dr. Herman | 5 5 0 | ... | Dr. Handfield Jones | 5 0 0 | ... | Dr. W. Duncan | 5 5 0 | ... |
| BOTANY | Mr. C. Mitchell & Mr. Mudge | 3 3 0 | ... | Dr. W. G. Ridewood | 3 0 0 | ... | No lectures | ... | ... |
| MED. JURISPRUDENCE | Dr. Thresh | 4 4 0 | ... | Dr. Luff | 4 0 0 | ... | Dr. Wethered | 5 5 0 | ... |
| TOXICOLOGY | Dr. F. J. Smith | 4 4 0 | ... | Dr. Luff | 2 2 0 | ... | Dr. Kellas | 2 2 0 | ... |
| PRACTICAL CHEMISTRY | Mr. Page | 5 5 0 | ... | Dr. A. P. Laurie | 4 0 0 | ... | Dr. Kellas | 5 5 0 | ... |
| ORGANIC CHEMISTRY | Mr. Candy | 5 5 0 | ... | Dr. A. P. Laurie | 2 2 0 | ... | ‡ | 4 4 0 | ... |
| BIOLOGY | Mr. Mitchell & Mr. Mudge § ** | 4 4 0 | ... | Dr. W. G. Ridewood | 3 0 0 | ... | Dr. Young§ | 6 6 0 | ... |
| PATHOL. HISTOLOGY | Dr. Bulloch | 3 3 0 | ... | ... | ... | ... | Dr. Voelcker | 3 3 0 | ... |
| BACTERIOLOGY | (and in Winter) | 5 5 0 | | Mr. H. G. Plimmer | 2 2 0 | ... | Mr. Foulerton | ... | ... |
| PATHOLOGY AND MORBID ANATOMY. | Dr. Bulloch, Dr. Hadley, & Mr. Eve | ... | ... | Dr. Maguire Mr. Plimmer | 2 2 0 | ... | Dr. Voelcker | 5 5 0 | ... |
| OPERATIVE SURGERY | Mr. Dean | 5 5 0 | ... | Mr. Silcock and Mr. | ... | ... | Mr. J. Murray | 5 5 0 | ... |
| PRACTICAL PHYSIOLOGY | Dr. L. Hill and Mr. Hutchison | 4 4 0 | ... | Dr. Waller [Collier [*Pub Health*: Dr Luff] | ... | ... | ... | ... | ... |
| HISTOLOGY AND THE MICROSCOPE. | (& in Winter) | ... | ... | Mr. Symes † | ... | ... | Dr. Young | 6 6 0 | ... |
| OPHTHALMIC SURGERY | Mr. Roxburgh | 2 2 0 | ... | Mr. Juler | 3 0 0 | ... | Mr. Lang | ... | ... |
| ANÆSTHETICS | Drs. Hewitt & Probyn Williams | ... | ... | Mr. Davis | 2 2 0 | ... | Mr. G. E. Norton | 1 1 0 | ... |
| AURAL SURGERY | Dr. Woakes | 2 2 0 | ... | Dr. Hill | 3 0 0 | ... | Mr. Stephen Paget | ... | ... |
| DENTAL SURGERY | Mr. Dolamore & Mr. Farmer | 2 2 0 | ... | Mr. Morton Smale | 3 0 0 | ... | Mr. W. Hern (in Winter) | ... | ... |
| DISEASES OF THE SKIN | Dr. S. Mackenzie | ... | ... | Mr. Morris | 3 0 0 | ... | Dr. Pringle | ... | ... |
| PSYCHOL. MEDICINE | Dr. Kennedy Will ¶ | ... | ... | Dr. Hyslop | 3 0 0 | ... | Dr. Mickle | 2 2 0 | ... |
| DISEASES OF THE THROAT | Mr. Mark Hovell | 2 2 0 | ... | Dr. Spicer | 3 0 0 | ... | Mr. Stephen Paget | ... | ... |
| PRACT. PHARM. & DISPENS. | Mr. Morris | 3 3 0 | ... | Mr. Andrews | ... | ... | Mr. Fardon | 3 3 0 | ... |
| | | | | [*Tropical Dis.*: Dr. J. Anderson] | 2 2 0 | | †† [*Pub. Health*: Mr. Foulerton] | | |
| FEE for all the Lectures required by the Colleges & Hall, and Hospital Medical & Surgical Practice | 120 guineas; or 130 guineas, by 3 instalments.* | | | Perpetual studentship £139; or £144 by instalments; 1st year, £46; 2nd year, £40; 3rd year, £30; 4th year, £28. | | | 135 guineas; or 145 guineas by 3 instalments. | | |

* London Hosp.: *Pub. Health and Hygiene*, Dr. Thresh, Mr. Page, and Dr. Bulloch; Summer and Winter. Fee for the whole course for D.P.H., including material and attendance under a medical officer of health, £21. Medical Tutor, Dr. Sequeira; Surgical Tutor, Mr. Barnard. Obstetric Tutor, Dr. Andrews. A reduction of £15 15s. will be allowed from the Perpetual Fee if paid in full, or £5 5s. from each instalment to the sons of medical men. Instructors in *Elementary Clinical Medicine*, Dr. Head and Dr. Hutchinson.

† St. Mary's Hosp.: Med. Tutors, Drs. Caley and Harris; Obst. do., Dr. W. J. Gow; Surgical do., Mr. H. S. Collier—throughout year thrice weekly.

‡ Middlesex Hospital: Medical Tutor, Dr. Wynter; Surgical Tutor, Mr. T. H. Kellock. § In Winter. ‖ In Summer. ¶ Also in Winter, Fee £8 8s.

** Including Practical Biology. †† Fee for the whole course for D.P.H., £21.

## TABULAR LIST OF THE CLASSES, LECTURES, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1900–1901—(CONTINUED).

| LECTURES, &c. | ST. THOMAS'S HOSPITAL. | | | UNIVERSITY COLLEGE AND HOSPITAL. | | | WESTMINSTER HOSPITAL. | | |
|---|---|---|---|---|---|---|---|---|---|
| | LECTURERS. | FEES. One Course. | FEES. Perpetual. | LECTURERS. | FEES. One Course. | FEES. Perpetual. | LECTURERS. | FEES. First Course. | FEES. Subsqt. Course. |
| **WINTER SESSION.** | | £ s. d. | £ s. d. | | £ s. d. | £ s. d. | | £ s. d. | £ s. d. |
| PHYSIOLOGY | Mr. Leathes | 10 10 0 | ... | *Professor E. H. Starling | 3, 5, & 7 gs. | ... | Dr. Gossage and Mr. Canny Ryall | 6 6 0 | 2 2 0 |
| PRACTICAL PHYSIOLOGY AND HISTOLOGY | Mr. Leathes ¶ | 10 10 0 | ... | Mr. Bayliss, Dr. Osborne, and Mr. S. Vincent | 2, 4, & 7 gs. | ... | | 3 3 0 / 6 6 0 | ... / 2 2 0 |
| PHYS. DEMONSTRATIONS | Mr. Leathes | ... | ... | ... | ... | ... | ... | ... | ... |
| ANATOMY, DESCRIPTIVE AND SURGICAL | Mr. Parsons Mr. Robinson | 10 10 0 | ... | Prof. Thane | 10 10 0 | 12 12 0 | Mr. Black | 7 7 0 | 3 3 0 |
| ANATOM. DEMONSTRATIONS.. | Messrs. Parsons and Fisher and Dr. Box | 12 mths. 10 10 0 | ... | Mr. White, Dr. W. L. B. Trotter, and Dr. W. J. Mickle (*Mental Phys.*) | 8 8 0 / 2 2 0 | ... | Mr. Black and Mr. Paton [*Morbid Histology:* Dr. Lazarus-Barlow]* | 5 5 0 / 4 4 0 | 3 3 0 / 2 2 0 |
| PATHOLOGICAL ANATOMY | Dr. Turney and Dr. Perkins (*Practical Course*) | 8 8 0 | ... | Prof. S. Martin (*Pract. Path.*) | 3 3 0 | ... | Dr. Lazarus-Barlow | ... | ... |
| CHEMISTRY | Mr. Dunstan | 7 7 0 | ... | Prof. Ramsay | 7 7 0 | ... | Dr Wilson Hake | 6 6 0 | 2 2 0 |
| MEDICINE | Dr. Sharkey and Dr. Hawkins | 7 7 0 | ... | Prof. G. Vivian Poore | 9 9 0 | 11 11 0 | Dr. de H. Hall Dr. Murrell | 6 6 0 | ... |
| SURGERY | Mr. Pitts and Mr. Anderson | 7 7 0 | ... | Prof. Barker | 7 7 0 | 8 8 0 | Mr. Stonham | 6 6 0 | ... |
| SURGICAL PATHOLOGY | Mr. Shattock | ... | ... | ... | ... | ... | Mr. Paton | ... | ... |
| NATURAL PHILOSOPHY | Mr. Le Sueur | 5 5 0 | ... | [*Chem. Physics:* Prof. Ramsay] | 1 11 6 | ... | [*Physics:* Mr. Somerville] | ... | ... |
| HOSPITAL PRACTICE: | | | | | | | | | |
| PHYSICIANS | Drs. Sharkey, Acland, Hawkins, and Mackenzie / Cullingworth (*Obst.*), | 3 mths. 73 10 0 / 21 0 0 / 6 mths. 26 5 0 / 1 year | | Drs. Roberts, Poore, Barlow, Bradford, and H. Batty Shaw Spencer (*Obst.*), & Crocker (*Skin*) | 12 mths. 36 15 0 / 21 0 0 | | Drs. Allchin, de Havilland Hall, Murrell, Potter (*Obst.*), & Fox (*Skin*) | 3 mths. / 5 5 0 / 6 mths. / 8 8 0 | ... |
| ASSISTANT PHYSICIANS | Drs. Turney, Perkins, Colman, and Box / Dr. Tate (*Obst.*) | 36 15 0 | | Drs. Blacker (*Obst.*), Martin, and Risien Russell | ... | ... | [*Neur. & Alienism:* Dr. Mercier, £2 2s.] Dr. Hebb, Dr. Wills, Dr. Gossage / Dr. Purves Stewart / Dr. Pollock (*Obst.*) | ... / ... | ... / ... |
| SURGEONS | Mr. Clutton, Mr. Anderson, Mr. Pitts, and Mr. Makins / Mr. Lawford (*Ophthal.*) | ... | ... | Profs. A. E. Barker, R. J. Godlee, J. Tweedy, and V. Horsley / Mr. Bilton Pollard / Mr. Spokes (*Dent.*) | ... | ... | Mr. Stonham / Mr. Spencer / Mr. Tubby / Messrs. Glassington & Gardner (*Dent.*) / Mr. Spencer (*Throat*) / Mr. Hartridge (*Ophth. Prac.*) / Mr. Tubby (*Orthopædic*) | 3 mths. / 5 5 0 / 6 mths. / 8 8 0 | ... |
| ASSISTANT SURGEONS | Messrs. Battle, Ballance, Robinson, and Abbott (*Aural*) / Mr. Robinson (*Throat*) / Mr. Fisher (*Ophthal.*) | ... | ... | Mr. R. Johnson / Dr. P. Flemming (*Ophthal.*) | ... | ... | [*Aural:* Mr. de Santi] Messrs. de Santi, Turner, and Paton | ... | ... |
| CLINICAL MEDICINE | The Physicians | ... | ... | The Physicians | ... | ... | The Physicians | ... | ... |
| CLINICAL SURGERY | The Surgeons in rotation | ... | ... | The Surgeons | ... | ... | The Surgeons [*Minor Surg. & Bandaging:* Mr. de Santi]§ | ... | ... |
| CLINICAL MIDWIFERY, &c. | Sir W. MacCormac (*Special Course*) Dr. Cullingworth [*Obstet. Demons.:* Dr. Tate] | ... | ... | Prof. H. R. Spencer and Dr. Blacker [*Bacteriol.*, Dr. D. N. Nabarro] | ... / 4 4 0 | ... | Dr. Potter [*Path. Dem.:* Dr. Lazarus Barlow, weekly]§ | ... | ... |
| **SUMMER SESSION.** | | | | | | | | | |
| MATERIA MEDICA, &c. | Dr. Mackenzie | 5 5 0 | ... | Prof. J. R. Bradford | 6 6 0 | 7 7 0 | Dr. Purves Stewart | 3 3 0 | ... |
| MIDWIFERY, &c. | Dr. Tate | 6 6 0 | ... | Prof. Spencer | 6 6 0 | 7 7 0 | Dr. Potter | 4 4 0 | 1 1 0 |
| BOTANY | Mr. A. W. Bennett | 3 3 0 | ... | Prof. Oliver | 4 4 0 | ... | ... | ... | ... |
| MEDICAL JURISPRUDENCE | Dr. Colman | 5 5 0 | ... | Prof. J. Risien Russell | 5 5 0 | 6 6 0 | Drs. Hebb & Pollock Dr. Wilson Hake (*Tox.*) | 3 3 0 | 1 1 0 |
| PRACTICAL CHEMISTRY | Mr. Dunstan | 6 6 0 | ... | Prof. Ramsay** | 5 5 0 | ... | Dr. Wilson Hake | 4 4 0 | 2 2 0 |
| STATE MEDICINE | Dr. E. Seaton | ... | ... | Prof. Corfield | ... | ... | ... | ... | ... |
| MENTAL DISEASES | Dr. Rayner | 3 3 0 | ... | Dr. Mickle | 1 1 0 | ... | Dr. Mercier‖ | 2 2 0 | ... |
| HYGIENE AND PUB. HEALTH | Dr. E. Seaton | 3 3 0 | ... | Prof. Corfield Dr. Kenwood | 3 3 0 | ... | Dr. M. Copeman | 1 1 0 | ... |
| CLINICAL MEDICINE | The Physicians | ... | ... | As in Winter | ... | ... | As in Winter | ... | ... |
| COMPARATIVE ANATOMY | Mr. Parsons (with Zoology) | 2 2 0 | ... | †Prof. Minchin | 6 6 0 | ... | Dr. Donclan§ | 2 2 0 | ... |
| PATHOL. & MORBID. ANATOMY | Mr. Shattock | 8 8 0 | ... | Prof. S. Martin | 6 6 0 | 7 7 0 | Dr. Lazarus-Barlow | 4 4 0 | 2 2 0 |
| BACTERIOLOGY | Mr. Shattock | ... | ... | Prof. S. Martin | 4 4 0 | ... | Dr. Blaxall | 5 5 0 | ... |
| OPHTHALMIC SURGERY | §Mr. Lawford | 3 3 0 | ... | †Prof. J. Tweedy | 2 2 0 | ... | †Mr. Hartridge | 1 1 0 | ‡ |
| DENTAL SURGERY | Mr. Truman | ... | ... | †Mr. Spokes | ... | ... | Mr. Glassington | 2 2 0 | ‡ |
| PRACTICAL SURGERY | Mr. Ballance Mr. Battle | 6 6 0 | ... | †Mr Bilton Pollard Mr. Johnson | 6 6 0 | ... | Mr. Stonham, Mr. de Santi | 5 5 0 | ... |
| PRACTICAL MEDICINE | Dr. Perkins Dr. Box | 3 3 0 | ... | ... | ... | ... | Dr. Wills | 3 3 0 | ... |
| ELEMENTARY BIOLOGY | §Mr. Parsons | 6 6 0 | ... | Prof. Minchin | 4 4 0 | ... | Dr. Donclan§ | 4 4 0 | ... |
| PRACTICAL OBSTETRICS | Dr. Tate | 3 3 0 | ... | ... | ... | ... | Dr. Rivers Pollock§ | ... | ... |
| OPERATIVE SURGERY | Mr. Makins Mr. Battle | 5 5 0 | ... | *Mr. Pollard and Mr. R. Johnson | 5 5 0 | ... | Mr. Stonham§ | 4 4 0 | 2 2 0 |
| PRACTICAL PHARMACY | Mr. White | 3 3 0 | ... | Mr H. Wilson | 3 3 0 | ... | Mr. Tanner | 2 2 0 | ... |
| FEE for Lectures & Hospital Practice | £150; or by two instalments, £85 and £72 10s.; or by four instalments, £65, £50, £30, and £12 10s. | | | | £141 15s.; or by instalments, £68 5s., £52 10s., and £26 5s. | | 110 guineas; or two instalments of 60 guineas each; or six instalments of 25 guineas and 20 guineas alternately. | | |

In Summer. † In Winter. ‡ Free to students of the hospital. Winter and Summer. Lectures, Winter; Demonstrations, Summer.
¶ Practical Physiology, Winter; Histology, Summer. ** Organic Chemistry, £3 3s

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE LONDON HOSPITALS AND MEDICAL SCHOOLS FOR THE SESSION 1900-1901— (CONTINUED).

| LECTURES, &c. | LONDON SCHOOL OF MEDICINE FOR WOMEN AND ROYAL FREE HOSPITAL. | | |
|---|---|---|---|
| | | FEES. | |
| | LECTURERS. | One course. | Unlimited. |
| **WINTER SESSION.** | | | |
| PHYSIOLOGY | Dr. Brodie | 8 8 0 | ... |
| ANATOMY, DESCRIPTIVE AND SURGICAL | Mr. Stanley Boyd | 8 8 0 | ... |
| ANATOMICAL DEMONSTRATIONS | Miss F. Stoney<br>Miss Flint | 8 8 0 | ... |
| CHEMISTRY | Miss Evans | 8 8 0 | ... |
| PHYSICS | Miss E. A. Stoney | 6 6 0 | ... |
| BIOLOGY | Mr. G. P. Mudge | 10 10 0 | ... |
| MEDICINE | Miss Cock<br>Dr. J. W. Carr | 8 8 0 | ... |
| SURGERY | Mr. James Berry | 8 8 0 | ... |
| PATHOLOGY AND MORBID ANATOMY | Dr. Andrewes | 5 5 0 | ... |
| PRACTICAL TOXICOLOGY | Mr. Bodmer | 2 2 0 | ... |
| PUBLIC HEALTH | Dr. Simpson | 2 2 0 | ... |
| PRACTICAL SURGERY | Mr. Roughton<br>Mr. Evans | 1 11 6 | ... |
| HOSPITAL PRACTICE: | | | |
| PHYSICIANS | Dr. West<br>Dr. Sainsbury<br>Dr. Hayes | ...<br>...<br>... | £35, or in 3 instalments of £15, £15, £10. |
| ASSISTANT PHYSICIANS | Dr. Carr<br>Dr. Crawfurd<br>Dr. Phear | ...<br>...<br>... | |
| SURGEONS | Mr. Barrow<br>Mr. Berry<br>Mr. Dodd<br>Mr. Battle | ...<br>...<br>...<br>... | |
| ASSISTANT SURGEON | Mr. Roughton<br>Mr. Evans | ...<br>... | Three months, £6 6s. |
| CLINICAL MEDICINE | The Physicians and Assistant Physicians of the Royal Free Hospital | ... | ... |
| CLINICAL SURGERY | The Surgeons and Assistant Surgeons of the Royal Free Hospital | ... | ... |
| CLINICAL MIDWIFERY | ... | ... | ... |
| **SUMMER SESSION.** | | | |
| MATERIA MEDICA AND THERAPEUTICS | Dr. Sainsbury | 5 5 0 | ... |
| BIOLOGY (*Continuation of Winter Course*) | Mr. G. P. Mudge | ... | ... |
| PRACTICAL PHYSICS | Miss E. A. Stoney | ... | ... |
| MEDICAL JURISPRUDENCE | Dr. Dupré,<br>Mrs. Dowson | 5 5 0 | ... |
| TROPICAL MEDICINE | Dr. Patrick Manson | 2 2 0 | ... |
| PRACTICAL CHEMISTRY | Miss Boole | 7 7 0 | ... |
| PRACTICAL PHYSIOLOGY | Dr. Brodie | ... | ... |
| BACTERIOLOGY | Mr. Roughton | 2 2 0 | ... |
| MIDWIFERY AND GYNÆCOLOGY | Mrs. Scharlieb | 8 8 0 | ... |
| OPERATIVE SURGERY | Mr. Stanley Boyd | 5 5 0 | ... |
| MORBID HISTOLOGY | Dr. Brodie | ... | ... |
| OPHTHALMIC SURGERY | Miss Ellaby | 2 2 0 | ... |
| PSYCHOLOGICAL MEDICINE | Dr. Mercier | 2 2 0 | ... |
| DENTAL SURGERY | Mr. Todd | ... | ... |
| AURAL SURGERY | Mr. Roughton | ... | ... |
| DEMONSTRATIONS OF CUTANEOUS DISEASES | Mr. Evans | ... | ... |
| VACCINATION | Miss Thorne | 1 1 0 | ... |
| PRACTICAL PHARMACY | Mrs. Clarke Keer | 1 1 0 | ... |
| FEES for School and Hospital Medical and Surgical Practice. | £135, or in four instalments: 1st year, £56; 2nd year, £40; 3rd year, £30; 4th year, £10. | | |

a joint ticket to the practice of nine hospitals on terms which may be ascertained from the medical secretary.

UNIVERSITY COLLEGE, LONDON. — *Composition fees.* — 1. For the entire medical education required by the Examining Board in England and the Society of Apothecaries, 135 guineas, if paid in one sum at the commencement of the course; 140 guineas if paid by instalments, as follows—first year, 65 guineas; second year, 50 guineas; third year, 25 guineas. 2. For those students who do not require to attend Chemistry, Pharmacy, and Elementary Biology at a medical school (under the regulations of the Examining Board in England) the fee will be—117 guineas, if paid in one sum; 122 guineas, if paid by instalments, as follows—first year, 55 guineas; second year, 40 guineas; third year, 27 guineas. 3. For the whole course of instruction for the Intermediate Examination in Medicine of the University of London, 55 guineas (paid in one sum). 4. For the course of instruction for the Final M.B. Examination of the University of London, 76 guineas, if paid in one sum; 78 guineas, if paid by instalments, as follows—first year, 45 guineas; second year, 33 guineas. 5. Composition fee for Dental Students, 65 guineas, or exclusive of Chemistry, Practical Chemistry, Physics, and Materia Medica, 50 guineas. 6. Composition fee for the whole course of instruction for the Preliminary Scientific (M.B.) Examination of the University of London, 35 guineas.

Eight house physicians, six house surgeons, four senior and eight junior obstetric assistants and two ophthalmic assistants are selected annually by examination from among the senior students. The house physicians and house surgeons reside in the hospital for a period of six months, and the senior obstetric assistants for three months, receiving free board and lodging.

Several professors and other gentlemen connected with the College receive students to reside with them; and in the office of the College there is kept a register of persons unconnected with the College who receive boarders into their families; among these are several medical gentlemen and clergymen.

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WESTMINSTER HOSPITAL. — The hospital contains upwards of 200 beds. There are separate departments for Diseases of the Eye, Ear, Skin, Teeth, and Throat, for Orthopædics, and for Diseases of Women, and a special ward for Children. The Anatomical Museum is open to the students. There are also Pathological and Materia Medica Museums.

A medical and a surgical registrar, each with a salary of £40, are appointed annually. Two house physicians, two house surgeons, and a resident obstetric assistant are appointed for six months after examination, and are provided with rooms and commons; also two assistant house surgeons with commons only. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students of the hospital.

*Preliminary Scientific.*—Special classes are held in the subjects of this examination—Chemistry, Dr. Hake; Physics, Mr. Somerville; Biology, Dr. Donelan. The extra fee to a general student is 12 guineas.

*Intermediate M.B.*—Advanced Physiology and Histology, Dr. Gossage; Advanced Anatomy, Mr. Turner; Organic Chemistry, Dr. Hake; Materia Medica, Dr. Purves Stewart.

*D.P.H.*—The course of Laboratory Instruction may now be taken. Physics, Mr. Somerville; Chemistry, Dr. Hake; Bacteriology, Dr. Blaxall. Fee: 12 guineas for three months, 20 guineas for six months.

*Bacteriology.*—A course in General Bacteriology is given by Dr. Blaxall. Fee £5 5*s.*

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LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8 Hunter-street, Brunswick-square, W.C.—The fee for the whole medical course is £125 in one sum, or £135 in four instalments. This entitles students to attend all necessary lectures and practical classes as well as the medical and surgical practice of the hospital, and to hold clerkships and dresserships in the in-patient and out-patient departments. Students after qualification can hold the post of clinical assistant, anæsthetist and assistant anæsthetist, medical and surgical registrar, museum curators and demonstrators in the departments of Anatomy, Physiology, and Chemistry. Students can also attend the in-patient and out-patient practice of the New Hospital for Women.

In addition to the list of Scholarships tabulated in another column three Evans Prizes of £3 3*s.*, £2 2*s.*, and £1 1*s.* are given on the results of the class examination in midwifery and two Durham Prizes, value £5 and £3, are given on the results of the class examination in gynæcology. The Evans Prize for Operative Midwifery, value £5 5*s.*, is awarded yearly. There is also a small fund from which assistance can occasionally be given to students and to graduates who specially require pecuniary help. Honoraria from the Royce Memorial Fund are given to the assistant

anæsthetists at the Royal Free Hospital. Prizes and Certificates of Honour are awarded in each class at the end of the session.

Special classes for the Preliminary Scientific examination of the University of London are held. The teaching in these classes has been greatly extended. The fee for the whole course is 20 guineas. Special courses of instruction in Anatomy, Physiology, and Chemistry are provided for students preparing for the Intermediate M.B. Examination of the University of London. The third wing, which completes the re-building of the School, will be opened in October. It comprises library, museums, common room, and residence for 17 students.

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COOKE'S MEDICAL SCHOOL, London.—The school is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half-a-dozen students in the course of the year; these have special advantages both as regards Anatomy and Physiology. Charges are but slightly in excess of current charges. Particulars forwarded on application. By decision of the various examining bodies gentlemen rejected at their Anatomical and Physiological Examinations (Second Conjoint, &c.) can get signed up for the supplementary work they are required to put in before re-examination. The school is also recognised for the special dissections for the Fellowship of the Royal College of Surgeons. The operations of surgery are performed on the dead body; such courses are recognised for army promotion and the Royal College of Surgeons. The school possesses a good collection of physiological and chemical apparatus, and gentlemen preparing for the higher examinations receive special instruction in the more difficult subjects.

[Tropical Medicine is dealt with in the Students' Number of THE LANCET for 1899-00, page 695, *et seq.*]

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## METROPOLITAN ANCILLARY SCHOOLS AND HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

BETHLEM ROYAL HOSPITAL.—This hospital is open for the admission of two Resident House Physicians who have recently obtained their diplomas to practise Medicine and Surgery. They will be permitted to reside in the hospital for a term generally not exceeding six months, and will be provided with apartments, complete board, attendance, washing, and an honorarium of 12 guineas per quarter. They will be under the direction of the Resident Physician, and will be elected by the Committee from candidates whose testimonials appear to be most satisfactory. The students of certain specified London Medical Schools receive Clinical Instruction in the wards of the hospital, and qualified practitioners may attend for a period of three months on payment of a fee. Lectures are also given in connexion with the London Post-graduate Course.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Four House Physicians reside in the hospital for a period of six months. Pupils are admitted to the practice of the hospital: terms, £1 1*s.* for one month; three months, £2 2*s.*; perpetual, £5 5*s.* Lectures and Clinical Demonstrations are given throughout the year by members of the medical staff. The next course will commence in October. Clinical Assistants are appointed to the Assistant Physician in the out-patient department and Clinical Clerks to the Physician in the wards. The hospital has been recognised by the Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. The medical practice of the hospital is also recognised by the University of London, the Apothecaries' Society, and the Army and Navy and Indian Medical Boards. The hospital contains 321 beds in the two buildings.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park.—During the past year 1021 in-patients have been treated in the wards, and the large number of 32 810 cases since the opening of the wards in 1855. The number of out-patients treated during 1899 was 15,260, and 614,207 since the commencement of the institution in 1848. Information as to medical instruction can be obtained on application to the Secretary of the Clinical Sub-committee at the hospital. Consulting Physicians: Dr. E. L. Birkett and Dr. J. C. Thorowgood. Consulting Surgeon: The Rt. Hon. Lord Lister. P.R.S. Physicians: Drs. Eustace Smith, G. A. Heron, Vincent D. Harris, E. Clifford Beale, Harrington Sainsbury, and T. Glover Lyon. Surgeon: Mr. J. F. C. H. Macready, F.R.C.S. Assistant Physicians: Sir Hugh R. Beevor, Bart., and Drs. W. J. Hadley, E. H. Colbeck, Arnold Chaplin, Hugh Walsham, and Wilfred J. Harris.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's-inn-road.—The hospital contains accommodation for 17 in-patients, and has a very extensive out-patient department, which is open to all medical practitioners and students for the purpose of clinical demonstration and instruction during the hours of the surgeons' visits. During the past year over 8000 out-patients (involving 50,000 attendances) and 300 in-patients were treated. Fee for three months' attendance, 3 guineas; for six months, 5 guineas. A course of lectures on the special diseases treated at this hospital is delivered during the winter months by members of the staff. As an evidence of the interest excited by these lectures it may be mentioned that last year there were over 1000 attendances at the series with an average of 50 at each lecture. The date of these lectures is announced in the medical journals prior to their commencement. They are free to qualified practitioners and advanced students of medicine. Considerable attention is given to scientific work, particularly with regard to Bacteriology of the ear and respiratory passages, for which a special department has been inaugurated. Operation days: in-patients, Tuesday, at 2 P.M.; out-patients, Tuesday and Friday, at 2 P.M. Consulting Surgeons: Mr. Thomas Nunn and Mr. Lennox Browne. Surgeons: Dr. Arthur Orwin, Dr. Dundas Grant, and Dr. Percy Jakins. Physician and Pathologist: Dr. Wyatt Wingrave. Assistant Surgeons: Dr. Holloway, Mr. Nourse, and Dr. Abercrombie. Bacteriologist: Mr. St. George Reid. Dental Surgeon: Mr. George Wallis. Anæsthetist: Mr. W. Hotten George. Defects of Speech: Mr. William Van Praagh. In addition the following appointments are open to qualified members of the profession:—Assistant Registrar, tenable for twelve months; and twelve Clinical Assistants, tenable for six months. Secretary: Mr. Richard Kershaw.

THE HOSPITAL FOR WOMEN, Soho-square, W.—In connexion with this institution there has been for some years a well-organised Clinical Department, which has been enlarged under the title of the London School of Gynæcology. To meet the want increasingly felt by medical men of an accurate knowledge of the ordinary diseases of women gentlemen are appointed to act as clinical assistants to the physicians and surgeons seeing out- and in-door patients. The appointments are nominally "open to qualified medical men and to students of medicine after their fourth year," but in the selection of candidates preference is naturally given to gentlemen already engaged in practice. The large number of out-patients affords exceptional opportunities for practical instruction in the use of gynæcological instruments and for the study of diseases peculiar to women. Demonstrations are given in the theatre on Mondays and Thursdays at 2 P.M. Fee for one month £3 3*s.*; for the three months' course and certificate £8 8*s.* Any further information can be obtained by writing to the Dean at the hospital.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road. (Established 1814.)—This hospital has been enlarged by the addition of a very complete out-patients' department, and also by the erection of a new wing, which provides accommodation for 80 in-patients. Expenditure for 1899, £7491; income (including legacies, £1633), £8363. The attendance of out-patients averages 26,000 annually.

ROYAL EAR HOSPITAL, Soho. (Founded 1816.)—Courses of instruction of six weeks' duration in Diseases of the Ear and Nose are given by the members of the staff throughout the year. Students can attend one or more surgeons, the fee for each surgeon's course being one guinea. The teaching is of a practical character, and the number of students is limited. The next series of classes will commence on Oct. 1st. For information address the Honorary Secretary of the Medical Board.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Consulting Physician: Sir S. Wilks, Bart. Physicians: Drs. R. Burnet, E. C. Beale, C. E. Beevor, H. W. Syers, A. Morison, and T. J. Horder. Obstetric Physician: Dr. Blacker. Surgeons: Messrs. J. Macready, H. Allingham, P. T. B. Beale, G. B. M. White, and E. C. Stabb. Ophthalmic Surgeon: Mr. A. S. Morton. Ear, Throat, and Nose Surgeon: Mr. W. R. H. Stewart. Skin Department: Dr. Whitfield. Dental Surgeon: Mr. Norman

Bennett. This hospital is now recognised by the Examining Board in England by the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the Medical Curriculum. The hospital contains 159 beds, which are now all occupied. The large rectangular and circular wards, each of which contains 20 beds, the operation theatre, out-patient, general and special, and the pathological departments, have all been erected since 1887. They are specially designed with a view of offering the greatest facilities for clinical work, and contain all the most recent and approved hygienic and antiseptic requirements for the proper care of the sick and for the treatment of disease. Medical practitioners are cordially invited to see the general and special practice of the hospital. Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments and may receive certificates at the end of their terms of office. Further particulars from Peyton T. B. Beale, F.R.C.S., Honorary Secretary Medical Committee, 61, Grosvenor-street, W.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, N.W.—Physicians for In-patients: Miss Cock, M.D., and Miss Walker, M.D. Surgeons for In-patients: Mrs. Scharlieb, M.D., M.S., and Mrs. Boyd, M.D. Physicians and Surgeons for Out-patients: Miss Webb, M.B., Miss Macdonald, M.B., and Miss Aldrich Blake, M.D., M.S. Children's Department: Mrs. Flemming, M.D. Ophthalmic Surgeon: Miss Ellaby, M.D. Assistant Physicians for Out-patients: Miss Vaughan, M.D., Miss Sturge, M.B., and Miss Thorne, M.D. Physician for Maternity Department: Miss Harris, M.B. Anæsthetist: Mrs. Keith, L.R.C.P. A considerable number of the students hold posts in the New Hospital under the visiting staff, and in return for much valued clinical teaching they do the work assigned to students in the wards of a general hospital. Secretary: Miss M. M. Bagster.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W. (Established 1873)—Physicians: Dr. Fenwick, Dr. Parkinson, and Dr. Addinsell. Surgeon: Dr. W. J. Collins, F.R.C.S. Dental Surgeon: Mr. A. Alexander. The hospital contains 110 beds. The in-patients in 1899 were 1357, and the out-patients and casualties numbered 20,873 new cases. The medical and surgical practice of the hospital is open to students and practitioners. Special departments for Ophthalmology and Gynæcology. Operations: Mondays and Thursdays, 3.30 P.M. Classes will be held during the winter and summer sessions for students preparing for the final examinations at the Colleges and the Universities. Appointments, vacancies for which are advertised in the medical journals: Medical and Surgical Registrars and Pathologist; Resident Medical Officer and Assistant Resident Medical Officer. For particulars as to hospital practice and classes apply at the hospital to Dr. W. J. Collins.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—The hospital, with the Finchley branch, contains 200 beds and cots. The physicians attend every Monday, Tuesday, Wednesday, and Friday at 2 P.M. In- and out-patient practice and electrical-room treatment at that hour. Physicians: Drs. Hughlings Jackson, Buzzard, Bastian, Sir William Gowers, D. Ferrier, Ormerod (physician for out-patients), Beevor, Tooth, James Taylor, and J. S. Risien Russell. Assistant Physicians: Drs. Aldren Turner and Batten. Surgeons: Messrs. Victor Horsley and C. A. Ballance. Ophthalmic Surgeon: Mr. Marcus Gunn. Aural Surgeon: Mr. A. E. Cumberbatch. Laryngologist: Sir Felix Semon. Anæsthetist: Dr. R. T. Bakewell. Pathologist: Dr. Collier. Registrar: Dr. Buzzard. House Physicians: Dr. Bramwell and [vacant]. The hospital has been recognised by the Conjoint Board for England as a place where part of the fifth year may be devoted to clinical work. All communications concerning clinical appointments, lectures, and hospital practice should be addressed to the Secretary and Director at the hospital.

QUEEN CHARLOTTE'S LYING IN HOSPITAL AND MIDWIFERY TRAINING SCHOOL, Marylebone-road, N.W.—Consulting Physician: Dr. George B. Brodie. Consulting Surgeon: Sir William Mac Cormac. Physicians to In-patients: Dr. W. S. A. Griffith, Dr. W. Rivers Pollock, and Dr. W. J. Gow. Physicians to Out-patients: Dr. T. W. Eden, Dr. C. Hubert Roberts, and Dr. Arthur F. Stabb. This hospital, which has been recently again enlarged and in which many important improvements are being carried out, receives over 1100 patients annually, besides having a large out-patient department. Medical pupils are received at all times of the year. Pupils have unusual opportunities of seeing obstetric complications and operative midwifery, on account of the very large number of primiparous cases—nearly three-fourths of the total admissions. Clinical instruction is given on the more important cases which present themselves. Certificates of attendance at this hospital are recognised by all Universities, Colleges, and licensing bodies. Pupil midwives and monthly nurses are received and specially trained. Fees: Medical Students, £8 8*s.* for four weeks; Qualified Medical Practitioners £8 8*s.* for four weeks. Pupil Midwives, £26 5*s.* for three months (including board and lodging); Pupil Nurses, £15 15*s.* for twelve weeks (including board and lodging). The new residence for students and qualified practitioners is opposite the hospital, with which it is in telephonic communication. Terms for residence and full board 35*s.* per week. For further particulars application should be made to Mr. Arthur Watts, Secretary, at the hospital.

THE SEAMEN'S HOSPITAL SOCIETY.—There are two hospitals—the *Dreadnought* Hospital at Greenwich (225 beds) and the Branch Hospital in the Royal Victoria and Albert Docks, E. (50 beds). There are also two Dispensaries, one in the East India Dock-road and the other at Gravesend, which supply patients to the hospitals. The London School of Tropical Medicine, with its laboratories, museum, library, &c., is within the grounds of the Branch Hospital. Honorary medical staff of the hospitals:—Consulting Physician: Dr. Robert Barnes. Consulting Surgeon: Mr. W. Fowler. Physicians: Dr. P. Manson, C.M.G., F.R.S., Dr. R. Tanner Hewlett, Dr. Guthrie Rankin, Dr. Andrew Duncan. Physician to Out-patients: Dr. Oswald Baker. Surgeons: Mr. W. Johnson Smith, Mr. William Turner, Mr. James Cantlie. Surgeon to Out-patients: Mr. J. Brian Christopherson. Ophthalmic Surgeon: Mr. L. Vernon Cargill. The lecturers in the school are Dr. P. Manson, C.M.G., F.R.S., Dr. Andrew Duncan, Dr. Oswald Baker, Dr. L. Westenra Sambon, Mr. Malcolm Morris, Dr. R. Tanner Hewlett, Mr. James Cantlie, Mr. E. Treacher Collins, and Dr. W. J. Simpson. Appointments.—There is a House Physician and a House Surgeon at the *Dreadnought* Hospital, Greenwich, a Senior House Surgeon and House Surgeon at the Branch Hospital, and a Surgeon at each of the Dispensaries. The pay of these officers varies from £50 to £100. Scholarships.—The Craggs Research Scholarship of £300 per annum was awarded last year to Mr. G. C. Low. Opportunities are afforded to Medical Graduates who may be desirous of studying Diseases Incidental to Tropical Climates and also Practical Surgery before entering the services or going abroad. In the hospitals of the Society are to be found cases of tropical disease such as may be met with in actual practice in the tropics. There are three courses in the year, each lasting three months, the first beginning Oct. 1st. Certificates are granted after examination to those who complete a full course. Resident chambers are available for students who must be post-graduates or in the fifth year of their medical studies. The School is under the auspices of Her Majesty's Government. 76 students entered last year. A free register is maintained at the School, giving the names of gentlemen qualified to take duty as medical officers in the tropics. For terms apply to the Secretary, Mr. P. Michelli, Seamen's Hospital, Greenwich, S.E.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.,[2] contains 200 beds, divided into 102 medical, 73 surgical, and 25 for special and infectious cases, besides 52 beds at the convalescent branch, Highgate. The hospital having been recognised by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need and is open to students who have completed four years of medical study and also to qualified medical men. Appointments are made every three months to six medical clerkships and six surgical clerkships, which are open to students of the hospital. Lectures or demonstrations are given once or twice every week during both winter and summer sessions, which qualified practitioners are invited to attend free of charge. The sessions are of ten weeks' duration, and begin in October, January, and March. Fees for hospital practice, three months, 2 guineas; perpetual, 3 guineas. Prospectuses and further information will be forwarded on application to the Secretary, Mr. Adrian Hope, at the hospital.

ROYAL LONDON OPHTHALMIC HOSPITAL (Moorfields,

[2] No returns.

1804–1899), City-road, E C.—This hospital, known as Moorfields Eye Hospital, was moved in 1899 to new and larger buildings in City-road. In 1899 there were 1919 in-patients, the out-patients were 37,832, and the attendances were 93,280. Operations are performed daily from 10 A.M. to 1 P.M., and four surgeons attend on each day. Students are admitted to the practice of the Hospital. Fee for six months, £3 3*s.*; perpetual, £5 5*s.* Courses of instruction on the following subjects are given at the Hospital periodically: (1) the use of the ophthalmoscope; (2) errors of refraction; (3) external diseases of the eye; and (4) surgical anatomy of the eye. Systematic instruction is also given in the laboratory of the hospital on the pathology of the eye. Perpetual students are admitted to the lectures free. Students of the hospital are eligible for the offices of house surgeon or clinical and junior assistants. Junior assistants are appointed every three months. Any further information will be furnished by Mr. Robert J. Bland, Secretary.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand.—The hospital contains 36 beds. Patients, who number 11,000 annually, are seen at 1 P.M., and operations performed daily at 2 P.M. The following are the days of attendance of the surgeons: Mr. Hartridge and Mr. Grimsdale, Mondays and Thursdays; Mr. Frost and Mr. D. Gunn, Tuesdays and Fridays; and Mr. Dodd and Mr. Griffith, Wednesdays and Saturdays. The practice of the hospital is open to practitioners and students. Fees for six months, £3 3*s.*; perpetual, £5 5*s.* Students of the hospital are eligible for the post of house surgeon and clinical assistant. Special demonstrations and lectures will be given during the session, commencing in October; for details see weekly journals. Clinical Assistants (who must be duly qualified) to the Surgeons are appointed for periods of six months. Secretary: Mr. T. Beattie-Campbell.

ROYAL EYE HOSPITAL, St. George's-circus, Southwark, S.E.—There are 40 beds and 2 cots. There were upwards of 48,000 attendances in the Out-patient Department last year, and the new patients number over 16 000 yearly. Operations are performed and out-patients are seen daily at 2 P.M. The following are the days of attendance:—Mr. M. M. McHardy, Tuesdays and Thursdays; Dr. W. J. Collins, Mondays and Wednesdays; Mr. L. V. Cargill, Tuesdays and Saturdays; and Mr. R. Doyne, Mondays and Fridays. Qualified practitioners and students are admitted to the practice of the hospital upon the recommendation of the medical staff. Tuition is given daily in the out-patient department, beginning at 2 P.M. The students need not necessarily possess a registrable qualification. They work under the guidance of the surgeons and clinical assistants, and may become eligible for clinical assistantship, house surgeonship, and registrarship, as vacancies arise. Fees: £2 2*s.* for 3 months, £3 3*s.* for 6 months, and £5 5*s.* perpetual. Qualified students of the hospital are eligible for the offices of registrar and house surgeon, and may be appointed clinical assistants upon the recommendation of the medical staff for a term of 6 months, and are eligible for re-election. Courses are held on Ophthalmoscopy, Refraction and Diseases of the Eye, fee, £1 1*s.* for each course, but perpetual students may attend each course once without extra fee. Pathology Class, £1 1*s.* extra to cover cost of materials. Tutorial or coaching classes for the various examinations arranged as far as possible to suit candidates. The classes will begin in October, if there are sufficient applications.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's-inn-road, W.C.—This hospital has 28 beds and possesses facilities for clinical teaching daily. Classes in the use of the Ophthalmoscope on Thursdays at 8 P.M., commencing Oct. 18th, continuing till March 14th, 1901. Classes in Refractions on Fridays at 5.30 P.M., commencing Oct. 19th (see advertisement).

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.—The out-patient practice is open to the medical profession at the following times: Every day, from 2 to 4 P.M., and every evening (except Saturday) 6 to 8. Specially selected Clinical Demonstrations, also demonstrations on the different diseases presenting themselves in the out-patient department, followed by Lectures, will also be given.

ST. PETER'S HOSPITAL FOR STONE AND URINARY DISEASES, Henrietta-street, Covent-garden. Established 1860. New Hospital opened, 1882.—Honorary Surgeons: Mr. F. Swinford Edwards. Mr. E. Hurry Fenwick, Mr. Reginald Harrison, and Mr. P. J. Freyer. Pathologist: Mr. E. Hurry Fenwick. The hospital contains 24 beds for men, 2 beds for women, and 1 private ward. Consultations are held and operations are performed each Wednesday and Friday at 2 P.M. Medical practitioners and students are invited to the clinical instructions which are given in the wards and out-patient department daily, and to the operations in the theatre on Wednesdays and Fridays at 2 P.M. Average beds occupied daily, 20; average out-patients seen daily, 100.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Glamis-road, Shadwell, E.—Physicians: Dr. Eustace Smith, Dr. J. A. Coutts, and Dr. Dawson Williams. Surgeons: Mr. R. W. Parker, Mr. L. A. Dunn, and Mr. H. Betham Robinson. Assistant Physicians: Dr. T. H. Arnold Chaplin, Dr. Morley Fletcher, Dr. E. Graham Little, and Dr. A. M. Gossage. Pathologist and Registrar: Dr. T. D. Lister. Medical Officer for the Casualty Department: [vacant]. Resident Medical Officer: Dr. Joseph Shardlow. House Physician: Mr. Oswin Shields. Secretary: Mr. Thomas Hayes. The hospital maintains 103 cots, and on an average 178 out-patients are seen daily. Clinical instruction is given by the physicians and surgeons to the hospital, which is recognised by the Conjoint Board for England as a school of medical teaching for students in the fifth year of the curriculum. All particulars may be obtained on application to the Secretary. Two clinical clerkships for qualified or unqualified students are open every three months, subject to re-appointment if desired. Clinical assistants (qualified men only) are from time to time appointed in the out-patient department. Any additional information may be obtained on applying to Mr. H. Betham Robinson or to Mr. Thomas Hayes, the Secretary.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark-bridge-road, S.E.—Consulting Physicians: Dr. W. S. Playfair, Dr. J. F. Goodhart, and Dr. Frederick Taylor. Physicians: Drs. Nestor Tirard and Frederick Willcocks. Physicians to Out-patients: Drs. George Carpenter and W. Soltau Fenwick. Consulting Surgeons: Messrs. H. G. Howse, R. Clement Lucas, and F. S. Eve. Surgeons: Messrs. A. H. Tubby and F. C. Abbott. Surgeons to Out-patients: Messrs. Walter Edmonds and C. H. Fagge. Dental Surgeon: Mr. R. Denison Pedley. Senior Resident Medical Officer: Mr H. T. Hicks.

VICTORIA HOSPITAL FOR CHILDREN, Chelsea, S.W.—The hospital contains 42 beds (18 beds were taken out as a precaution against infection by increasing superficial area) and has a large out-patient department (over 1000 weekly); the home at Broadstairs has 50 beds. Consulting Surgeon: Mr. Cowell. Physicians: Drs. Montague Murray, Walter Carr, Humphry D. Rolleston, William Cecil Bosanquet, F. Whittaker Tunnicliffe, and William James Fenton. Surgeons: Messrs. Pick and D'Arcy Power. Surgeons to the Out-patients: Messrs. Raymond Johnson and H. F Waterhouse. Ophthalmic Surgeon: Mr. C. Devereux Marshall. Dental Surgeon: Mr. C. E. Wallis. Anæsthetists: Dr. Paul Frank Moline and Dr. C. J. Harrison. House Surgeon: Mr. J. Bradford. House Physicians: Mr. C. von Bergen and Dr. H. D. Rolleston. Consulting Physicians: Sir Wm. Broadbent, Bart., and Dr. Ridge Jones. Secretary: Mr. H. G. Evered. Out-patients are seen as under:—Medical and Surgical Cases: Mondays and Thursdays, 9.30 A.M. and 1.30 P.M.; Thursdays and Fridays, 1.30 P.M.; Wednesdays, 9.30 A.M. Dental Cases: Saturdays, at 9 A.M.

WEST LONDON HOSPITAL, Hammersmith-road, W.—This hospital has 160 beds, of which 150 are at present in use. About 2050 in-patients and 32,000 out-patients, whose attendances number 75,000, are treated annually. Physicians: Drs. D. W. C. Hood, F. G. D. Drewitt, and Seymour Taylor. Physician for Diseases of Women: Dr. J. A. Mansell Moullin. Surgeons: Messrs. C. B. Keetley, F. Swinford Edwards, and S. Paget. Surgeon for Diseases of the Eye: Mr. H. P. Dunn. Assistant Physicians: Drs. A. P. Beddard, E. A. Saunders, and H. Davis. Assistant Physician for Diseases of Women: Dr. G. H. Drummond Robinson. Assistant Surgeons: Messrs. L. A. Bidwell, G. L. Cheatle, and W. McAdam Eccles. Surgeon-Dentist: Mr. H. Lloyd Williams. Physician-in-Charge of Throat and Nose and Aural Department: Dr. J. B. Ball. Surgeon-in-Charge of Orthopædic Department: Mr. C. B. Keetley. Pathologist: Dr. A. P. Beddard. Dermatologist: Dr. P. S.

Abraham. Administrators of Anæsthetics: Messrs. T. Gunton Alderton and Rickard W. Lloyd. Assistant Administrator of Anæsthetics: Messrs. E. W. Lewis and G. P. Shuter. Electrician: Dr. H. Davis. Secretary: Mr. R. J. Gilbert. Attached to the hospital is the West London Post-graduate College. The practice of the Hospital is reserved exclusively for qualified men, no junior students being admitted. Instruction is given in the medical and surgical out-patient rooms daily, and demonstrations are given in the wards on certain fixed days. Post-graduate lectures and demonstrations are given on Mondays and Thursdays; notice of the commencement of each course is advertised in the medical journals. The accommodation for post-graduates consists of a large lecture room together with reading and writing rooms, &c. The hospital has a fully-equipped pathological laboratory at which instruction can be given in elementary bacteriology. The fees for hospital practice, including lectures, are £3 3*s.* for 3 months or £5 5*s.* for one year. Further information can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Shoreditch, N.E. For the sick children of the poor under 12 years of age. Established 1867. City Offices: 27, Clement's-lane, E.C.—57 beds. During the past year 748 in-patients and 16,665 out-patients (representing 59,203 attendances) were relieved, 206 of the in-patients being under two years of age. Consulting Physicians: Drs. A. E. Sansom, W. Cayley, F. C. Turner, and W. Pasteur. Consulting Surgeons: Messrs. Jonathan Hutchinson, Waren Tay, R. J. Godlee, and Bilton Pollard. Physicians: Drs. W. A. Wills, James Taylor, J. H. Sequeira, and J. Porter Parkinson. Surgeons: Messrs. H. Percy Dean and A. B. Roxburgh. Ophthalmic Surgeon: Mr. Sydney Stephenson (Wednesday, 9.30 A.M.). Dental Surgeon: Mr. John W. Pare (Tuesday, 9.30 A.M., and Friday, 2.30 P.M.). Matron: Miss E. W. Curno. Secretary: Mr. T. Glenton-Kerr. The surgeons attend on Wednesdays and Saturdays at 2 P.M.; the physicians daily at 2 P.M. Applications for permission to attend the practice of the hospital should be addressed to the secretary.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Consulting Physician: Dr. Donald W. C. Hood. Physician: Dr. Harry Campbell. Surgeon: Mr. Frederic Durham. Assistant Physicians: Drs. W. Knowsley Sibley, Leonard G. Guthrie, and G. A. Sutherland. Assistant Surgeons: Messrs. M. P. Mayo Collier, J. Jackson Clarke, and George Templeton. Physician for Diseases of the Skin: Dr. J. Herbert Stowers. Obstetric Physician: Dr. John Shaw. Ophthalmic Surgeon: Dr. W. J. Collins. Dental Surgeon: Mr. G. Russell. The hospital, which was established in 1878, provides 53 beds. The average number occupied last year was 48. It is a general hospital. There are two spacious wards for men and women respectively. The children's wards contain 18 cots. There are two Resident Medical Officers—an honorarium at the rate of £50 per annum attaches to each post. Operation day, Thursday at 2.30 o'clock. Further particulars from the secretary at the hospital.

VOLUNTEER MEDICAL STAFF CORPS (LONDON COMPANIES), Calthorpe-street, Gray's-inn-road, W.C.—Hon. Commandant: Surgeon-General Sir William Guyer Hunter, K.C.M.G., Q.H.S., V.D. Officer Commanding: Surgeon-Lieutenant-Colonel J. E. Squire, V.D. The Volunteer Medical Staff Corps bears the same relation to the Volunteer Army as the Royal Army Medical Corps bears to the regular Army. The course of training has the great advantage of affording, in addition to a knowledge of ordinary military duties, special ambulance instruction useful in all ranks of life. All who have gone through the ranks of this corps are capable of rendering valuable aid in any accident, and in cases of emergency may be the means of saving lives which would otherwise be lost. In addition to the Company and Battalion drills of an ordinary infantry corps, the special training includes stretcher and waggon and cacolet drill; the use of improvised seats and stretchers; the use and application of bandages, splints, &c.; lectures by the officers on first aid to the injured, and on the elements of anatomy, physiology hygiene, and nursing, which are so arranged as not to interfere with the lectures, &c., carried on at the various hospitals in London. There is also a Shooting Club in the corps, in which instruction in, and facilities for, the practice of rifle shooting are given. There is a Transport Section in connexion with the corps, the members of which go through a course of instruction in riding and driving and transport work with the regular troops. There are also sections of Cyclists and Signallers. A Gymnastic Class meets once a week at headquarters, under an instructor who teaches boxing and fencing. Lectures are delivered during the winter session. The new headquarters contain a fine drill hall, mess-rooms, canteen, &c., where dinners, suppers, dances, and smoking concerts can be held at any time. The Adjutant, Captain L. Way, R.A.M.C., will give any information respecting the above on application to the headquarters, Calthorpe-street, Gray's-inn-road, W.C.

SCHOOL OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.—Chemistry and Physics: J. Norman Collie, Ph.D., F.R.S. Botany: Professor Reynolds Green, M.A., Sc.D., F.R.S., F.L.S. (Dean of the school). Pharmaceutics: Professor Greenish, F.I.C., F.L.S. The session commences on Monday, Oct. 1st. Medical students, or pupils intending to enter the medical profession, are admitted to the lectures and laboratory work in any or all the courses. Certificates of instruction in this school are received by the Conjoint Board of the Royal Colleges. Application for admission to the school, or for further information, may be made to the Registrar, 17, Bloomsbury-square, London, W.C.

THE LONDON COLLEGE OF CHEMISTRY, PHARMACY, AND BOTANY. 323, Clapham-road, London, S.W. — Principal, Henry Wootton, B.Sc. Lond. This College, which is established for the purpose of providing thorough and practical instruction in all branches of science, especially for students preparing for Pharmaceutical, Medical, and University Examinations, includes large and completely fitted chemical, pharmaceutical, and physical laboratories, lecture-hall, museum, and class-rooms. Each student has a separate commodious bench, fitted with gas, water, and sink, with large locker for apparatus. There is a botanic garden attached to the school.

WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY, Trinity-square, Borough, S.E.—Principal, G. S. V. Wills, F.L.S. Special instruction given to medical and dental students in chemistry, physics, and pharmacy. Fees and time by arrangement. Ladies are prepared for the Dispenser's Examination of the Apothecaries' Hall. For prospectus, fees, &c., apply to E. Walden, Secretary.

ROYAL COLLEGE OF SCIENCE, London (with which is incorporated the ROYAL SCHOOL OF MINES).—Mechanics and Mathematics: Professor J. Perry, F.R.S. Biology: Professor G. B. Howes, F.R.S. (Zoology), and Professor J. B. Farmer, M.A. (Botany). Chemistry: Professor W. A. Tilden, F.R.S., and Dr. W. P. Wynne, F.R.S. Physics: Professor A. W. Rücker, Sec. R.S., and Mr. W. Watson, B.Sc. Astronomical Physics: Professor Sir J. N. Lockyer, K.C.B., F.R.S. Geology: Professor J. W. Judd, C.B., F.R.S., and Dr. Cullis. Metallurgy: Professor Sir W. C. Roberts-Austen, K.C.B., F.R.S. Mining: Professor C. Le Neve Foster, F.R.S. Communications should be addressed to the Registrar, Royal College of Science, South Kensington, S.W.

ELECTRICAL STANDARDIZING, TESTING, AND TRAINING INSTITUTION, Faraday House, 8 and 10, Charing-cross-road, W.C.—Principal, Mr. Hugh Erat Harrison, B.Sc. Lond., F.C.S., A.M.I.C.E., M.I.E.E. Instructor in Mathematics: Alexander Russell, M.A. Glasgow and Cambridge. Instructor in Chemistry: Chas. J. Wilson, F.I.C., F.C.S. Instructor in Mechanical Engineering: Walter H. Bell, A.M.I.C.E. This institution, in addition to its ordinary course of training in electrical engineering, which occupies two or three years, also arranges for special instruction in all branches of electricity either by private tuition or by a specially arranged course at the college or at the works of the companies with which it is associated. There are Entrance Scholarships of the value of 80 and 50 guineas, and Exhibitions of 40 guineas. Particulars may be obtained on application to the Secretary, Mr. Howard Foulds, Faraday House, Charing-cross-road, W.C. Session begins Sept. 19th.

## PROVINCIAL MEDICAL SCHOOLS AND HOSPITALS HAVING SPECIAL CLASSES AND FACILITIES FOR CLINICAL STUDY.[1]

THE UNIVERSITY OF BIRMINGHAM (Faculty of Medicine).—Two Ingleby Scholarships are offered annually after examination in Obstetric Medicine and Surgery and

[1] For Scholarships see page 709 et seq.

Diseases of Women and Children. The Scholarships are open to students who have completed two years of their curriculum in this university. One or more Sydenham Scholarships are offered annually of the value of 40 guineas each. The orphan sons of former students of the Birmingham Medical School have priority of election. No Sydenham scholars are elected whose age exceeds 23 years on the day of election. The Scholarships are held for three years, subject to good behaviour. A Queen's Scholarship is offered annually of the value of 40 guineas. It may be held for three years, one-third being paid each year, subject to good behaviour. A Sands Cox Scholarship is offered annually, of the same value as the last, and is held under similar conditions. The Russell Memorial Prize is awarded annually after examination in Nervous Diseases. There are Faculties of Arts, Science, and Medicine. The medical courses qualify for the diplomas of all Licensing Bodies and for the degrees in Medicine and Surgery of British Universities. The Dental School, in conjunction with the General, Queen's, and Dental Hospitals, affords a complete curriculum for all Dental diplomas. The Library contains upwards of 25,000 volumes. Syllabuses containing full information as to the various courses of instruction, lecture days and hours, fees, scholarships, &c., will be forwarded on application to the Dean of the Medical Faculty.

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THE GENERAL AND QUEEN'S HOSPITALS, BIRMINGHAM.—The practices of these hospitals are amalgamated for the purpose of Clinical Instruction under the direction of the Birmingham Clinical Board by whom all schedules will be signed and all examinations conducted. The hospitals have a total of upwards of 400 beds. 6000 in-patients and 80 000 out-patients are treated annually. The following appointments are open to past students. At the General Hospital: two resident medical officers, salary £70 a year (a degree in medicine is necessary); one resident surgical officer, salary £100 a year; one resident pathologist, salary £100 a year; two non-resident surgical casualty officers, salary £50 a year; two non-resident anæsthetists, salary £50 a year; four house surgeons, office tenable for six months without salary; two assistant house physicians, tenable for six months without salary; one resident medical officer at the Jaffray Hospital, salary £150 a year: and one resident assistant at the Jaffray Hospital (post vacant early in April, July, October, and January, tenable for three months). At the Queen's Hospital: two house physicians (posts vacant in May and November, tenable for 12 months at a salary of £50); three house surgeons (posts vacant in February, May, and November, tenable for 12 months at a salary of £50); one obstetric and ophthalmic house surgeon (post vacant in May and November, tenable for six months), salary £10 with board and lodgings, &c.; and one resident dresser (post vacant on the first day of January, April, July, and October, tenable for three months). Candidates must previously have attended all their lectures, &c., and need not be qualified.

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UNIVERSITY COLLEGE, BRISTOL (Faculty of Medicine).—It is now arranged that Students of the College shall be admitted to the Clinical Practice of the Bristol Royal Infirmary and the Bristol General Hospital conjointly and consequently both these institutions are open to all Students.

The Infirmary and the Hospital comprise between them a total of 470 beds; and both have very extensive out-patient departments, special departments for the Diseases of Women and Children, and of the Eye, Ear, and Throat, besides large outdoor Maternity Departments and Dental Departments.

Very exceptional facilities are thus offered to Students for obtaining a wide and thorough acquaintance with all branches of Medical and Surgical work. Each Student has the opportunity of personally studying a large number of cases and of acquiring practical skill in diagnosis and treatment.

*Courses of Lectures.*—Medicine: Professors E. Markham Skerritt, M.D. Lond., B.S., B.A., F.R.C.P., and J. E. Shaw, M.B., C.M. Surgery: Professors C. A. Morton, F.R.C.S., and James Swain, M.D., M.S. Lond., F.R.C.S. Anatomy: Professor Edward Fawcett, M.B., C.M. Edin. Practical Anatomy: Demonstrators, Dr. J. O. Symes and Mr. T. Carwardine. Physiology and Histology: Professor A. F. Stanley Kent, M.A., F.L.S., F.G.S. Chemistry: Lecturer, Professor Sydney Young, D.Sc., F.R.S. Public Health: Lecturer, Dr. D. S. Davies. Midwifery and Diseases of Women: Professor A. E. Aust Lawrence. Medical Jurisprudence: Lecturers, Dr. R. Eager and Dr. G. Parker. Pathology and Morbid Anatomy: Professor J. Michell Clarke. Operative Surgery: Lecturer, Mr. J. Paul Bush. Practical Medicine: Lecturer, Dr. J. E. Shaw. Practical Surgery: Lecturer, Dr. R. G. Poole Lansdown. Practical Midwifery: Lecturer, Dr. W. C. Swayne. Materia Medica and Practical Pharmacy and Pharmacology and Therapeutics: Lecturer, Dr. A. B. Prowse. Biology: Lecturer, Dr. S. H. Reynolds. Practical Chemistry: Lecturer, Professor Sydney Young. Practical Bacteriology: Lecturer, Professor A. F. Stanley Kent, M.A., F.L.S., F.G.S. Comparative Anatomy: Lecturer, Professor C. Lloyd Morgan, F.R.S. Dental Anatomy and Physiology: Lecturer, Professor A. F. Stanley Kent, M.A., F.L.S., F.G.S. Dental Surgery: Lecturer, Mr. W. R. Ackland. Dental Mechanics and Dental Metallurgy: Lecturer, Dr. C. A. Hayman. Composition fee for lectures, 65 guineas or 55 guineas. Composition fee for Dental Lectures, 55 guineas. Special six months' course for Diploma in Public Health. 1. Lectures on Public Health: Dr. D. S. Davies. 2. Bacteriology: Professor A. F. Stanley Kent, M.A., F.L.S., F.G.S. 3. Laboratory Course of Hygienic Chemistry: Mr. F. W. Stoddart. 4. Demonstrations on the Various Acts, Orders, By-laws, &c.: Mr. J. C. Heaven. 5. Practical Outdoor Sanitary Work: Dr. D. S. Davies. Fee for the entire course 20 guineas.

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ROYAL INFIRMARY, BRISTOL (Established 1735).—270 beds. Honorary and Consulting Physicians: Dr. E. Long Fox and Dr. W. H. Spencer. Honorary and Consulting Surgeon: Mr. E. C. Board. Physicians: Dr. R. Shingleton Smith, Dr. Henry Waldo, Dr. J. E. Shaw, and Dr. Arthur B. Prowse. Surgeons: Mr. A. W. Prichard, Mr. W. H. Harsant, Mr. J. Paul Bush, and Mr. G. Munro Smith. Ophthalmic Surgeon: Mr. F. R. Cross. Obstetric Physician: Dr. Walter C. Swayne. Dental Surgeon: Mr. W. R. Ackland. Assistant Physicians: Dr. P. Watson Williams and Dr. F. H. Edgeworth. Assistant Surgeons: Dr. James Swain and Mr. T. Carwardine. Pathologist: Dr. Theodore Fisher. Bacteriologist: Professor A. F. Stanley Kent, M.A. Skiagraphist: Mr. James Taylor. House Surgeon: Mr. H. F. Mole. House Physician: Dr. E. H. E. Stack. Resident Obstetric Officer: Mr. Edgar S. Edwards. Anæsthetist and Junior House Surgeon: Mr. C. F. Walters. Casualty Officer: Mr. F. A. Coates.

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BRISTOL GENERAL HOSPITAL.—Honorary and Consulting Surgeons: Mr. Robert W. Coe, Dr. George F. Atchley, Mr. Nelson C. Dobson, Mr. F. Poole Lansdown, and Mr. William J. Penny. Honorary and Consulting Physician Accoucheurs: Drs. Joseph G. Swayne and A. E. Aust Lawrence. Physicians: Drs. E. Markham Skerritt, Alfred J. Harrison, and J. Michell Clarke. Surgeons: Messrs. Charles F. Pickering, W. M. Barclay, and C. A. Morton, and Dr. R. G. Poole Lansdown. Physician Accoucheur: Dr. W. H. C. Newnham. Physician to the Throat and Nose: Dr. Barclay J. Baron. Ophthalmic Surgeon: Mr. Cyril H. Walker. Assistant Physicians: Dr. George Parker and Dr. J. O. Symes. Assistant Surgeon: Dr. J. Lacy Firth. Assistant Physician Accoucheur: Mr. F. C. Rayner. Anæsthetist: Mr. J. Freeman. Dental Surgeon: Mr. T. Taylor Genge. Pathologists: Dr. J. Michell Clarke and Dr. J. Lacy Firth. Bacteriologist: Dr. J. O. Symes. House Surgeon: Dr. F. Nesfield Cookson. Assistant House Physician: Dr. R. F. Moorshead. Assistant House Surgeon: Mr. S. R. Williams. Casualty House Surgeon: Mr. W. J. Lord.

*Clinical Scholarships and Prizes.*—These are open for competition only to "Perpetual" Clinical Students. 1. Open Scholarships and Prizes:—(*a*) University Entrance Scholarship of £50 and Haberfield Entrance Scholarship of £27 10*s*. (*b*) Tibbitts Surgical Prize, £9 9*s*.; and two Martyn Pathological Prizes of £10 each. (*c*) A Gold Medal and a Silver Medal given by the Committees of the two institutions. 2. Restricted to students who have done the necessary qualifying work at the Bristol Royal Infirmary: Suple Medical Prize (consisting of a Gold Medal, value 5 guineas, and 7 guineas in money); Suple Surgical Prize (consisting of a Gold Medal, value 5 guineas, and 7 guineas in money); Clark Prize, value £11 11*s*.; Crosby Leonard Prize in Clinical Surgery, value £7 7*s*.; and Augustin Prichard Prize in Surgical Anatomy, value £7 7*s*. 3. Restricted to students who have done the necessary qualifying work at the Bristol General Hospital:—Clarke Scholarship, a surgical scholarship of the

value of £15; Sanders Scholarship, a scholarship of the value of £22 10*s.*; and the Marshall Prize, value about £10.

*Resident Appointments.*—There are five resident appointments at the Infirmary and four in the Hospital, and the Dressers reside in rotation, free of expense. The Maternity students also have rooms provided in the institutions.

*Fees.*—Medical Practice: three months, 4 guineas; six months, 7 guineas; one year, 12 guineas; perpetual, 20 guineas. Surgical Practice: three months, 4 guineas; six months, 7 guineas; one year, 12 guineas; perpetual, 20 guineas. Medical and Surgical Practice together in one payment: six months, 12 guineas; one year, 20 guineas; perpetual, 35 guineas. Dental Surgical Practice: one year, 7 guineas; perpetual, 12 guineas. The above fees include Clinical Lectures. Clinical Clerkship: 5 guineas for six months. Dressership: 5 guineas for six months. Museum fee: 3 guineas (composition on entrance), or 1 guinea annually. Dispensing Fee: 2 guineas. Students from other schools or qualified medical men wishing to attend Clinical Practice for short periods and not requiring certificates for such attendance may do so for the following fees:—Medical and Surgical Practice conjointly: one month, 2 guineas; two months, 3 guineas; three months, 4 guineas; and six months, 7 guineas.

Further information may be obtained on application to the Dean of the Faculty.

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UNIVERSITY COLLEGE, CARDIFF, SCHOOL OF MEDICINE.—The winter session will commence on Monday, Oct. 8th. The annual address will be given by Sir John Williams, Bart, M.D., on the afternoon of Oct. 10th. All classes are open to both men and women students who may spend three out of their five years of medical study at Cardiff. The courses of study are recognised as qualifying for the Preliminary Scientific and Intermediate Examination in Medicine in the University of London and for the corresponding examinations in the other Universities. Students who are preparing for these examinations may compound for their courses by paying a fee of £57 10*s.*, while a composition fee of £40 includes all the necessary courses for the first and second examinations for the Diploma of the Conjoint Board. In all cases the composition fees may be paid by instalments. Hospital instruction is given at the Cardiff Infirmary. The attention of students about to matriculate is drawn to the numerous entrance scholarships and exhibitions, varying in value from £10 to £30 per annum, offered for competition at University College, Cardiff, in September next, most of which may be held by medical students. Full particulars of the examination for these may be obtained by application to the Registrar. During the last year a department in Public Health has been established and instruction is now given at the College qualifying for the D.P.H. examinations. Further information may be obtained from Professor A. Francis Dixon, Dean of the Faculty of Medicine.

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CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Clinical Lectures in Medicine and Surgery, in connexion with Cambridge University Medical School, are delivered at this hospital twice a week during the academical year; and practical instruction in Medicine and Surgery in the wards and out-patients' rooms is given by the physicians and surgeons daily, during the vacations as well as term time. Instruction is also given in all the special modes of medical and surgical investigation. Clinical Clerks and Dressers are selected from students according to merit and without payment. The composition fee for pupilship is 8 guineas.

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UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, Newcastle-upon-Tyne.—The following Scholarships and Prizes are awarded annually:—Four University of Durham Scholarships, value £25 tenable for four years, for proficiency in Arts, awarded to full students in their first year. The Dickinson Scholarship, value interest of £400, and a Gold Medal, for Medicine, Surgery, Midwifery, and Pathology. The Tulloch Scholarship, value the interest of £400, for Anatomy, Physiology, and Chemistry. The Charlton Scholarship, value the interest of £700, for Medicine. The Gibb Scholarship, value the interest of £500, for Pathology. The Goyder Memorial Scholarship (at the Infirmary), value the interest of £325, for Clinical Medicine and Cunical Surgery. The Luke Armstrong Memorial Scholarship, value the interest of £680 for Comparative Pathology. The Stephen Scott Scholarship in Surgery, value the interest of £1000. Heath Scholarship: The late George Yeoman Heath, M.D., D.C.L., F.R.C.S., President of the University of Durham College of Medicine, bequeathed the sum of £4000 to found a Scholarship in Surgery, the interest to be awarded every second year; the next award will be in 1902. The Gibson Prize, interest on £225, in the department of Midwifery and Diseases of Women and Children. At the end of each session Prizes of Books and Honours Certificates are awarded in each of the regular classes. Assistant Demonstrators of Anatomy, receiving each an honorarium of £5, Prosectors, and Assistant Demonstrators of Physiology and Pathology are elected yearly. Pathological Assistants, Assistants to the Dental Surgeon, Assistants in the Eye Department, Throat and Ear Department, and Skin Department, Clinical Clerks, and Dressers are appointed every three months.

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NEWCASTLE-UPON-TYNE ROYAL INFIRMARY.—Physicians: Drs. Drummond, Oliver, Limont, and Murray. Assistant Physicians: Drs. Beattie and Bolam. Surgeons: Dr. Hume, Mr. Rutherford Morison, Mr. Ridley, and Mr. Martin. Assistant Surgeons: Mr. H. B. Angus, Mr. J. V. W. Rutherford, Mr. Richardson, and Mr. Leech. Pathologist: Dr. Beattie. Dental Surgeon: Mr. R. L. Markham. Skin Department: Dr. Limont. Eye Department: Mr. Wardale. Throat and Ear Department: Mr. Ridley. Anæsthetist: Dr. W. D. Arnison. Surgical Registrars: To be appointed. The infirmary contains 280 beds. Clinical Lectures are delivered by the Physicians and Surgeons in rotation. Pathological Demonstrations are given by the Pathologist as opportunity offers. Practical Midwifery can be studied at the Newcastle Lying-in Hospital. Instruction is given in Psychological Medicine at the Northumberland County Asylum, Morpeth. A Special Course of Instruction is given in the City Hospital for Infectious Diseases by the Superintendent, the City Officer of Health, Mr. H. E. Armstrong.

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LEEDS GENERAL INFIRMARY AND MEDICAL DEPARTMENT OF THE YORKSHIRE COLLEGE.—The Leeds General Infirmary has accommodation for 482 in-patients, medical and surgical, including 46 beds at a "semi-convalescent home" in the country. During the last year 6594 in-patients and 35 067 out-patients were treated. Clinical teaching takes place daily in the wards, and Clinical Lectures are given in Medicine and Surgery by the Physicians and Surgeons. There are Medical, Surgical, Ophthalmic, Aural, and Electrical Departments, in each of which special instruction is imparted to students. A Gynæcological and Extern Obstetric Department, together with Laryngeal and Skin Clinics, are in operation. The Public Dispensary, the Hospital for Women and Children, the Fever Hospital, and the West Riding Lunatic Asylum are other medical institutions which are made use of by the Leeds students. Four years ago the new buildings of the Medical School were opened by their Royal Highnesses the Duke and Duchess of York. Erected on a commanding site, close to the Infirmary, the new School of Medicine contains complete accommodation for the training of medical students upon the most approved modern methods. A very fine dissecting-room, extensive laboratories for Physiology and Pathology, with the most recent improvements in fittings and apparatus, ample lecture-room accommodation, a large Library, and separate Museums for Pathology and Anatomy—these are some of the most striking features of the new buildings. Careful provision for the convenience of students, in the shape of a common-room, a refectory, &c., has also been made a feature of the school. The classes in Systematic and Practical Chemistry, Physics and Biology, are held in the Science and Arts Department of the College, in College-road. Two Entrance Scholarships are offered: one, of the value of 64 guineas, covering admission to all requisite lectures; and the other, of the value of 40 guineas, covering the cost of admission to the medical and surgical practice of the infirmary. Several valuable prizes are given at the end of each session. The following appointments at the infirmary are annually open to students (for some of them, however, a registered legal qualification is required); senior and 3 junior anæsthetists, pathological curator, resident medical officer, resident surgical officer, resident casualty officer, resident ophthalmic officer, appointed for 12 months, and eligible for re-election; resident obstetric officer and 4 house surgeons, for 12 months; 3 house

physicians, for six months; 30 physicians' clerks, for six months; 32 surgeons' dressers, for six months; 16 ophthalmic and aural surgeons' dressers, for three months; 12 gynæcological ward clerks, for three months; 16 gynæcological out-patient clerks, for three months; 24 assistant physicians' clerks, for three months; 24 assistant surgeons' dressers, for three months; 8 out-patient ophthalmic and aural dressers; 32 dressers in the casualty-room, for three months; 32 post-mortem clerks, for three months.

There are appointments open to students in other medical institutions in the town and also in the West Riding Lunatic Asylum.

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UNIVERSITY COLLEGE, LIVERPOOL: MEDICAL FACULTY.—New medical buildings are at present in course of erection, comprising departments of Anatomy, Surgery, Anatomical Museum, Laboratories, and lecture-room accommodation for the School of Dental Surgery, Materia Medica, Toxicology, &c., adjoining the Physiological and Pathological Laboratories, which were built and completely equipped by the generosity of the Rev. S. A. Thompson-Yates at a cost of £30,000 and were opened by Lord Lister in October, 1898. This building includes theatres for physiology and patbology, laboratories for Microscopic, Physical, and Chemical Physiology, for Morbid Anatomy, Bacteriology, and Chemical Pathology, special rooms for research, &c., private rooms, students' common room, and lavatories. The Chemical Laboratories have been extended so as to provide *inter alia* more complete accommodation for medical students and those engaged in laboratory work for diplomas in Public Health. The Chair of Hygiene has secured adequate permanent accommodation in Ashton Hall, an institute adjacent to the College which contains ample class room and laboratory accommodation for study and research. The museums of Anatomy, Pathology, and Materia Medica are furnished with complete provision for the needs of students and have recently been reorganised and revised. The museum of Hygiene accommodated in Ashton Hall has been recently established on the lines of the Parkes Museum. It contains meteorological instruments and numerous models and specimens. Under the supervision of the Professor of Hygiene a course of lectures on Sanitary Science is given during the winter suitable for candidates for sanitary inspectors' certificates.

*Royal Infirmary.*—The Royal Infirmary, which adjoins the School, contains 300 beds with 40 special beds for the treatment of Diseases of Women. The Lock, Lying-in, Eye and Ear, Women's, Children's, and Dental Hospitals are in the immediate vicinity and their practice is open to the students of the Medical Faculty.

*Fees.*—The composition fees are:—£24 15*s.* for Preliminary Scientific Classes; £60 for the Medical Classes required for the Victoria, London, and other University degrees; and £70 for all the classes required for the diplomas of the Conjoint Boards. The medical composition fees are payable in two instalments at intervals of 12 months. The fee for hospital attendance at the Royal Infirmary is 40 guineas, also payable in two annual instalments.

*Appointments.*—Three house surgeons, three house physicians, and one external house surgeon to the Thornton Wards are appointed for six months after (if necessary) competitive examination. Candidates must have a legal qualification. Clinical clerks for each physician, dressers for each surgeon, and clerks to the Thornton Wards for Diseases of Women are appointed every three months. Post-mortem clerks are appointed for six weeks; all students are required to perform this duty before the schedule for the Final Examination is signed.

*Fellowships and Scholarships.*—Fellowships, scholarships, and prizes of over £600 are awarded annually. 1. A Holt Fellowship in Pathology and Surgery of the value of £100 for one year is awarded annually by the medical faculty to a senior student possessing a medical qualification. The successful candidate is required to devote a year to tutorial work and investigation in the pathological department. 2. A Holt Fellowship in Physiology is awarded under similar conditions of the value of £100 for one year. 3. A Robert Gee Fellowship in Anatomy is awarded under similar conditions also of the value of £100 for one year. 4. An Alexander Fellowship for Research in Pathology of the annual value of £100, renewable. 5. A Johnstone Colonial Fellowship in Pathology and Bacteriology (£100 a year, renewable). 6. Two Lyon Jones Scholarships of the value of £21 each for two years are awarded annually—a junior scholarship, open at the end of the first year of study to Victoria University students, in the subjects of the First M.B. Examinations, and a senior scholarship, open to all students in the school at the end of the second or third year of study, on the subjects of anatomy, physiology, and therapeutics. 7. The Derby Exhibition of £15 for one year is awarded in clinical medicine and surgery in alternate years. Students may compete in their fourth and fifth years. In 1901 the subject will be Clinical Medicine. 8. The Torr Gold Medal in Anatomy and the George Holt medal in Physiology, the Fletcher prize in Physiology (£3 3*s.* in books), the Kanthack medal in Pathology, the Robert Gee Book Prize, of the value of £5, for Children's Diseases, and numerous Class Prizes are awarded annually.

*Entrance Scholarships.*—Four Robert Gee Entrance Scholarships of the value of £25 for one year are offered annually for competition. The holder is required to take out the Science Courses for the University Degree in Medicine.

Communications should be addressed to the Dean, Professor Paterson, M.D., University College, Liverpool.

*School of Dental Surgery.*—A new mechanical laboratory has recently been erected at the Dental Hospital; it is adequately equipped with all modern appliances and is under the charge of a skilled mechanic. The fees for dental education are £50 (payable in two instalments) for the Medical School curriculum; £21 payable in entrance for two years' Dental Hospital practice; £10 10*s.* for General Hospital practice (two winters). A limited number of apprentices are taken at the hospital: fee (for three years), £105. Numerous scholarships and prizes are offered: A Fletcher Scholarship of £21 in Mechanical Dentistry; a Phillips Scholarship of £10 10*s.* in Dental Surgery; a Councell Prize for Dental Mechanics (£5 5*s.* in books); Ash's Essay Prize (£2 2*s.*); Quinby Prizes (£20), &c.

Prospectuses and further information may be had on application to the Registrar, University College, Liverpool.

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MEDICAL DEPARTMENT OF OWENS COLLEGE, VICTORIA UNIVERSITY.—This medical school is located in a large building, which forms a part of Owens College. It is provided with large dissecting-rooms, physiological laboratories, private laboratories, and work-rooms, besides lecture-rooms, a museum, and a library. In order to give the fullest possible opportunities for teaching and investigation in the departments of Anatomy, Physiology, Pathology, and Materia Medica, an extension of the school buildings has recently been made. The greater part of the new buildings is devoted to the departments of physiology, pathology, toxicology, anatomy, and public health. The physiological department occupies more than half of the new buildings, and includes a large lecture theatre, accommodating 350 students, with preparation and diagram rooms adjacent to it, and a research laboratory fitted with the necessary apparatus for the use of advanced students, research scholars, or practitioners of medicine undertaking the investigation of some special subject. In the new pathological laboratories ample provision is made for the teaching of pathology and bacteriology and for the prosecution of original research. In the toxicological department there is a large laboratory, capable of accommodating 50 students, lighted from both sides and also from the roof, completely equipped with all that is necessary for the practical teaching of toxicology; also a small laboratory for private research, containing the apparatus and fittings necessary for investigations in toxicological chemistry. In the public health department suitable laboratory accommodation is provided for the study of sanitary chemistry, physics, and practical bacteriology in the departments of chemistry and physics and in that of pathology. A large room is provided in the new buildings for a museum of apparatus, models, plans, and other sanitary appliances for the practical instruction of the students, together with a special library of works on State medicine, hygiene, vital statistics, and sanitary engineering. In addition, a large lecture theatre for general purposes, accommodating 250 students, has been provided, and the existing accommodation for students is supplemented by the provision of a larger common room. The more strictly practical departments of medical study are taught partly in the Medical School and partly in the Royal Infirmary, as well as in a fever hospital, a lunatic asylum, and a convalescent home. Medical and Surgical Clinical Classes are conducted

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE PROVINCIAL SCHOOLS OF MEDICINE FOR THE SESSION 1900-1901.

| LECTURES, &c. | UNIVERSITY OF DURHAM COLL. OF MED., NEWCASTLE-UPON-TYNE. | | UNIVERSITY COLLEGE, LIVERPOOL. | | OWENS COLLEGE (VICTORIA UNIV.) SCHOOL OF MEDICINE. | | UNIVERSITY COLLEGE, SHEFFIELD. | |
|---|---|---|---|---|---|---|---|---|
| | LECTURERS. | FEES. One Course. | LECTURERS. | FEES. | LECTURERS. | FEES. One Course. | LECTURERS. | FEES. One Course. |
| | | £ s. d. | | £ s. d. | | £ s. d. | | £ s. d. |
| **WINTER SESSION.** | | | | | | | | |
| PHYSIOLOGY | Prof. Oliver, Dr. Bolam | 5 5 0 | Prof. Sherrington, Dr. Macdonald (*and Histology*) | 5 5 0 | Prof. Wm. Stirling | 5 5 0 | Prof. Myers-Ward | 5 5 0 |
| PRACTICAL PHYSIOLOGY | Prof. Oliver, and Dr. R. A. Bolam | 5 5 0 | Prof. Sherrington†† | ... | Prof. Stirling | 4 4 0 | Prof. Myers-Ward | §§7 7 0 |
| ANATOMY, DESCRIPTIVE AND SURGICAL | Prof. Howden | 5 5 0 | Prof. Paterson, Dr. Armour | 5 5 0 | Prof. A. H. Young | 5 5 0 | Prof. Addison & Mr. E. Skinner | 5 5 0 |
| ANATOMICAL DEMONSTRATIONS | Prof. Howden | 3 3 0 | Prof. Paterson | 3 3 0 | Prof. Young | 1 1 0 | Mr. Scott, Mr. Connell, and Mr. P. E. Barber | 5 5 0 |
| | [*Prac. Anat.:* Prof. Howden] | | Dr. Armour | | [*Oper. Surgery:* Mr. Thorburn] | | | |
| CHEMISTRY | Prof. Bedson | 5 5 0 | Prof. Campbell Brown,§ Dr. Kohn, Dr. Bailey | 3 0 0 | Prof. Dixon, Prof. Perkin | 3 10 0 | Prof. Williams | 3 13 6 |
| | | | | | [*Biology:* Prof. Hickson] | 4 14 6 | | |
| PHYSICS | Prof. Stroud | 5 5 0 | Vacant | 6 0 0 | Prof. Schuster | 2 12 6 | ... | ... |
| MEDICINE | Prof. Philipson | 5 5 0 | Prof. Glynn | 5 5 0 | Prof. Dreschfeld | 5 5 0 | Drs. Dyson and Burgess | 5 5 0 |
| SURGERY | Prof. Sir George Page | 5 5 0 | Prof. Parker, Mr. Thomas | 5 5 0 | Prof. Wright | 5 5 0 | Mr. Pye-Smith & Dr. White | 5 5 0 |
| PRACTICAL SURGERY | ... | ... | Prof. Parker, Mr. Thomas | 4 4 0 | Mr. Collier | 4 4 0 | Dr. Wilkinson | 3 3 0 |
| PATHOLOGY | Dr. Drummond (*in Summer*) | 5 5 0 | Prof. Boyce, Dr. Abram | 4 4 0 | Prof. Delépine | 5 5 0 | Dr. Hall (*in Summer*) | ... |
| BACTERIOLOGY | Prof. Murray | 6 6 0 | Prof. Boyce | 4 4 0 | Prof. Delépine | 4 4 0 | Drs. Robertson & Hector | ... |
| EXPERIMENTAL PHYSICS | Prof. Stroud | 2 2 0 | Vacant | 6 0 0 | Prof. Schuster | 2 2 0 | Prof. Hicks | 1 1 0 |
| PUBLIC HEALTH | Dr. H. E. Armstrong | 5 5 0 | Prof. E. W. Hope,†† Dr. Mussen | 4 4 0 | Dr. Niven | 2 2 0 | ... | 2 2 0 |
| | | | | Comp. | [*Zoology:* Prof. Hickson] | 2 12 6 | | |
| HOSPITAL PRACTICE: | ROYAL INFIRMARY, NEWCASTLE. | | LIVERPOOL ROYAL INFIRMARY. | £60 or £70 6 mnths. | ROYAL INFIRMARY. | | SHEFFIELD ROYAL INFIRMARY | |
| PHYSICIANS | Drs. Drummond, Oliver, Limont, and Murray | 6 months 8 8 0 12 mnths | Dr. Glynn, Dr. Caton, Dr. Barr | 6 6 0 12 mnths | The Physicians | Composition fee, full period, £42 | Drs. Dyson, Porter & Cocking Messrs. Hallam, Atkin, and Dr. S. White | 6m., £66s.; 3m., £33s.; perp. (Med. & Surg.) £45; or by 2 instalments of £26 & £22. |
| SURGEONS | Dr. Hume, Messrs. Morison, Walter Ridley, A. M. Martin | 12 12 0 Comp. | Sir W. M. Banks, Mr. Parker, Mr. Paul | 7 7 0 6 mnths. | The Surgeons | | | |
| ASSISTANT SURGEONS | Mr. H. B. Angus, Mr. J. H. Rutherford, Mr. W. G. Richardson | †26 5 0 | Mr. R. A. Bickersteth, Mr. Hamilton, Mr. Thelwall Thomas | 7 7 0 Comp. £42 | [*Dent. Metallurgy.:* Mr. J. P. Headridge] | 6 6 0 | ROYAL HOSPITAL. | |
| | | | | | [*Dent. Mech.:* Mr. Tanner] | 4 4 0 | *Phys.:* Drs. Burgess, Arthur Hall, and Clapham | |
| **SUMMER SESSION.** | | | | | [*Dent. Anatomy:* Dr. Preston]†† | 4 4 0 | *Surgs.:* Mr. Pye-Smith, Mr. H. Lockwood, and Dr. Wilkinson | |
| | | | | | [*Pr. and Op. Surg. Dent.:* Mr. Whittaker]†† | 4 4 0 | | |
| | | | | | [*Dent. Hist:* Mr. D. Headridge]†† | 4 4 0 | | |
| MATERIA MEDICA | Dr. McBean | 5 5 0 | Prof. Carter (*& Therapeutics*) | 2 2 0 | ... | 4 4 0 | Dr. Cocking | 2 2 0 |
| MIDWIFERY, &c. | Dr. Lyle | 5 5 0 | Prof. Briggs, Dr. A. Wallace‡‡ (*and Gynæcology*) | 5 5 0 | Prof. Sinclair (*& Gynæcol.*) ‡ £22s. | 4 4 0 | Mr. R. Favell and Dr. Martin | 5 5 0 |
| | | | | | Dr. Ashby (*Dis. Chil.*) | 2 2 0 | | |
| BOTANY | Prof. Potter | ... | Prof. Gibson, Mr. L. Lewis§ | 3 0 0 | Prof. Weiss | 2 12 6 | Prof. Denny | 3 3 0 |
| BIOLOGY | Prof. Potter§ | 5 5 0 | Prof. Herdman | 6 0 0 | ... | ... | ... | ... |
| MEDICAL JURISPRUDENCE | Dr. Murphy | 5 5 0 | Prof. Paul, Dr. Buchanan | 4 4 0 | Prof. Dixon Mann | 3 3 0 | Dr. Young | 3 3 0 |
| MENTAL DISEASES | Dr. McDowall | 5 5 0 | Dr. Wiglesworth | 1 1 0 | Dr. Mould | 1 11 6 | ... | ... |
| PRACTICAL CHEMISTRY | Prof. Bedson | 5 5 0 | Prof. Campbell Brown | 4 4 0 | Prof. Dixon | 4 4 0 | Prof. Williams | 2 12 6 |
| PRACTICAL PHYSICS | Prof. Stroud | 2 2 0 | Prof. Lodge | ... | ... | ... | Prof. Denny | 2 2 0 |
| COMPARATIVE ANATOMY | Prof. Brady | 2 2 0 | Prof. Herdman | ... | Dr. Hickson‡ (*with Embryology*) | 2 12 6 | ... | ... |
| PATHOLOGY AND MORBID ANATOMY | Dr. Drummond | 5 5 0 | Prof. Boyce | 2 2 0 | Prof. Delépine | 2 2 0 | Dr. Hall | 4 4 0 |
| | | | | | Dr. Brooke (*Skin Diseases*) | 1 1 0 | | |
| OPHTHALMIC SURGERY | Mr. Wardale | ... | Mr. Edgar Browne†† | 1 1 0 | Dr. Glascott | 3 3 0 | Mr. Snell | 2 2 0 |
| DENTAL SURGERY AND MECHANICS | Mr. Markham | ... | **[*Dental Surg.:* Mr. Phillips] | 3 3 0 | Mr. G. G. Campion | 4 4 0 | [*Med. Officer to Skin Department:* Mr. W. Dale James] | ... |
| | [*Dis. of Throat, Nose, & Ear:* Mr. Walter Ridley] | | [*Mechanics:* Mr. Councell] | 3 3 0 | [*Dis. of Larynx:* Dr. Hodgkinson] | 1 1 0 | | |
| | | | [*Dental Anat.:* Prof. Paul] | 4 4 0 | [*Dis. of Ear:*, Dr. Milligan] | 1 1 0 | [*Prac. Pathol.:* Dr. Arthur Hall and Mr. A. M. Connell] | 5 5 0 |
| | [*Dis. of Skin:* Dr. Limont] | | [*Dental Metall.:* Dr. Bailey] | ... | [*Tropical Dis.:* Dr. Reynolds] | 1 1 0 | | |
| | Prof. Page | 5 15 6 | Prof. Parker, Mr. Thomas | [Comp. fee, £50] | Mr. Thorburn | 4 4 0 | Mr. Atkin | 2 2 0 |
| OPERATIVE SURGERY | { Physicians and Surgeons of Infirmary } | ... | { Physicians and Surgeons of the Royal Infirmary } | | { Physicians and Surgeons of the Royal Infirmary } | ... | { Phys. & Surg. of Gen. Infir. & Royal Hospital } | ... |
| CLINICAL MEDICINE | | | [*Dis. of Child.:* Dr. P. Davidson] | 2 2 0 | Prof. Southam | | [*Pharm. & Ther.:* Dr. Cocking] | 4 4 0 |
| CLINICAL SURGERY | | | [*Dental Path.:* Prof. Boyce‡] | 4 4 0 | [Comp. fee, Dental course, £50] | | *Dental:* Lect. & Pract. Classes, | |
| | | | [*Hum. & Mamm. Embryology:* Prof. Paterson] | 70 0 0 42 0 0 | ... | 70 0 0 | £20; Dent. Hosp. Prac., £21; | 63 0 0 |
| FEE for all Lectures required by the College & Hall | ... | 73 10 0 | | | ... | 42 0 0 | Med. Course, £30; Med. & Surg. Hosp. Pract., £10 10s. | 45 0 0 |
| Ditto for Hospital Medical & Surgical Practice | ... | †26 5 0 | | | | | | |

* Diseases of Women and Children. † In addition to the above, £2 2s. yearly up to three years. ‡ In winter. § Winter and Summer.
Except Chemistry, Biology and Fever, Ophthalmic, and Mental Hospital Practice. ¶ Diseases of Women. ** Complete Dental Course, £50. †† In summer. ‡‡ Midwifery in winter, Gynæcology in summer.
§§ Practical Physiology: Winter, £3 3s. Practical Histology: Summer, £4 4s. ¶¶ These fees do not include Clinical Instruction in Mental Disease, Gynæcology, Infectious Disease.

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE PROVINCIAL SCHOOLS OF MEDICINE FOR THE SESSION 1900-1901.

| LECTURES, &c. | THE UNIVERSITY OF BIRMINGHAM. | | UNIVERSITY COLLEGE, BRISTOL. | | CAMBRIDGE UNIVERSITY. | | YORKSHIRE COLLEGE, LEEDS. | |
|---|---|---|---|---|---|---|---|---|
| | LECTURERS. | FEES. One Course. | LECTURERS. | FEES. One Course. | LECTURERS. | FEES. | LECTURERS. | FEES. |
| **WINTER SESSION.** | | £ s. d. | | £ s. d. | | £ s. d. | | £ s. d. |
| PHYSIOLOGY | Prof. E. W. W. Carlier and Dr. J. H. Rhodes | 6 6 0 | Prof. A. F. Stanley Kent | 5 5 0 | Sir M. Foster, Dr. Gaskell, and Dr. Langley. | ... | Prof. Birch | 10 10 0 |
| ANATOMY, DESCRIPTIVE & SURGICAL | Prof. B. C. A. Windle | 6 6 0 | Prof. E. Fawcett | 5 5 0 | Prof. Macalister<br>Dr. J. Griffiths | ... | Prof. Griffith and Mr. Robinson | 10 10 0 |
| ANATOMICAL DEMONSTRATIONS | Messrs. W. Wright, W. E. Bennett, and J. J. Evans | 5 5 0 | Dr. Symes & Mr. Carwardine | 5 5 0 | Prof. Macalister and Demonstrators | ... | Prof. Griffith and Demonstrators | ... |
| PRACTICAL PHYSIOLOGY | [*Pathology:* Prof. R. F. C. Leith. £4 4s.] | ... | Prof. Stanley Kent | 8 8 0 | Dr. Langley | ... | Prof. Birch and Demonstrator | 6 6 0 |
| ELEMENTARY BIOLOGY | Prof. Bridge & Mr. W. E. Collinge | 5 5 0 | Prof. Reynolds | 5 5 0 | Mr. Seward and Mr. Sedgwick | ... | Professor Miall | 5 5 0 |
| CHEMISTRY | Prof. P. F. Frankland & Dr. Baker | 4 4 0 | Prof. Young | 5 5 0 | Prof. Liveing,<br>Prof. Dewar and Dr. Ruhemann | ... | Prof. Smithells & Dr. Cohen | 5 5 0 |
| MEDICINE | Prof. Carter, Prof. Saundby, and Dr. Russell | 6 6 0 | Profs. Markham Skerritt and Shaw | 5 5 0 | Prof. Allbutt<br>Dr. MacAlister | ... | Prof. Barrs | 6 6 0 |
| THERAPEUTICS | Prof. Foxwell | 4 4 0 | ... | ... | Prof. Bradbury | ... | Prof. Chadwick | 3 3 0 |
| SURGERY | Prof. Barling, Prof. B. May, and Mr. Geo. Heaton | 6 6 0 | Profs. Morton and Swain | 5 5 0 | Dr. J. Griffiths | ... | Prof. Ward<br>Mr. Littlewood (*Prac. Surg.*) | 6 6 0<br>4 4 0 |
| HYGIENE AND PUBLIC HEALTH | Prof. B. Hill | 3 3 0 | Dr. Davies | 4 4 0 | Dr. Anningson | ... | ... | ... |
| GYNÆCOLOGY | ... | ... | ... | ... | Mr. Stabb | ... | Dr. Hellier | 3 3 0 |
| HOSPITAL PRACTICE: | | | | | | | | |
| PHYSICIANS | GENERAL HOSPITAL AND QUEEN'S HOSPITAL. (*See Additional Information on Schools.*) | 3 months<br>5 0 0<br>6 months<br>7 0 0 | BRISTOL ROYAL INFIRMARY, AND BRISTOL GENERAL HOSPITAL. | ... | ADDENBROOKE'S HOSPITAL.<br>Prof. Bradbury, Drs. MacAlister, L. Humphry, and Lloyd Jones | Perpet. 8 8 0<br>... | LEEDS GENERAL INFIRMARY.<br>*Physicians:* Drs. Churton, Barrs, Chadwick and Braithwaite<br>*Assist. Phys.:* Drs. T. W. Griffith and Trevelyan | ... |
| SURGEONS | ... | 1 year | (*See Additional Information on Schools.*) | ... | Mr. Wherry, Mr. Deighton, Dr. Griffiths, Mr. Higgins | ... | *Surgeons:* Messrs. Robson, Ward, Brown, Littlewood, Nunneley, and Walker | ... |
| | *Ophthalmology:* Prof. Priestley Smith. £1 1s.] | 11 11 0 | [*Ophthalmology:* Dr. Richardson Cross. £3 3s.] | | | | *Assist. Surgs.:* Messrs. Knaggs, Moynihan and Whitehead | ... |
| | [*Midwifery, &c.:* Prof. E. Malins, Dr. Purslow. £5 5s.] | | | | | | Prof. Chadwick | 4 4 0 |
| **SUMMER SESSION.** | | | | | | | | |
| MATERIA MEDICA, &c. | Mr. Kneale. | 2 2 0 | Dr. Prowse | 3 3 0 | Prof. Bradbury and Dr. Dixon | | Prof. Wright and Mr. Croft | 6 6 0 |
| MIDWIFERY, &c. | ... | ... | Prof. Aust Lawrence | 4 4 0 | Mr. Stabb | | ... | ... |
| GYNÆCOLOGY | Prof. J. W. Taylor and Dr. C. E. Purslow | 5 5 0 | ... | ... | ... | | | |
| PRACTICAL SURGERY | Prof. Jordan Lloyd | 2 2 0 | Dr. Lansdown | 3 3 0 | Mr. Wherry | | Mr. Littlewood | ... |
| OPERATIVE SURGERY | | | Mr. Bush | 3 3 0 | | | | |
| BOTANY | *Bacteriology and Pub. Health D.P.H. Course):* Prof. R. F. C. Leith and Mr. Leedham-Green | ... | ... [*Bacteriology:* Prof. Stanley Kent. £5 5s.] | 3 3 0 ... | Prof. Marshall Ward<br>Mr. Darwin, Mr. Blackman | | Prof. Miall | 5 5 0 |
| HYGIENE AND PUBLIC HEALTH | Prof. J. T. J. Morrison | 4 4 0 | Dr. Eager | 3 3 0 | Dr. Anningson | | Mr. Hartley | 3 3 0 |
| MEDICAL JURISPRUDENCE | Dr. A. B. Hill | | | | ... | | Dr. Campbell | 5 5 0 |
| MENTAL DISEASES | Prof. Whitcombe | 2 2 0 | Dr. Parker | ... | Dr. Coulton Rogers | | Mr. Lewis | 3 3 0 |
| PRACTICAL CHEMISTRY | Prof. P. F. Frankland & Dr. Innes | 3 3 0 | Prof. Young | 3 3 0 | Prof. Liveing | | Prof. Smithells | 4 4 0 |
| PRACTICAL PHYSIOLOGY & HISTOL. | Prof. Carlier & Dr. J. H. Rhodes | 4 4 0 | Prof. Stanley Kent | ... | Sir M. Foster and Dr. Langley | | Prof. Birch | ... |
| CHEMICAL PHYSICS | Prof. Poynting and Mr. Allan | 5 5 0 | ... | .. | Prof. Liveing, Prof. Thomson | | Prof. Stroud | 6 6 0 |
| COMPARATIVE ANATOMY | Prof. Bridge | 2 12 6 | Prof. Morgan | 4 4 0 | *Prof. Newton (Winter, Mr. Sedgwick) | | Prof. Miall | ... |
| PATHOLOGY & MORBID ANATOMY | *Pract. Path. and Bacteriology:* Prof. Leith, C. Leedham Green, & W. D'Este Emery. £4 4s.] | ... | Prof. Clarke | 5 5 0 | Prof. Woodhead and Mr. Pigg | | Prof. Trevelyan and Demonstrator | 4 4 0 |
| PRACTICAL HISTOLOGY | ... | ... | ... | ... | Dr. Hill, Dr. Barclay Smith | | Prof. Birch and Demonstrator | ... |
| DENTAL SURGERY | Mr. Huxley | 3 3 0 | Mr. Ackland | 3 3 0 | Dr. Cunningham | | ... | ... |
| DENTAL ANATOMY & PHYSIOLOGY | Mr. Humphreys | 3 3 0 | Prof. G. M. Smith | 3 3 0 | Dr. Cunningham | | ... | ... |
| DENTAL METALLURGY | Mr. Melland | 2 2 0 | Dr. Hayman | 3 3 0 | ... | | ... | ... |
| DENTAL MECHANICS | Mr. Donagan | 2 2 0 | Dr. Hayman | 3 3 0 | ... | | ... | ... |
| CLINICAL MEDICINE | Physicians of the two Hospitals. | ... | ... | ... | The Physicians | | Physicians of the Infirmary | ... |
| CLINICAL SURGERY | Surgeons of the two Hospitals. | ... | ... | ... | The Surgeons to Addenbrooke's Hospital | | Surgeons of the Infirmary | ... |
| | [*Dental Pathology & Histology.* Mr. J. D. Whittles. £2 2s.] | | [*Pharm. & Ther.:* Dr. Prowse, £3 3s. *Pract. Medicine:* Prof. Shaw, £4 4s.] | | | | [*Practical Pharmacy:* Mr. Branson] | |
| FEES for all the Lectures required by the College and Hall | [*Dean of the Faculty:* Prof. Windle] | 84 0 0 | ... | 68 5 0 or 57 15 0 | ... | | [*Ophthal.:* Mr. Secker Walker] | 3 3 0 ... |
| Composition Fee for Hospital Medical and Surgical Practice | [*Operative Dental Surgery:* Mr. Madin. £2 2s.] [*Diseases of Mouth:* Mr. Marsh, Dr. Stacey Wilson. £2 2s.] | 42 0 0 | [*Pract. Midwifery:* Dr. Swayne, £1 1s.] | 36 15 0 | ... *With Zoology | | ... | 42 0 0 |

The fee for each course of lectures or demonstrations is one to three guineas per term.

in the infirmary, and separate instruction is afforded in the elements of Medical and Surgical Physical Diagnosis, in Oostetric Medicine, Ophthalmic Surgery, and Pathological Anatomy by the different members of the staff of the Medical School and Infirmary. The following entrance scholarships are offered for award to persons of either sex proposing to enter a medical course of study at the College:—Seaton.—One of £40, tenable for two years. Subjects: Greek and Latin Translation at sight, and Prose Composition. Credit given for knowledge of Mathematics (Geometry and Algebra); Elements of English Language, Literature, and History; French and German. Rogers.—One of £40, tenable for two years. Subjects as in Seaton. Dalton.—Two of £40, tenable for two years. Subjects: Geometry (Euclid I.—IV., and VI., or the subjects thereof); Algebra (as far as the Binomial Theorem, inclusive). Plane Trigonometry (to Solution of Triangles); Elementary Analytical Geometry; Conic Sections. Credit given for knowledge of Classics, Elements of English Language, Literature, and History; French and German. Cartwright.—£35 per annum, tenable for three years. Subjects as in Dalton. Hulme.—£35, tenable for three years. Subjects: English Language (Grammatical Structure and Outlines of its History); English Literature (an essay on some subject of English literature); and Modern History (Outlines of English History and Geography); with at least two of the following: Latin (Translation at sight, Grammar and Easy Composition); Greek (ditto); French (ditto); German (ditto). Credit given for knowledge of Mathematics (Geometry and Algebra). James Gaskill.—£40, tenable for two years. Subjects: Mathematics, Geometry (the substance of Euclid I.—IV. and VI.), Algebra (as far as the Binomial Theorem, inclusive), Plane Trigonometry (to Solution of Triangles), Elementary Mechanics, Chemistry Credit given for knowledge of Classics, Elements of English Language. Literature, and History, and French and German. Bleackley Scholarship.—£20 per annum, tenable for three years. Candidates may select such of those subjects as they desire from amongst those set for the other Entrance Scholarships. A special paper will also be set in Natural History if required. Manchester Grammar School.—£18 per annum, tenable for three years. The examinations for all these scholarships are held in the month of June. Kay-Shuttleworth (Sir James Phillips). — £30 per annum, tenable for three years. Subjects: Mathematics, Elementary Mechanics, Chemistry. Dauntesey Medical Scholarships.—Two Scholarships of £35 each are open to all students preparing for a medical course who shall not have attended lectures or Laboratory courses on human anatomy or physiology, or a purely medical or surgical course in the Owens College or any other Medical School in the United Kingdom. Candidates will be examined in Zoology, Botany, and Chemistry. Medals are awarded on the results of the various class examinations at the end of each session. A Platt Physiological Scholarship of £50 a year for two years is offered annually to the competition of persons whether previously students of the College or not. Two Platt Exhibitions, of the value of £15 each, to be competed for by first and second year students in the class of Physiology, and a Sidney Renshaw Exhibition in Physiology of the value of £15 to be competed for by second year students in Physiology. A Dumville Surgical Prize of £15, a Turner Medical Scholarship of £20, and a John Henry Agnew Scholarship in Diseases of Children of £30 are offered annually for competition. A Bradley Memorial Scholarship in Clinical Surgery of the value of £20 and Medical and Surgical Clinical Prizes, each of the value of 6 guineas, are open to competition each year for the best reports (with comments) of cases which have occurred in the wards of the infirmary.

MANCHESTER ROYAL INFIRMARY (291 beds). — Consulting Physicians: Drs. Frank Renaud, H. Browne, and Henry Simpson. Consulting Surgeon: Mr. George Bowring. Physicians: Drs. J. Dreschfeld, Graham Steell, Thos. Harris, and J. S. Bury. Assistant Physicians: Drs. A. T. Wilkinson and Ernest S. Reynolds. Consulting Obstetric Physician: Dr. Lloyd Roberts. Obstetric Physician Dr. Archibald Donald. Surgeons: Messrs. Walter Whitehead, Jas. Hardie, F. A. Southam, and G. A. Wright. Assistant Surgeons: Messrs. Wm. Thorburn, Joseph Collier, and J. E. Platt. Consulting Ophthalmic Surgeon: Dr. D. Little. Ophthalmic Surgeon: Dr. Hill Griffith. Aural Surgeon: Dr. William Milligan. Consulting Dental Surgeon: Mr. G. W. Smith. Dental Surgeon: Mr. W. A. Hooton. Pathological Registrar: Dr. F. C. Moore. Medical Registrar: Dr. T. N. Kelynack. Surgical Registrar: Mr. T. Gregory. Director of the Clinical Laboratory: Dr. W. E. Fothergill. Administrators of Anæsthetics: Mr. Alexander Wilson and Mr. J. T. Smith. Assistant Medical Officer for Out and Home Patients: Mr. F. D. Woolley. Assistant Surgical Officer for Out and Home Patients: Mr. M. J. O'Flanagan. General Superintendent and Secretary: Mr. W. L. Saunder. The Winter Session commences Oct. 1st.

BARNES CONVALESCENT HOSPITAL. Cheadle, Cheshire (in connexion with the Manchester Royal Infirmary; 136 beds).—Secretary: Mr. W. L. Saunder. Resident Medical Officer: Dr. Alan McDougall.

RADCLIFFE INFIRMARY, Oxford (146 beds). — At this infirmary instruction is given to medical students. Clinical lectures are given by the Lichfield Clinical Lecturers in Medicine and Surgery. Also tutorial instruction and demonstrations are given in special Regional Anatomy (medical and surgical), methods of Medical Diagnosis, and Surgical Manipulation. Demonstrations of Elementary Pathology are given in the post-mortem room and at the Pathological department of the museum by the Regius Professor of Medicine or his Deputy. Practical Pharmacy is taught in the Infirmary Dispensary. The whole course of study at the museum and infirmary combined is intended for students until they have passed the Second Conjoint Examination or the First Oxford M.B. Mr. R. H. A. Whitelocke has been appointed Surgeon in place of Mr. Winkfield, resigned; and Dr. Ernest Mallam has been appointed Assistant Physician.

UNIVERSITY COLLEGE, SHEFFIELD—DEPARTMENT OF MEDICINE.—The Medical School has been incorporated by Royal Charter with Firth College and the Sheffield Technical School, under the title of University College, Sheffield. An entrance scholarship of the value of £110 is awarded annually to the best candidate (if of sufficient merit) in Mathematics, Elementary Physics, Inorganic Chemistry, Latin, and English. Prizes for Clinical Medicine and Surgery of 10 guineas are offered by the Clinical Committee. Kaye Scholarship for second-year students native of Sheffield is awarded annually under certain regulations. Prizes in books and certificates are awarded annually. The medical school is provided with anatomy theatre, dissecting-room, physiological laboratory, museum, library, and class-rooms. New premises have been acquired near the College for the Pathological Museum and Laboratory and a Bacteriological Laboratory which has been completely equipped through the generosity of "a Sheffield citizen." The courses of instruction for the D.P.H. Public Health are recognised by the Royal College of Surgeons and Cambridge University. The physiological department has been entirely reconstructed and equipped in memory of the late President of the school, Mr. Wm. F. Favell. The department consists of a lecture and demonstration theatre, preparing-room, and galvanometer room. The theatre and laboratory are supplied with the most modern appliances for thorough instruction in theoretical and practical physiology. Each student has his own laboratory bench, with gas, water, electric light, and the requisite apparatus. The course of lectures and instruction is adapted to meet the requirements of the various examining bodies. The Sheffield Royal Infirmary contains 240 beds, including Ophthalmic and Dermatological departments and post-mortem theatre, with microscopes and all the appliances for clinical research. The Sheffield Royal Hospital contains 125 beds and Dental and Ophthalmic departments, and is recognised by the examining bodies. Perpetual fee for hospital practice £45 in one payment; or by two instalments: £26 on entering for hospital practice, and 22 guineas within twelve months afterwards. Composition fee for lectures and practical courses 60 guineas; or in two instalments: 35 guineas at commencement of medical study and 30 guineas at beginning of the second year. Students are also admitted to the practice of the Jessop Hospital for Diseases of Women, to the Borough Fever Hospitals, and the South Yorkshire Asylum. The completely equipped dental department has been recognised by the examining bodies. Dr. A. Young has been appointed Lecturer on Forensic Medicine in place of the late Dr. H. Rhodes. Mr. A. M. Connel demonstrator of Pathology, and Mr. P. E. Barber demonstrator of Anatomy. Dental Department: Mr. J. Lee Pike lecturer on Dental Mechanics, Mr.

F. G. Mordaunt Dental Anatomy and Physiology, Mr. F. Harrison Dental Surgery and Pathology, Mr. A. McWilliam Dental Metallurgy. Dental Hospital Practice in the Sheffield Royal Hospital. Clinical Surgery, F. J. Birks. Clinical Medicine, F. J. Birks and C. W. Smith. Simon Prize in Pathology £10, F. J. Birks. Entrance Scholarship, D. M. Henry. The Winter Session will commence on Monday, Oct 1st.

JESSOP HOSPITAL FOR WOMEN, Gell-street, Sheffield.—The hospital is devoted to Diseases Peculiar to Women. There is also an Obstetric Department for the admission of a small number of cases. A staff of midwives connected with the hospital attend lying-in women at their own homes, and, in case of need, are assisted by the members of the medical staff. Out-patients are attended daily. Students can attend the practice of the hospital and be supplied with cases of midwifery. Communications should be addressed to the Secretary, York Chambers, York-street, Sheffield.

ROYAL DEVON AND EXETER HOSPITAL, Exeter.—Medical and Surgical Staff: Consulting Physician: Dr. Drake. Physicians: Drs. H. Davy and William Gordon. Consulting Surgeons: Messrs. A. J. Cumming, T. W. Caird, and James Bankart. Surgeons: Messrs. J. D. Harris, E. J. Domville, Charles E. Bell, and A. C. Roper. House Surgeon: Mr. P. H. Stirk. Assistant House Surgeon: Mr. E. D. Warren. Junior Assistant House Surgeon: Mr. Jenkins Howell. The hospital contains 218 beds (including special children's wards) and has a good library, museum, dissecting room, and post-mortem room. Attendance on the practice of this hospital qualifies for all the examining boards. Arrangements can be made by which students can attend Midwifery on application to the House Surgeon. There is also a Private Nursing Staff attached to the Hospital. For particulars as to fees, &c., apply to the Matron. A new wing has lately been added.

WEST OF ENGLAND EYE INFIRMARY, Exeter.—Physician: Dr. William Gordon. Surgical Staff: Messrs. Bankart and Tosswill. Assistant Surgeon and Registrar: Mr. Roper. Secretary: Mr. Ernest W. Toby. The infirmary contains 50 beds. Students of the Exeter Hospital can attend the practice of the Eye Infirmary. Patients for the year ending Michaelmas, 1899, 2518. Total number of patients since the opening of the Infirmary in 1808, 97,720. Days of admission: Mondays, Tuesdays, and Fridays, at 11 A.M.

KENT AND CANTERBURY GENERAL HOSPITAL.—Opened for the reception of patients April 26th, 1793. 58,565 in-patients and 103,342 out-patients have been admitted since the hospital was opened. The hospital contains 106 beds. Pupils of the staff are admitted to the practice of the hospital and have the use of the library of the East Kent and Canterbury Medical Society for £7 7*s*. Operation day, Thursday, 11 A.M. Physician: Dr. Henry Alex. Gogarty. Consulting Surgeon: Mr. James Reid. Surgeons: Messrs. Frank Wacher, T. Whitehead Reid, J. Greasley, and Sydney Wacher. Dentist: Mr. R. S. N. Faro. House Surgeon: Mr. W. Ewart. Assistant House Surgeon: Mr. D. Heron. Secretary: Mr. Arthur J. Lancaster. Over 700 in-patients, 2000 out-patients and casualties, and 500 dental cases are attended in a year.

ROYAL INFIRMARY, Liverpool. — The buildings of the new Royal Infirmary were completed and occupied as recently as 1890. They stand on the old site, adjacent to the College, but enlarged by the purchase of a fine frontage in Pembroke-place and with the nurses' home spread over some four acres of ground. Externally, they form a handsome and imposing group of buildings. Every available open-air space has been taken advantage of to secure good airing grounds for the patients, and the beauty of the buildings has been not a little enhanced by the numerous balconies, colonnades, and flat roofs adapted to the same purpose for both patients and resident staff. Internally, no point in modern sanitary science has been omitted. There are 295 beds exclusive of the Lock Hospital. The wards—some parallelograms, some circular—have walls of glazed bricks and floors of waxed oak blocks laid on an iron and cement substratum. Three operating theatres and a clinical lecture theatre have been provided. There is an electrical room and provision for special kinds of baths. The out-patient department comprises rooms for the treatment and study of minor medical and surgical maladies, for diseases of the eye, skin, larynx, nose, and teeth, as well as a gynæcological department. There is also a Lock Hospital. A room has been allotted to the clinical tutors, in which they may keep their records, whilst each physician and surgeon has a private room in connexion with his wards, where his clerks and dressers may write up and tabulate cases and investigate morbid products. The pathological department, which is daily becoming of more importance in medical education, has had much pains expended upon it, so as to give proper facilities for the study of morbid anatomy. It is hoped that the facilities for clinical work will be such as not merely to enable the present students to learn the practical parts of their profession thoroughly, but to attract students from overcrowded institutions where the number of pupils is far in excess of the opportunities for the bedside study of disease. There are eight house physicians and surgeons who are selected every six months from amongst the qualified students of the school. In no hospital in the country is the resident staff so comfortably lodged. Each is provided with a bedroom and a private sitting-room in addition to the music-room and dining-room, where all meet in common; a Students' Club Room is also set aside for their exclusive use. Dr. James Barr, Secretary of Medical Board, 72 Rodney-street, Liverpool.

LIVERPOOL ROYAL SOUTHERN HOSPITAL (CLINICAL SCHOOLS).[2]—Honorary Consulting Surgeons: Mr. Robert Hamilton and Dr. Henry G. Rawdon. Honorary Physicians: Drs. John Cameron, Wm. Carter, and Wm. Williams. Honorary Surgeons: Dr. Wm. Alexander, Mr. Robert Jones, and Dr. Geo. P. Newbolt. Consulting Pathologist: Professor R. W. Boyce. Lecturer on Practical Medicine: Dr. C. J. Macalister. Honorary Consulting Physician for Tropical Diseases: Major Ronald Ross, I.M.S. Pathologist: Dr. F. H. Barendt. Medical Tutors: Dr. C. J. Macalister and Dr. Hugh R. Jones. Demonstrator of Bacteriology: Dr. H. E. Annett. Honorary Ophthalmic Surgeon: Mr. R. Williams. Honorary Aural Surgeon: Mr. C. G. Lee. Honorary Laryngologist: Dr. W. Permewan. Honorary Photographer (the x Rays Photography): Dr. C. Thurstan Holland. Honorary Anæsthetist: Mr. J. G. Martin. Honorary Dental Surgeon: Mr. J. Royston. House Surgeon: Mr. M. A. Archdale. Junior House Surgeons: Mr. Harold Nuttall and Dr. A. H. Evans. The hospital is situated within convenient distance of the School of Medicine and contains 200 beds. There are special wards for accidents and Diseases of Children, and there are also beds appropriated to the Diseases of Women. Clinical teaching is given in the hospital and arrangements have been made to render it both thorough and systematic. The members of the staff visit the wards daily and clinical lectures are given every week. Tutorial classes are also held each day at which the junior students are instructed in the methods of diagnosis and the seniors are prepared for their final examinations. The pathological department has a good laboratory attached in which the students receive practical instruction. Recently a bacteriological laboratory has been added, where students are able to obtain a practical knowledge of bacteriology in relation to medicine. In connexion with the hospital a course of instruction for gentlemen desirous of obtaining a Diploma in Public Health is given, and with this object a chemical laboratory under Mr. Herbert Davies, M.A. Camb., B.Sc. Lond., has been opened. In addition to the usual clinical and post-mortem clerkships, which are open to all students, the resident post of Ambulance Officer is awarded every three months to the student whom the board may consider most suited to hold it. A Scholarship of £20 is competed for annually, which has attached to it some clinical and pathological duties; and three prizes of £5 each are yearly offered for the best series of clinical reports. Fees: Perpetual £26 5*s*.; one year £10 10*s*.; six months £7 7*s*.; three months £4 4*s*. A limited number of resident pupils can be received. Terms (exclusive of fees for Hospital Practice), £15 15*s*. per quarter. The practice of the hospital is recognised by all examining bodies. For further particulars apply to the Dean, Mr. Robert Jones, 11, Nelson-street, Liverpool.

LIVERPOOL NORTHERN HOSPITAL (160 beds).[3]—There is a special ward for the treatment of children. Clinical instruction is regularly given by the physicians and surgeons during the summer and winter sessions. Clinical clerkships and dressership are open to all students without additional fee. Consulting Surgeon: Dr. W. Macfie Campbell. Physicians: Dr. E. H. Dickinson, M.A., and Dr. Bushby.

[2] No returns. [3] No returns

Surgeons: Messrs. Chauncy Puzey, Damer Harrisson, and R. W. Murray. Fees for hospital attendance: Perpetual, £26 5*s.*; one year, £10 10*s.*; six months, £7 7*s.*; three months, £4 4*s.*; Practical Pharmacy, £2 2*s.* Students can enter to the medical or the surgical practice separately on payment of half the above fees. The foundation-stone of a new hospital of not less than 200 beds has been laid in which there will be every facility for clinical teaching and accommodation for resident pupils.

NORFOLK AND NORWICH HOSPITAL (220 beds).—Non-resident Pupils admitted. Fees: For three months, £3 3*s.*; for six months, £5 5*s.*; as permanent pupil, £8 8*s.* Consulting Physicians: Sir P. Eade, M.D., and Sir Frederic Bateman, M.D. Consulting Surgeons: Mr. W. Cadge and Dr. Beverley. Physicians: Dr. Barton, Dr. Burton-Fanning, and Dr. Long. Surgeons: Mr. Williams, Mr. H. S. Robinson, and Mr. S. H. Burton. Assistant Surgeons: Mr. D. D. Day and Mr. H. A. Ballance. Dental Surgeon: Mr. H. F. White. House Surgeon: Mr. G. E. Dodson. House Physician: Mr. A. L. Vaughan. Secretary: Mr. Poole Gabbett.

NORTHAMPTON GENERAL INFIRMARY (established 1743; rebuilt 1793).—The number of beds is 163. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given in Anatomy and Materia Medica and Practical Pharmacy. Non-resident pupils are taken at a fee of £10 10*s.*

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-on-Trent.—The New Infirmary, opened in 1869, is built on the pavilion plan, has accommodation for over 200 patients, including Children's wards, special Ovarian wards, and a special department for the treatment of Diseases of the Eye. In-patients last year, 1977; out-patients, 10,812. The attendance of pupils at this infirmary is duly recognised by all the examining boards; and there are unusual facilities for acquiring a practical knowledge of the profession. Physicians: Dr. A. M. McAldowie and Dr. S. King Alcock. Surgeons: Mr. W. D. Spanton and Dr. G. Stokes Hatton. Assistant Physicians: Dr. Hubert Nicholls and Mr. John Russell. Assistant Surgeons: Dr. Wheelton Hind and Mr. Reginald Alcock. Ophthalmic Surgeon: Mr. Herbert H. Folker. Assistant Ophthalmic Surgeon: Mr. J. F. Arlidge. Dental Surgeon: Mr. A. Baines. House Surgeon: Mr. H. Hartley. House Physician: Dr. W. E. L. Horner. Secretary and House Governor: Mr. Albert E. Boyce.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL (founded 1845; beds, 230).—A preparatory school of Medicine and Surgery. The pupils have the advantage of seeing the whole of the practice of the physicians and surgeons and are trained in clinical work by the medical and surgical staff. The attendance of pupils at this hospital is recognised by all the examining boards.

SUSSEX COUNTY HOSPITAL (190 beds).—During the year 1899, 1804 in-patients have been treated. The total number of out-patient attendances on the books during 1899 was 31,282. This hospital affords ample facilities for students, possessing a large out-patient department, a library, and a well-appointed museum. The hospital does not take resident pupils, but out-pupils may attend the practice of the hospital for any period not exceeding two years on payment in advance of such a fee, not exceeding 20 guineas, as the Committee of Management shall direct.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury and Gartside-street.—The hospital contains 140 beds. The medical staff visit the hospital daily at 10 A.M. Clinical instruction is given by the medical staff at the Hospital and Dispensary. Out-patients are seen daily at 9 A.M. at the Dispensary, Gartside-street, Manchester. Physicians: Drs. Ashby and Hutton. Surgeon: Mr. G. A. Wright. Assistant Surgeon: Mr Joseph Collier. Anæsthetist: Mr. F. R. Westmacott. Honorary Dental Surgeon: Mr. C. H. Preston. Resident Medical Officers: Mr. W. J. S. Bythell and Mr. L. R. Lempriere. Medical Officer at the Dispensary: Mr. H. Osborne. During 1899 there were 1443 in-patients, and 14,886 out-patients were under treatment at the Dispensary.

THE MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Cheetham-hill-road, Manchester.—The hospital is situated near the centre of the town and contains 70 beds. Out-patients are seen daily at 9.30 A.M. and the wards are visited at 11 A.M. Secretary, Mr. H. Teague, 38, Barton-arcade, Manchester.

# SCOTLAND.

## MEDICAL SCHOOLS WITH FULL CURRICULUM.[1]

### EDINBURGH.

SCHOOL OF MEDICINE OF THE ROYAL COLLEGES, Edinburgh.—The number of students varies much in the classes and subjects. It is within the limit to say that about 1300 students avail themselves each year of the opportunity of attending the school. The lectures qualify for the University of Edinburgh and other Universities, the Royal Colleges of Physicians and Surgeons of Edinburgh, London, and Dublin, the Faculty of Physicians and Surgeons of Glasgow, and other Medical and Surgical and Public Boards.

The anatomy rooms and laboratories will open on Monday, Oct. 1st. On Tuesday, Oct. 16th, the lectures will commence.

In accordance with the statutes of the University of Edinburgh one-half of the qualifying classes required for graduation may be attended in this school, in addition to the class of Practical Materia Medica and the classes of Clinical Medicine and Clinical Surgery. The regulations require that the fee for any class taken for graduation in Edinburgh shall be the same as that for the corresponding class in the University. The whole education required for graduation at the University of London may be taken in this school.

The following Order of Study is recommended as a guide to the student for a five years' course, though not enjoined:—First Year: Biology, Physics, Anatomy, Practical Anatomy, Chemistry, and Practical or Analytical Chemistry. Second Year: Anatomy, Practical Anatomy, Physiology, Practical Physiology, Surgery, and Materia Medica—the last either in this or the Third Year—and Hospital. Third Year: Practice of Medicine, Clinical Surgery, Practical Pharmacy, Clinical Medicine, Pathology, and Hospital. Fourth Year: Surgery or Clinical Surgery, Midwifery and Diseases of Women and Children, Practice of Medicine or Clinical Medicine, Medical Jurisprudence, Practical Midwifery, Operative Surgery, and Hospital. Fifth Year: Classes on Special Subjects, Hospital, and Dispensary Practice.

The appointment of Resident Physician to the wards in the Royal Infirmary under the care of the Ordinary Physicians is open to those members of their clinical class who have clerked in their wards for at least six months. Six Residentships are appointed during the year for a period of six months each. Resident Surgeons are also appointed by the Ordinary Surgeons to the Hospital. In all respects the students are taught under regulations similar to those at the University of Edinburgh and the other Universities of Scotland, and they receive similar certificates at the close of each session. Moreover, the University and College authorities in Edinburgh and the governing board of the school call upon each recognised lecturer to supply them at the close of each session with a statement giving the number of students attending the class, the number of lectures or prelections delivered during the session, the class examinations held, and the general mode of conducting the class. The courses on special non-qualifying subjects have for the last quarter of a century formed a marked feature of the school. Indeed, such medical subjects could be studied in Edinburgh only in this school until lately, when the University of Edinburgh appointed from the school lecturers on Diseases of the Eye, Insanity, and Diseases of Children to take charge of classes intra-murally. A list of the classes and lecturers will be found below. Special courses of instruction for dental students and for women are also included in the curriculum of this school. The classes of the school are conducted in several separate buildings, such as at Surgeons' Hall, Minto House, Nicolson-square, and the New School, Bristo-street.

*Lecturers and fees.*—Winter Session: Anatomy, Practical Anatomy, and Demonstrations, Drs. Ryland Whitaker and R. J. A. Berry (£3 5*s.* and £4 4*s.*); Chemistry (Practical, &c.), Dr. S. Macadam, Mr. King, Mr. I. Macadam, and Dr. Readman*; Physiology (Institutes of Medicine), Dr. Noël Paton (£3 5*s.*); General Pathology, &c., Drs. Bruce, Russell, and Shennan (£3 5*s.*); Botany, Mr. R. Turnbull;† Practice of Physic, Drs. James, Affleck, Bramwell, Gibson, Philip, Graham Brown, R. A. Fleming,

[1] For Scholarships see p. 712, et seq.

and G. Lovell Gulland (£3 5s.); Surgery. Messrs. Caird, Hodsdon, Shaw Maclaren, Thomson, and Wallace (£3 5s.); Materia Medica, &c., Drs. Craig,† and Lockhart Gillespie (£3 5s.); Midwifery, &c., Drs. Hart, Murray, and Haultain (£3 5s.); Medical Jurisprudence, &c., Dr. Littlejohn and Dr. Aitchison Robertson (£3 5s.); Natural Philosophy, Dr. Turner (£3 5s.); Hospital Practice (Edinburgh Royal Infirmary): Physicians, Drs. Affleck, Smart, James, and Croom; Surgeons, Messrs. Duncan and Miller, Drs. Maclaren and MacGillivray (perpetual ticket. £12 12s.); Clinical Medicine, Drs. Affleck, Smart, James, Byrom Bramwell, and Croom (Diseases of Women) (£3 5s.); Clinical Surgery, Dr. Maclaren, Dr. Macgillivray, Mr. Cotterill, and Mr. Cathcart (£3 5s.); Diseases of Children, the staff of the Sick Children's Hospital (£2 2s.); Diseases of the Skin, Dr. Stirling† (£2 2s.); Diseases of the Chest, Dr. Philip† (£2 2s.); Vaccination, Drs. Husband,† Buist,† and Cadell (£1 1s.); Diseases of Ear, Nose, and Throat, (£2 2s.); Diseases of the Eye, Dr. G. Mackay,† and Dr. Sym† (£2 2s.); Gynæcology, Drs. Croom (Systematic), Brewis (Clinical), and Berry Hart (Advanced), (£2 2s.); Summer Session: Practical Anatomy and Demonstrations, Drs. Ryland Whitaker and R. J. A. Berry (£2 2s.); Practical Physiology, Dr. Paton (£3 3s.); Biology, Mr. Turnbull‡ (£3 3s.); Botany, Mr. Turnbull; Practical Chemistry and Analytical Chemistry, Dr. S. Macadam, Messrs. King, I. Macadam, and Dr. Readman§; Practical Bacteriology, Dr. Shennan and Dr. Taylor Grant; Diseases of the Eye, Dr. Mackay‡ (£2 2s.); Diseases of the Skin. Dr. Stirling (£2 2s.); Medical Psychology and Insanity, Sir J. Batty Tuke (£2 2s.); Medical Jurisprudence, Drs. Littlejohn and Aitchison Robertson; Gynæcology, Drs. Brewis and Haultain (£2 2s.); Midwifery, Drs. Croom, Hart, Barbour, and Ferguson (£3 5s.); Operative Surgery, Messrs. Caird, Hodsdon, Shaw, McLaren, Alexis Thomson, and David Wallace (£3 3s.); Practical Pathology, Drs. Bruce, Russell, and Shennan (£3 3s.); Physics, Dr. Turner‡ (£3 3s.); Practical Medicine and Physical Diagnosis, Drs. James, Gibson, Philip, Fleming, and Lovell Gulland (£3 3s.); Practice of Medicine, Drs. Bramwell, Gibson, and Philip (£3 3s.); Medical Electricity, &c., Dr. Turner (£2 2s.); Diseases of the Circulation, Dr. Gibson (£2 2s.). Neurology, Dr. Bruce; Diseases of the Nervous System, Dr. Graham Brown; Practical Bacteriology, Dr. Shennan and Dr. Taylor Grant.

Special Classes for Women, Winter Session: Practical Anatomy and Demonstrations, Dr. Ryland Whitaker (£4 4s.); Chemistry (Lectures and Practical), Mr. Ivison Macadam (£3 5s. and £3 3s.); Practice of Physic, Drs. Philip and Graham Brown (£3 5s.); Surgery, Mr. Thomson and Mr. McLaren (£3 5s.); General Pathology, Dr. Russell (£3 5s.); Physiology (Institutes of Medicine), Dr. Noël Paton (£3 5s.); Practical Pathology, Dr. Bruce, &c. (£3 5s.); Materia Medica, &c., Dr. Craig (£3 5s.); Clinical Medicine, Dr. Bramwell, Royal Infirmary (£3 5s.); Clinical Surgery, Royal Infirmary (£3 5s.); Physics, Dr. Dawson Turner (£3 3s.); Biology, Mr. Turnbull (£3 3s.); Diseases of Children, the staff of the Sick Children's Hospital (£2 2s.); Vaccination, Dr. Husband and Mr. Cadell (£1 1s.); Practical Gynæcology, Dr. Brewis (£2 2s.). Summer Session: Practical Anatomy, Dr. Ryland Whitaker and Mr. Hardie (£2 2s.); Practical Chemistry, Mr. Ivison Macadam (£3 3s.); Materia Medica, &c., Dr. Craig (£3 3s.); Operative Surgery and Surgical Anatomy, Mr. Alexis Thomson and Mr. McLaren (£3 3s.); Materia Medica and Therapeutics, vacant (£3 3s.); Midwifery and Diseases of Women, Dr. R. Milne Murray (£3 5s.); Medical Jurisprudence and Public Health, Dr. Harvey Littlejohn (£3 5s.); Clinical Medicine and Clinical Surgery, Royal Infirmary (£3 5s.); Practical Physiology and Histology, Dr. Paton (£3 3s.); Practical Pathology, Dr. Russell (£3 3s.); Biology, Mr. Turnbull (£3 3s.); Physics, Dr. Dawson Turner (£3 3s.); Diseases of Children, the Staff of the Sick Children's Hospital (£2 2s.); Ophthalmology, Dr. Mackay (£2 2s.); Insanity, Sir J. Batty Tuke (£2 2s.); Practical Gynæcology, Dr. Brewis (£2 2s.).

The minimum cost of the education in this School of Medicine for the Triple Qualification of Physician and Surgeon from the Royal Colleges of Physicians and Surgeons of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow, including the fees for the Joint Examinations, is about £115, which is payable by instalments during the period of study.

Further particulars regarding the school, also its calendar, may be had on application to Mr. R. N. Ramsay, the Secretary, 24, Forrest-road, Edinburgh.

* Lectures, £3 5s.; Practical, £3 3s.; Analytical, £2 a month, or £5 for three months. † Also in Summer Session. ‡ Also in Winter Session. § Practical, £3 3s.; Analytical, £2 a month, or £5 for three months.

N.B.—Where two or more lecturers appear as teaching the same subjects their lectures are not conjoined, but each gives an independent course.

## GLASGOW.

ANDERSON'S COLLEGE MEDICAL SCHOOL, Glasgow.—This medical school was founded in the year 1800. It has given twelve professors to the University of Glasgow. The following courses are given, which qualify for all the licensing boards and for the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions):—In winter: Anatomy, Professor A. M. Buchanan, M.A., M.D.; Chemistry, Professor J. Robertson Watson, M.A.; Physics, Professor Peter Bennett; Botany, Professor B. G. Cormack, M.A., B.Sc.; Zoology, Professor Geo. Bell Todd, M.B.; Physiology, Professor W. Ernest Thomson, M.A., M.D.; Surgery, Professor T. Kennedy Dalziel, M.B.; Practice of Medicine, Professor Samson Gemmell, M.D.; Midwifery and Diseases of Children, Professor John Edgar, M.A., B.Sc., M.D.; Materia Medica, Professor R. Barclay Ness, M.A., M.B.; Ophthalmic Medicine and Surgery, T. Spence Meighan, M.D.; Aural Surgery, J. Galbraith Connal, M.B.; Diseases of Throat and Nose, John Macintyre, M.B.; Hygiene and Public Health (as may be arranged). In summer: Anatomy, Practical Anatomy and Osteology, Practical Chemistry, Physics, Zoology, Practical Materia Medica and Pharmacy, Practical Physiology, Operative Surgery. Botany, Ophthalmic Medicine and Surgery, also Medical Jurisprudence (Professor Carstairs Douglas, B.Sc., M.D.), and Mental Diseases (Dr. Carswell); Hygiene and Public Health, and Aural Surgery. The Chemical Laboratory is open daily from 10 to 6. The Dissecting-room is open in winter from 9 A.M. to 6 P.M., and in summer from 6 A.M. to 6 P.M. The students are assisted in their dissections by the Professor and Demonstrators, by whom frequent examinations and demonstrations on the parts dissected are conducted. The supply of subjects for dissection is ample, and students are consequently provided with parts as soon as they may be ready for them. The Dissecting-room is provided with a complete series of dissected specimens, mounted in plaster of Paris, illustrating the anatomy of the human body. Candidates for the licence in Dental Surgery can obtain the full medical curriculum in Anatomy, Chemistry, Physiology, Surgery, Practice of Medicine, and Materia Medica. The courses special to Dentistry are conducted at the Glasgow Dental Hospital and School.

The new buildings are situated in Dumbarton-road, immediately to the west of the entrance to the Western Infirmary, within two minutes' walk of it, and four minutes' walk of the University. Extensive accommodation is provided for Practical Anatomy, Practical Chemistry, Practical Physiology, Practical Pharmacy, Public Health, and Operative Surgery. There are also provided a large library and reading-room and a students' recreation-room.

*Fees.*—For each of the above courses of Lectures (Anatomy, Chemistry, Botany, Zoology, Practical Physiology, Practical Pharmacy, and Mental Diseases excepted), first session, £2 2s.; second session, £1 1s. Anatomy Class Fees: Winter, first session (including Practical Anatomy), £4 4s.; second session (including Practical Anatomy), £4 4s.; third session, £2 2s. To those who have had the necessary courses of Practical Anatomy the fee will be £1 1s. Summer, Lectures and Practical Anatomy, £2 12s. 6d.; Lectures alone, £1 11s. 6d.; Practical Anatomy alone, £1 1s.; Osteology and Practical Anatomy. £2 12s. 6d.; Osteology alone, £1 11s. 6d. Chemistry Fees: First session, £2 2s.; second session, £2 2s. Practical Physiology Fees.—First session, £2 2s. Second session, £2 2s. Practical Materia Medica and Pharmacy Fees.—First session, £2 2s. Second session, £2 2s. Botany fees: Reduced Joint fee for Lectures and Practical Class when taken in same summer session, £3 3s.; for either course separately, £2 2s.; Zoology fee, £1 11s. 6d. Mental Diseases, £1 1s. Matriculation Fees: Winter, 10s. to those taking out two or more classes; 5s. to those taking out only one class. The fee of 10s. represents a combined fee for the winter and summer sessions. Summer, 5s., except to those who have paid a fee of 10s. for the Winter Session. Students who have attended classes at other schools, and who desire to pursue their studies at Anderson's College

Medical School, will be admitted to such classes as they may have attended elsewhere at the reduced fees.

*Royal Infirmary.*—Fees: Hospital Practice and Clinical Instruction, first year, £10 10*s.*; second year, £10 10*s.*; afterwards free. Six months £6 6*s.*; three months, £4 4*s.*; Pathology, both courses, £3 3*s.* Vaccination Fee, £1 1*s.*

*Western Infirmary.* — Fees: Hospital Practice and Clinical Instruction, first year, £10 10*s.*; second year, £10 10*s.*; afterwards free. Six months, £7 7*s.*; three months, £4 4*s.* Pathology, first course, £3 3*s.*; second course, £2 2*s.* Practical Pathology, first course, £3 3*s*, second course, £2 2*s.* Vaccination Fee, £1 1*s.*

*Eye Infirmary.*—Fee: Hospital Practice and Clinical instruction, six months, £1 1*s.*

Certificates of attendance on the lectures at Anderson's College Medical School are received by the Universities of London, Durham, Ireland, Edinburgh, and Glasgow (the latter two under certain conditions); by the Royal Colleges of Physicians of London and Edinburgh; by the Royal Colleges of Surgeons, England, Edinburgh, and Ireland; by the Royal College of Physicians of Ireland; by the Faculty of Physicians and Surgeons of Glasgow; by the Society of Apothecaries, London; and by the Army, Navy, and East India Boards. Communications relating to the Medical School to be addressed to the Secretary of the Medical Faculty, Anderson's College Medical School, Dumbarton-road, Partick, Glasgow. Communications relating to the Preliminary Examination in General Education to be addressed to Mr. Alexander Mackay, LL.D., Educational Institute Office, 40, Princes-street, Edinburgh. Communications relating to the Triple Qualification to be addressed to Mr. Alexander Duncan, LL.D., Faculty Hall, 242, St. Vincent-street, Glasgow. Communications relating to the Dental School to be addressed to Mr. D. M. Alexander, 97, West Regent-street, Glasgow.

The Kerr Bursary in Anatomy (value £10) is open to students of the Junior Anatomy Class during Winter Session 1900-1901.

ST. MUNGO'S COLLEGE AND GLASGOW ROYAL INFIRMARY.—This College was incorporated in 1889. The Glasgow Royal Infirmary was founded in 1791. The Faculty of Medicine of the College occupies new buildings erected for the purposes of a medical school, adjoining and communicating with the Royal Infirmary. The Laboratories, Museums, and Lecture-rooms are equipped and adapted to modern scientific requirements. Recent additions consist of Public Health, Practical Zoology, and Bacteriological Laboratories. The Royal Infirmary, which is at the service of the College for the purpose of clinical and practical instruction, is one of the largest general and special hospitals in the kingdom. It has nearly 600 beds, and will almost immediately have considerably over 600. It has special wards for Diseases Peculiar to Women, for Venereal Diseases, Erysipelas, Burns, and Diseases of the Throat and Nose. At the Dispensary special advice and treatment are given in diseases of the Eye, Ear, Teeth, and Skin, Women, Throat and Nose, in addition to the large and varied number of ordinary medical and surgical cases—over 46,000 per annum—which in a great industrial centre daily require attention. Students of the College and Hospital get the benefit of dispensary experience free of charge. All appointments are open. There are five Physicians' and seven Surgeons' Assistants, who board in the hospital free of charge and act in the capacity of House Physicians and House Surgeons. These appointments are made for six months and are open to gentlemen who have a legal qualification in Medicine or Surgery, and preference is given to the students of this College and Hospital. Clerks and Dressers are appointed by the Physicians and Surgeons. From the large number of cases of acute disease and accidents of varied character received into this hospital these appointments are very valuable. In the Pathological Department assistants are also appointed. The session will open with an address on Oct. 18th at the College buildings.

*Ophthalmic Department.*—The Ophthalmic Institution in West Regent-street having been amalgamated with the Royal Infirmary the usefulness of this department is very much increased, and greater opportunities are afforded to students for the practical study of Diseases of the Eye. Dr. Ramsay, the ophthalmic surgeon, attends the Royal Infirmary every Monday, Wednesday, and Friday at 12 noon, and daily at the Institution in West Regent-street from 1 to 2 o'clock. Students can attend both without payment of any additional fee. Lectures are delivered twice a week during the winter session. Fee for the course, £2 2*s.*

The fee for each class is £2 2*s.*, except for Anatomy, Winter Session, which is £4 4*s.*, Pathology £4 4*s.*, Zoology £4 4*s.*, Botany £3 3*s.*, Practical Physiology, £3 3*s.*, and for Physics, which is £2 4*s.* 6d., and certain extra classes, for which the fee is £1 1*s.* The hospital fee (including clinical lectures) is £21 for a perpetual ticket. The classes in St. Mungo's College and in the Glasgow Royal Infirmary are for male students exclusively. The fees for all the lectures, including hospital attendance, necessary for candidates for the Diplomas of the English or Scotch Colleges of Physicians and Surgeons amount to £72. Further particulars can be obtained from a syllabus which can be obtained free on application to the Dean, 86, Castle-street, Glasgow.

GLASGOW WESTERN MEDICAL SCHOOL.—This School is situated in University-avenue, close to the University and Western Infirmary. Lectures and Demonstrations are given on Chemistry, on Physics, on Anatomy, on Surgery, on Physiology, on Midwifery and Gynæcology, on Medicine, on Materia Medica, and on the Eye.

*Class Fees.*—For each course of Lectures the fee is £2 2*s.*, or in some cases £1 1*s.* There is no matriculation fee.

QUEEN MARGARET COLLEGE, University of Glasgow.—Queen Margaret College was founded in 1883 by the Glasgow Association for the Higher Education of Women (instituted in 1877), and handsome buildings and grounds near the University were presented to the College in 1884 by Mrs. John Elder. In 1890 a School of Medicine for women was added to its Arts Faculty. In 1892, when the Universities Commissioners issued an ordinance empowering the Scottish University Courts to make provision for the instruction of women, the Council of the College and Mrs. Elder transferred to the University the College, its buildings, grounds, and endowments, on condition that these should be devoted to the maintenance of University classes for women only. The College then became the women's department of the University of Glasgow; its classes are taught by professors of the University and other lecturers appointed by the University Court, and it is governed by the University Court and Senate. The curriculum, regulations, and fees are the same as those of the male students, and the University degrees are open to women on the same conditions as to men. They have access to the University Museum and can borrow books from the University Library, besides having a library of reference in Queen Margaret College. The number of students enrolled in session 1899–1900 was 340, of whom 84 were studying medicine and the rest arts or science. The School of Medicine is a special feature of the College and gives full preparation for the medical degrees of the University. In July, 1894, for the first time in the history of any Scottish university, women students graduated in medicine at the "capping" in Glasgow University. 52 women have now taken the degree of M.B., C.M. or M.B., Ch.B. of the University of Glasgow. Excellent facilities for clinical work are given in the Royal Infirmary and other hospitals. By a gift of £5000 granted for the purpose by the Bellahouston Trust the University Court was enabled to add to the College a large building for the study of Anatomy and Physiology, which was opened in October, 1895. The Arthur Scholarship is open every third year to students of first year entered the October previously to the award; the George Grant Bursary has been held by a woman student; and there are other Bursaries open in Arts as well as in Medicine; and the Universities Commissioners have issued an ordinance making regulations for the admission of women to certain University bursaries, scholarships, and fellowships. A house of residence for the students of the College coming from a distance was opened by the Queen Margaret Hall Co., Limited in October of 1894.

## DUNDEE.

UNIVERSITY COLLEGE, Dundee.—This College is one of the constituent colleges of the University of St. Andrews. The complete medical curriculum can be taken in Dundee. For classes, fees, &c., see under University of St. Andrews.

ROYAL INFIRMARY.—The Infirmary contains 300 beds, including special wards for the Diseases of Women, Children, Eye, Ear and Throat, and Lock cases. There is also a Maternity Department, in- and out-door. There were during last year 8092 out-patients and 5894 home patients. The Royal Infirmary offers exceptional facilities for practical work to students. Appointments: Four

TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE MEDICAL SCHOOLS OF SCOTLAND FOR THE SESSION 1900–1901.

| LECTURES &c. | ABERDEEN UNIV. PROFESSORS AND LECTURERS. | ABERDEEN UNIV. FEES. One Course. | ST. ANDREWS UNIV. PROFESSORS AND LECTURERS. | ST. ANDREWS UNIV. FEES. One Course. | EDINBURGH UNIV. PROFESSORS AND LECTURERS. | EDINBURGH UNIV. FEES | GLASGOW UNIV. PROFESSORS AND LECTURERS. | GLASGOW UNIV. FEES. One Course. | ST. MUNGO'S COLL., GLASGOW. LECTURERS. | ST. MUNGO'S COLL., GLASGOW. FEES. One Course. | GLASG., ANDERSON'S COLL. MED. SCHOOL. LECTURERS. | GLASG., ANDERSON'S COLL. MED. SCHOOL. FEES One Course. | GLASGOW WESTERN MEDICAL SCHOOL. LECTURERS. | GLASGOW WESTERN MEDICAL SCHOOL. FEES (One Course). |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WINTER SESSION.** | | £ s. | | £ s. | | £ s. | | £ s. | | £ s. | | £ s. | | £ s. |
| ANATOMY | Prof. R. W. Reid | 3 3 | Prof. Mackay‖ Dr. Musgrove¶ | 3 3 | Prof. Sir W. Turner | 4 4 | Prof. Cleland | 3 3 | Dr. McPhail | 4 4 | Dr. A. M. Buchanan | 4 4§ | Mr. G. H. Edington | 2 2 |
| PRAC. ANAT. & DEMONS. | Prof. Reid | 3 3 | Prof. Mackay‖ Dr. Musgrove¶ | 3 3 | ... | ... | ... | 3 3 | ... | ... | ... | ... | Mr. Edington | ... |
| CHEMISTRY | Prof. Japp | 3 3 | Prof. Purdie¶ Prof. Walker‖ | 3 3 | Prof. Crum Brown (Adv. Class in Sum.) | 4 4 | Prof. Ferguson [*Chemical Lab.*] ... | 3 3 10 10 | Dr. Marshall [*Throat and Nose:* Dr. Fullerton] | 2 2 | Mr. J. R. Watson [*Physics:* Mr. Peter Bennett] | 2 2 2 2 | Dr. C. V. Craster | ... |
| PHYSIOLOGY (INST. OF MED.) | Prof. MacWilliam | 3 3 | Prof. Reid‡ Dr. Harris¶‡ | 3 3 | Prof. Schäfer | 4 4 | Prof. McKendrick | 3 3 | Dr. Barlow | 2 2 | Dr. Ernest Thomson | 2 2 | Dr. Fred. Dittmar | ... |
| GENERAL PATHOLOGY, &c. | Prof. Hamilton (*Syst. & Pract.*) | 3 3 | Prof. Sutherland‖ | 3 3 | Prof. Greenfield | 4 4 | Prof. Muir (*Prac. Path.*)‡ | 3 3 3 3 | Dr. C. Workman | 4 4 | (In Infirmary) | ... | Dr. Hugh McLaren | ... |
| MEDICINE | Prof. D. W. Finlay | 3 3 | Prof. Stalker‖ | 3 3 | Prof. Wyllie | 4 4 | Prof. M'Call Anderson | 3 3 | Dr. Robertson | 2 2 | Dr. Gemmell [*Zoology:* Dr. Todd] | 2 2 1 11 6 | Dr. R. S. Thomson | ... |
| SURGERY | Prof. Alex. Ogston [*Bacteriology:* Prof. Hamilton] | 3 3 3 3 | Prof. MacEwan‖ | 3 3 | Prof. Chiene [*Public Health:* Prof. Hunter Stewart] | 4 4 | Prof. Macewen [*Physics:* Prof. Gray]‡ | 3 3 3 3 | Mr. Clark [*Histology:* Dr. Barlow] | 2 2 3 3 | Dr. Dalziel | 2 2 | Mr. R. H. Parry | 2 2 |
| MATERIA MEDICA, &c. | Prof. Cash | 3 3 | Prof. Marshall‖ | 3 3 | Prof. T. R. Fraser | 4 4 | Prof. Stockman | 3 3 | Dr. Dougall | 2 2 | Dr. R. B. Ness | 2 2 | Vacant | ... |
| MIDWIFERY, &c. | Prof. Stephenson | 3 3 | Prof. Kynoch‖ | 3 3 | Prof. Simpson (*Dis. Wom. & Child.*) | 4 4 | Prof. M. Cameron [*Pub. Health Lab.:* Prof. Glaister] | 3 3 12 12 | Dr. Stirton | 2 2 | Dr. Jno. Edgar [*Dis. of Throat & Nose:* Dr Macintyre] | 2 2 Free | Dr. Marshall [*Ophthalmology:* Dr. Fergus.] | 1 1 1 1 |
| MED. JURISPRUDENCE, &c. | Prof. Hay (In Summer) | 3 3 | Dr. Templeman‡ | 3 3 | Sir H. D. Littlejohn (in Summer only) | 4 4 | Prof. Glaister | 2 2 | Dr. McCrorie] Dr. Galt‡ | 2 2 | DrCarstairs Douglas (in Summer) | 2 2 | Vacant | ... |
| NATURAL HISTORY | Prof. Thomson | 3 3 | Prof. McIntosh¶ Prof. Thompson‖ | 3 3 3 3 | Prof. Ewart | 4 4 | Prof. Young | 3 3 | Dr. M. Laurie¶¶ | 4 4 | [*Public Health:* as may be arranged] | ... | ... | ... |
| NATURAL PHILOSOPHY | Prof. Niven‡ (*Physics*) | 3 3 | Prof. Butler¶ Prof. Kuenen‖ | 3 3 3 3 | Dr. Knott | 3 3 | ... | ... | Mr. Blyth (and *Physics*) | 2 4 6 | [*Dis. of Eye:* Dr. Meighan] | Free | Mr. H. H. Browning | ... |
| HOSPITAL PRACTICE: | ABERDEEN R. INF. | | DUNDEE ROY. INF. | | EDIN. ROYAL INF. | | GLASG. ROY. INF. AND WEST INF. | | | | GLASGOW ROY. OR WESTERN INF. | | | |
| PHYSICIANS | Drs. A. Fraser, Finlay, and Edmond (Daily) | One year, £3 10s. Perpetual, £6. | Prof. Stalker‖ Dr. M. Whyte‖ | £2 2s. a session; £3 3s. a year | ... | Perpet. ticket, £12. | The Physicians and Surgeons of the Infirmaries (and in Summer) | 1st year, £10 10s.; 2nd year & perpetual, £10 10s. | The Physicians & Surgeons of the Glasgow Royal Infirmary | Perpetual, including Clin. Lectures, £21 | The Medical and Surgical Staffs. | 1st yr., £10 10s.; 2nd, £10 10s.; aft. free; 6 mths., £6 6s.; W.I., £7 7s.; 3 mths., £4 4s. | The Physicians & Surgeons in the Western Infirmary. | ... |
| SURGEONS | Drs. Garden, Booth & Riddell. (Daily) | | Prof. MacEwan‖ Mr. Greig‖ | | ... | | ... | | ... | | ... | | ... | ... |
| | | | [*Gynæcologists:* Prof. Kynoch‖ Dr. Buist.‖ | | | | [*Dis. of Ear:* Dr. T. Barr,‡ £1 1] | | [*Hygiene:* Dr. Galt] | | ... | | ... | ... |
| ASSISTANT SURGEONS | Drs. Sinclair, Marnoch, and Gray. | ... | [*Prac. Path.:* Prof. Sutherland ‖] | 3 3 | ... | | [*Dis. of Throat &c.:* Dr. J. W. Downie,‖ £1 1] | | [*Diseases of Skin:* Dr. Alex. Morton‡] | ... | ... | | ... | ... |
| CLINICAL MEDICINE | Drs. A. Fraser, Finlay, and Edmond | 3 3 | Prof. Stalker, & Dr. M. Whyte‖ | 2 2 | Profs. Fraser, Greenfield, Wyllie & Simpson (*Dis. Wom.*) | 4 4 | Pf. M'Call Anderson & Clin. Profs (and in Summer) | ... | Dr. McVail and Physicians of Royal Infirmary | ... | The Physicians [*Dis. of Ear:* Dr. J. Galbraith Connal] | Free | ... | ... |
| CLINICAL SURGERY | Drs. Garden, Booth, & Riddell | 3 3 | Prof. MacEwan‡ & Mr. Greig‖ | 2 2 | Prof. Annandale | 4 4 | Sir H. C. Cameron & Prof. Macewen (and in Summer) | ... | Mr. Knox and the Surgs. of the Royal Infirmary | ... | The Surgeons | ... | ... | ... |
| **SUMMER SESSION.** | | | | | | | | | | | | | | |
| PRAC. ANAT. & DEMONS. | Prof. Reid | 3 3 | Prof. Mackay‖ Dr. Musgrove¶ | 3 3 3 3 | Prof. Sir W. Turner | 3 3 | Prof. Cleland and Demonstrators | 2 2 | Dr. McPhail | 2 2 | Dr A. M. Buchanan‡‡ | 2 2 | Mr. Edington | 2 2 |
| BOTANY | Prof. Trail | 3 3 | Prof. Geddes‖ | 3 3 | [*Physics:* Prof. Tait] Prof. B. Balfour* | 3 3 4 4 | Prof. Bower | 3 3 | Dr. Swanson | 3 3 | Mr. Cormack§§ | 2 2 | ... | ... |
| HISTOLOGY | Prof. MacWilliam [& *Prac. Phys.*] | 3 3 | Mr. Robertson¶†† [*Fevers:* Dr. Templeman] [Walker‖ | 3 3 1 1 | [*Prac. Mat. Medica, Anat., Phys., & Path. Tropical Diseases. Dis. of the Skin*] | ... 3 3 | Prof. McKendrick [*Phys. Lab.*] ... | 3 3 5 5 ... | ... Dr. M. Laurie¶¶ | 2 2 4 4 | Dr. Ernest Thomson [*Physics:* Mr. Peter Bennett, £2 2s.] | 2 2 ... | Dr. Fred. Dittmar | 2 2 ... |
| COMPARATIVE ANATOMY | ... | ... | [Walker‖ | 1 1 | | | | | | | | | | |
| PRACTICAL CHEMISTRY | Prof. Japp | 3 3 | Profs. Purdie¶ & | 3 3 | Prof. Crum Brown | 3 3 | Prof. Ferguson | 3 3 | Dr. Marshall* | 2 2 | Mr. J. R. Watson | 2 2 | Mr. Craster | ... |
| DISEASES OF THE EAR | Dr. McK. Booth | 1 1 | Dr Guild (*& Throat* | 3 3 | Dr. McBride (*or Nose or Larynx, &c.*) | ... | ... | | Dr. J. Kerr Love | 1 1 | ... | ... | ... | ... |
| PRAC. PHARMACY | Prof. Cash | 3 3 | Prof. Marshall‖ | 3 3 | ... | ... | Prof. Stockman | 3 3 | ... | ... | Dr. Ness | 2 2 | ... | ... |
| DISEASES OF THE EYE | Dr. Usher | 1 1 | Dr. McGillivray | 2 2 | Dr. G. A. Berry | 3 3 | Dr. T. Reid | 1 1 | Dr. Ramsay** | 2 2 | Dr. Meighan | Free | Dr. Fergus. | 1 1 |
| DISEASES OF CHILDREN | Prof. Stephenson | 1 1 | Prof. Stalker‖ & Dr. Greig‖ | ... | Dr. Burn-Murdoch* | 2 2 | ... | ... | Dr. Adams | 2 2 | | | ... | ... |
| NATURAL HISTORY | Prof. Thomson | 3 3 | Prof. McIntosh¶ Prof. Thompson‖ | 3 3 3 3 | Prof. Ewart* | 4 4 | Prof. Young (*Lab.*) | 3 3 | Dr. M. Laurie* | 2 2 | [*Public Health:* as may be arranged] | ... | ... | ... |
| MED. PSYCHO. & INSANITY | Dr. Reid | 1 1 | Dr. Rorie (Dundee Royal Asylum) | 2 2 | Dr. Clouston † | 2 2 | Dr. Yellowlees | 2 2 | Dr. A. C. Clark | 2 2 | Dr. Carswell | 1 1 | ... | 1 1 |
| GYNÆCOLOGY | [*Prac. Mid.:* ... | ... | | | Prof. Simpson | 4 4 | Prof. M. Cameron [*Embryology:* ... | 2 2 ... | Dr. Kelly* Dr. Stirton | 1 1 2 2 | Dr. John Edgar [*Zoology:* Dr. Todd] | 2 2 1 11 6 | Dr. Marshall* ... | ... ... |
| MIDWIFERY, &c. | Prof. Stephenson | 1 1 | Prof. Kynoch‖ | 2 2 | | | Dr. Gemmill] | 2 2 | | | | | | |
| OPERATIVE SURGERY | [*Prac. Hygiene:* Dr. Hay] | 3 3 | Prof. MacEwan‖ | 3 3 | Prof. Chiene* | 3 3 | Prof. Macewen | 3 3 | Mr. Clark | 2 2 | Dr. Dalziel | 2 2 | Mr. Parry | 2 2 |

* Also in Winter. † With Clinical Instruction at an Asylum, £3 3s. ‡ In Summer. § This fee includes Practical Anatomy. ‖ Dundee. ¶ St. Andrews. ** In Winter. †† There is a Winter Course in Botany St. Andrews. ‡‡ With Osteology. §§ There is a Winter Session in Botany in Anderson's College Medical School, Glasgow, £2 2s. ‖‖ (United College, St. Andrews, and University College, Dundee.)
¶¶ This fee includes practical class.

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE MEDICAL SCHOOLS OF SCOTLAND FOR THE SESSION 1900-1901—

(CONTINUED).

| LECTURES, &c. | UNIVERSITY OF GLASGOW, QUEEN MARGARET COLLEGE. | |
|---|---|---|
| | LECTURERS. | FEES. |
| **WINTER SESSION.** | | £ s. d. |
| CHEMISTRY | Mr. T. Gray | 3 3 0 |
| PRACTICAL CHEMISTRY | Mr. T. Gray | 3 3 0 |
| PHYSICS | Mr. Blyth | 3 3 0 |
| ANATOMY | Dr. T. H. Bryce | 3 3 0 |
| PRACTICAL ANATOMY AND DEMONSTRATIONS | Dr. T. H. Bryce | 3 3 0 |
| PHYSIOLOGY | Professor McKendrick and Dr. W. B. Brodie, Muirhead Demonstrator | 3 3 0 |
| MATERIA MEDICA | Dr. W. MacLennan | 3 3 0 |
| GENERAL PATHOLOGY | Dr. C. Workman | 3 3 0 |
| MEDICINE | Dr. G. Lindsay Steven | 3 3 0 |
| SURGERY | Dr. J. H. Pringle | 3 3 0 |
| MIDWIFERY | Professor Cameron, Dr J. M. M. Kerr | 3 3 0 |
| HOSPITAL PRACTICE | Glasgow Royal Infirmary | 1st year, £10 10s. |
| CLINICAL MEDICINE | Dr. J. Lindsay Steven, Dr. Dougall | 2nd year, £10 10s. |
| CLINICAL SURGERY | Dr. Adams Dr. Pringle | |
| **SUMMER SESSION.** | | |
| BOTANY | Dr. W. H. Lang | 3 3 0 |
| PRACTICAL BOTANY | Dr. W. H. Lang | 3 3 0 |
| NATURAL HISTORY | Professor Young and Dr. Rankin | 3 3 0 |
| PRACTICAL ZOOLOGY | Professor Young and Dr. Rankin | 3 3 0 |
| PRACTICAL ANATOMY AND DEMONSTRATIONS* | Dr. T. H. Bryce | 2 2 0 |
| EMBRYOLOGY* | Dr. T. H. Bryce | 2 2 0 |
| HISTOLOGY | Professor McKendrick and Dr. W. B. Brodie, Muirhead Demonstrator | 3 3 0 |
| PRACTICAL PHARMACY | Dr. W. MacLennan | 3 3 0 |
| PRACTICAL PATHOLOGY | Dr. Workman | 3 3 0 |
| MEDICAL JURISPRUDENCE AND PUBLIC HEALTH | Professor Glaister | 3 3 0 |
| DISEASES OF THE EYE | Dr. Maitland Ramsay | 2 2 0 |
| DISEASES OF THE EAR | Dr. T. Barr | 1 1 0 |
| MEDICAL PSYCHOLOGY AND INSANITY | Dr. Yellowlees | 2 2 0 |
| OPERATIVE SURGERY | Dr. Pringle | 2 2 0 |

* Embryology and Practical Anatomy, if taken together, £3 3s.

A Class in Fevers is held in the Belvidere Hospital (£1 1s.), and a Class in Vaccination at the Royal Infirmary (£1 1s.).

qualified Resident Medical Assistants are appointed every six months. Clinical Clerks and Dressers are attached to the Physicians and Surgeons, and students are appointed as assistants in the Pathological Department. There are in connexion with the clinical courses Tutorial Classes in Medicine and Surgery. Instruction is also given in Practical Pharmacy and Materia Medica and in Practical Dentistry. Full information can be obtained from Dr. H. E. Fraser, Medical Superintendent.

ROYAL ASYLUM.—Lectures on Mental Diseases and clinical instruction in connexion with University College, Dundee (University of St. Andrew's), are given at the University and at the Royal Asylum by Dr. Rorie. There are two paid qualified Resident Assistants and two unpaid Resident Clinical Assistants. The last Summer Session began on April 25th, 1900, and the course consisted of 12 Lectures at University College and 13 Clinical Lectures and Demonstrations at the Royal Asylum. Edward James Tyrrell and Margaret Scott Dickson obtained Certificates of Merit. Present Medical Assistant: Wm. Tuach, M.B., Ch.B. Clinical Assistants: Mr. Chauncy and Mr. Brownlee. The next Session will begin on April 24th, 1901.

### ABERDEEN.

ABERDEEN ROYAL LUNATIC ASYLUM.—Contains, with hospital attached to main institution and Agricultural Branch, about 850 beds. Medical Superintendent: Dr. William Reid. Assistant Physicians: Dr. W. R. Matthews, Dr. J. H. Mackay, Dr. Arthur L. Sutherland, and Dr. John McKenzie. Clerk, Treasurer, and Factor: Mr. Charles M. Brown. Clinical instruction is given to students during three months in summer.

ABERDEEN ROYAL INFIRMARY.—Contains over 230 beds. Consulting Physician: Dr. P. Blaikie Smith. Physicians: Dr. Angus Fraser, Professor Finlay, and Dr. George M. Edmond. Assistant Physicians: Drs. John Gordon, A. H. Lister, and Ashley W. Mackintosh. Consulting Surgeons: Professor Alexander Ogston, Dr. J. C. O. Will. Surgeons: Drs. R. J. Garden, J. McK. Booth, and J. S. Riddell. Assistant Surgeons: Drs. W. Sinclair, J. Marnoch, and H. M. W. Gray. Ophthalmic Surgeon: Dr. C. H. Usher. Gynæcologist: Professor W. Stephenson. Pathologist: Professor David James Hamilton. Assistant Pathologist: Dr. G. M. Duncan. Dental Surgeons: Dr. J. M. P. Crombie and Mr. John Cromar. Anæsthetist: Dr. J. J. Y. Dalgarno. Assistant ditto: Dr. W. R. Pirie. Medical Electrician: Dr. J. R. Levack. Clinical Registrar: Dr. J. F. Christie. Medical Superintendent: Dr. Charles Angus. Clerk and Treasurer and Factor for the Hospital Lands: Mr. Charles M. Brown.

## HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

ROYAL INFIRMARY, Edinburgh.—Beds are set apart for clinical instruction by the professors of the University of Edinburgh. Courses of Clinical Medicine and Surgery are also given by the ordinary physicians and surgeons. Special instruction is given in the medical department on Diseases of Women, Physical Diagnosis, and on Diseases of the Skin; and in the surgical department on Diseases of the Eye, the Ear, the Larynx, and the Teeth. Separate wards are devoted to Venereal Diseases, Diseases of Women, Diseases of the Eye, the Ear, and the Skin, and also to cases of Incidental Delirium or Insanity. Three wards are specially set apart for Clinical Instruction to Women Students. Post-mortem examinations are conducted in the anatomical theatre by the pathologists, who also give practical instruction in Pathological Anatomy and Histology. The fees for hospital attendance are as follows—viz.: Perpetual ticket, in one payment, £12; annual ticket, £6 6s.; six months, £4 4s.; three months, £2 2s.; monthly, £1 1s. Separate payments amounting to £12 12s. entitle the student to a perpetual ticket. No fees are paid for any medical or surgical appointment. The appointments are as follows:—1. Resident physicians and surgeons are appointed, and live in the house free of charge. The appointment is for six months, but may be renewed at the end of that period by special recommendation. 2. Non-resident house physicians and surgeons are appointed for six months. The appointment may be renewed for a like period by special recommendation. 3. Clerks and dressers are appointed by the physicians and surgeons. These appointments are open to all students and junior practitioners holding hospital tickets. 4. Assistants in the Pathological Department are appointed by the pathologists.

ROYAL HOSPITAL FOR SICK CHILDREN, Sciennes-road, Edinburgh.—This hospital, which has been recently built, contains over 100 beds, and is fitted with every modern improvement. A fully-equipped out-patient department (medical and surgical) is conducted daily in a building adjoining the hospital. Systematic courses of instruction, which qualify for graduation in the Edinburgh University and elsewhere, are given from time to time throughout the year by the staff. Students may enter at any time. Full particulars can be obtained from the Registrar at the hospital.

EYE, EAR, AND THROAT INFIRMARY OF EDINBURGH, 6, Cambridge-street, Lothian-road.—The Infirmary has been entirely re-arranged and greatly improved by recent structural alterations and the electric light introduced; also the electric power is used for illumination and cauterising purposes in all departments. Clinical Lectures and Instruction are given in this institution, which is open at 1 o'clock daily for outdoor patients for Eye Diseases; Mondays, Thursdays, and Saturdays at 12 noon for outdoor Ear, Nose, and Throat Patients; and Tuesdays and Fridays at 4 P.M. for outdoor Ear, Nose, and Throat Patients. Special Practical Ophthalmoscopic Classes by arrangement. Patients whose diseases require operations or more than ordinary care are accommodated in the house. Consulting Surgeon: Dr. Joseph Bell. Surgeons: Dr. G. Hunter Mackenzie, Dr. William George Sym, Dr. Logan Turner, Dr. Malcolm Farquharson, and Dr. John Cumming. Dental Surgeon:

Mr. G. W. Watson. Treasurer and Secretary: Mr. J. P. Watson, W.S., 13, Hill-street.

GLASGOW HOSPITAL AND DISPENSARY FOR DISEASES OF THE EAR, 28, Elmbank-crescent.[2]—The hospital, which contains 12 beds for indoor patients, is always open for urgent cases. Hours of surgeons' visits, 2 P.M. daily; clinical teaching daily. Out-patients are seen on Mondays, Tuesdays, Wednesdays, Thursdays, Fridays, and Saturdays, at 2 P.M., by Dr. Barr and assistants. Course of Lectures and Clinical Instruction given during winter months by Dr. Barr.

GLASGOW WESTERN INFIRMARY.—This hospital adjoins the University of Glasgow. Number of beds upwards of 420. Special wards are set apart for Diseases of Women and for Affections of the Skin. In the out-patient department there are special cliniques for Diseases of Women and for Diseases of the Throat, Ear, and Teeth. The Clinical Courses are given by the Physicians and Surgeons, each of whom conducts a separate class, and students require to enter their names at the beginning of the session for the class which they propose to attend. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. All the courses of clinical instruction are recognised by the University of Glasgow and the other boards in the kingdom. In the Pathological Department the course is both systematic and practical, also post-graduate courses, and extends through the winter and following summer; these are likewise recognised by the University for graduation. Ten resident assistants are appointed annually, without salary, from those who have completed their course. The fee for the hospital practice, including the various courses of clinical instruction, is 20 guineas in one payment, or in two equal instalments for the first and second year; for six months, 7 guineas; and for three months, 4 guineas.

ROYAL HOSPITAL FOR SICK CHILDREN, Glasgow, situated at Garnethill.—This Hospital was opened in December, 1882, and is now available to medical students for clinical instruction in the diseases peculiar to childhood. The hospital includes 80 beds for non-infectious cases only. A specially designed Dispensary, or Out-patient Department, was opened in October, 1888. Students may be enrolled at any time. Fee £1 1*s.* per annum, admitting to both Hospital and Dispensary. Particulars on applying to the House Surgeon, 45, Scott-street, Garnethill, Glasgow.

GLASGOW OPHTHALMIC INSTITUTION, 126, West Regent-street (31 beds and four cots).—Clinical and systematic course of lectures for students during the winter and summer sessions. In-patients, 772; out- or dispensary patients, 3713. Operations on Wednesdays and Saturdays. Consulting Surgeon: D. N. Knox, M.B., C.M., F.F.P.S.G. Acting Surgeon: A. Maitland Ramsay, M.D. Senior Assistant Surgeon: John Rowan, M.B., C.M. Junior Assistant Surgeons, Hugh Walker, M.B., C.M., and H. Wright Thomson, M.B., C.M. Pathologist: Hugh Walker, M.B., C.M. House Surgeons: Alex H. Edwards, M.B., C.M., and A. Bankier Sloan, M.B., Ch.B. This institution is the Ophthalmic Department of the Royal Infirmary. A post-graduate course is given by Dr. Ramsay and assistants during November and December. Clinical instruction is given in the summer session to students of Queen Margaret College and in winter to students of St. Mungo's College and to all who take the class.

GLASGOW EYE INFIRMARY, Berkeley-street and Charlotte-street.—This institution, the largest of its kind in Scotland, was founded in 1824. The Infirmary now consists of two large buildings—that in Berkeley-street being occupied as the Infirmary proper, and that in Charlotte-street (new buildings opened June, 1894) as a dispensary. The Infirmary is devoted exclusively to the treatment of Diseases of the Eye, and is intended primarily to provide treatment, and, when necessary, board and lodging, for those who are unable to do so for themselves. The average number of new patients for the last ten years has been 15431·3, and the total number of cases treated in 1899 was 21,130. The Medical Staff is as follows:—Senior Surgeon: Thomas Reid, M.D. Surgeons: Thomas S. Meighan, M.D., A. Freeland Fergus, M.D., William Robertson, M.D., Andrew Wilson, M.B., C.M., James Hinshelwood, M.A., M.D. Assistant Surgeons: A. Lewis M'Millan, M.D; W. Ernest Thomson, M.A., M.D.; Henry L. G. Leask, M.D.; W. Cochrane Murray, M.B., C.M.; Leslie Buchanan, M.B., C.M.; Brownlow Riddell, M.D.; James D. Cochran, M.B., Ch.B. Pathologist: Leslie Buchanan, M.B., C.M. House Surgeon: William C. Burns, M.B., Ch.B. Assistant House Surgeon: George Coats, M.B., Ch.B.

*Regulations as to Attendance of Students.*—(1) Gentlemen may attend as students on payment to the treasurer of the following fees:—For six months £1 1*s.*, twelve months £2 2*s.* (2) All students when duly entered in the Infirmary Register may attend the clinical instruction of any or every member of the medical staff on production of their tickets. The days on which the surgeons respectively attend to receive patients may be ascertained at the Infirmary. Students have the privilege of being present in the Dispensaries at such hours as are arranged. They may enter the wards along with the surgeon whose clinique they are attending when he visits his patients. They may also be present at operations under the sanction of the surgeon operating, but no student may enter the wards or operating-room except under the aforesaid regulation. Students may be allowed the use of the journals and case-books for examination on applying to the House Surgeon. The wards and dispensary are recognised by the University of Glasgow for the purpose of instruction in ophthalmology for graduation in medicine. Secretary and acting Treasurer: William George Black, 88, West Regent-street. Medical session begins April.

[2] No returns.

## IRISH SCHOOLS OF MEDICINE.[1]

QUEEN'S COLLEGE SCHOOL OF MEDICINE, Belfast.—Ten Junior Scholarships have been founded in the Faculty of Medicine of the annual value of £20 each. Two are tenable by matriculated students, of the first, second, third, fourth, and fifth years of their course respectively. The examinations for Scholarships take place at the commencement of the session. Class Prizes are awarded at examinations which take place at the close of the session. The Exhibitions, &c., of the Royal University of Ireland are also open to students. Lectures in Medicine at Queen's College, Belfast, will commence on Oct. 16th and end on March 30th. The Summer Session will begin on May 1st. Clinical instruction is given at the Royal Hospital. The Ulster Hospital for Diseases of Women and Children, the Maternity Hospital, the Ophthalmic Hospital, the Ulster Eye, Ear, and Throat Hospital, the Hospital for Sick Children, and the District Lunatic Asylum are open to students. A pamphlet containing full information can be had free on application to the Registrar, Queen's College, Belfast.

QUEEN'S COLLEGE SCHOOL OF MEDICINE, Cork.—The building is provided with a very large, well-ventilated dissecting-room, with physiological, toxicological, and pathological laboratories, materia medica, anatomical and pathological museums, as well as a room for surgical and obstetrical instruments and appliances. There are well-appointed physical, chemical, and biological laboratories, and a large natural history museum in the adjoining building, and part of the College ground is laid out as a botanical garden. The plant houses are well filled with plants and are open to the students in the class of Botany.

*Fees.*—For Practical Anatomy and for Practical Chemistry, £3 each course; for Anatomy and Physiology, £3 first course, and £2 for each subsequent course. Other medical classes, £2 first course, and £1 each subsequent course. Eight scholarships (value about £30 each), as well as several exhibitions and class prizes, are open to students in their first four years and the Blayney Scholarship, value £35, and a Senior Exhibition to students in their fifth year.

### HOSPITALS AFFORDING FACILITIES FOR CLINICAL OBSERVATION.

ADELAIDE MEDICAL AND SURGICAL HOSPITALS, Peter-street, Dublin.—Fee for nine months' hospital attendance, £12 12*s.*; six months, £8 8*s.* Summer, three months, £5 5*s.*

*Staff.*—Physicians: James Little, M.D., M.R.I.A.; Wallace Beatty, M.D., F.R.C.P.I.; H. T. Bewley, M.D., F.R.C.P.I. Surgeons: F. T. Heuston, M.D., F.R.C.S.I.; T. E. Gordon, M.B., F.R.C.S.I. Obstetric Surgeon: W. J. Smyly, M.D., F.R.C.P.I. Ophthalmic Surgeon: H. R. Swanzy, M.B., F.R.C.S.I. Pathologist and Bacteriologist: J. Alfred Scott, M.D. F.R.C.S.I. Assistant

[1] For Scholarships see page 715 et seq.

## TABULAR LIST OF THE CLASSES, LECTURERS, AND FEES AT THE MEDICAL SCHOOLS OF IRELAND FOR THE SESSION 1900–1901.

| LECTURES &c. | DUBLIN UNIVERSITY. | DUBLIN R.C. OF SURGEONS. | | DUBLIN, CATHOLIC UNIVERSITY. | | BELFAST, QUEEN'S COLLEGE. | | CORK, QUEEN'S COLLEGE. | | GALWAY, QUEEN'S COLLEGE. | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LECTURERS. | LECTURERS. | FEES. | LECTURERS | FEES. | LECTURERS. | FEES. First Course. | LECTURERS. | FEES. First Course. | LECTURERS. | FEES. First Course. |
| | | | | | | | £ s. | | £ s. | | £ s. |
| HISTOLOGY & PHYSIOLOGY. | ... | Prof. Scott | Course, £3 3s., in all Classes, ex. Descr. Anat. (£5 5s.), Oper. Surg. (£5 5s.), Pract. Chem. (£5 5s.), Pract. Histology (£5 5s.). | Dr. Coppinger & Dr. Coffey† | £3 3s. each Course, except Dissections, Pract. Chem., Oper. Surg., and Histology, which are £5 5s. each. | Dr. W. H. Thompson | 3 0 | Dr. J. J. Charles. | 3 0 | Dr. Pye | 3 0 |
| ANATOMY, DESCRIPTIVE & SURGICAL | Dr. Cunningham | Prof. Fraser | | Dr. Birmingham | | Dr. J. Symington | 2 0 | | ... | Dr. Pye | 2 0 |
| PRACTICAL ANATOMY AND DISSECTIONS ... ... ... ... | Dr. Cunningham | Prof. Fraser | | Dr. Birmingham,† assisted by Drs. Fagan and Keating | | Dr. Symington & Demonstrators | 3 0 | Dr. Charles and Demonstrators. | 3 0 | Dr. Pye and Demonstrators | 3 0 |
| CHEMISTRY ... ... ... ... ... | Dr. Reynolds | Profs. Sir C. Cameron and Lapper | | Mr. H. Ryan, † assisted by Mr. Ebrell | | Dr. E. A. Letts | 2 0 | Dr. Augustus E. Dixon | 2 0 | Dr. Senier | 2 0 |
| PRACTICAL CHEMISTRY ... | Dr. Reynolds | | | | | Dr. E. A. Letts† | 3 0 | Dr. Augustus E. Dixon | 3 0 | Dr. Senier | 3 0 |
| MATERIA MEDICA AND PHARMACY | Dr. W. G. Smith | Prof. Sir G. F. Duffey | | Dr. Quinlan * | | Dr. W. Whitla | 2 0 | Dr. John Dundon | 2 0 | Dr. Colahan | 2 0 |
| BOTANY AND ZOOLOGY ... | Dr. Wright | Prof. Cosgrave § | | Dr. Sigerson † & Dr. Blaney | | Dr. R. O. Cunningham‖ | 2 0 | Professor Hartog | 2 0 each | Dr. R. J. Anderson | 2 0 |
| INSTITUTES OF MEDICINE AND PATHOLOGY | Prof. Mackintosh Dr. Purser | Prof. A. H. White | | Dr. McWeeney | | ... | ... | ... | ... | Dr. Lynham (*Medicine*) | 2 0 |
| NATURAL PHILOSOPHY ... | ... | ... | | Prof. Stewart† | | Prof. W. B. Morton | 2 0 | Prof. William Bergin | 2 0 | Prof. Anderson | 2 0 |
| HOSPITAL PRACTICE ... ... | SIR P. DUN'S OR OTHER DUBLIN HOSPITAL. | THE VARIOUS DUBLIN HOSPITALS. | | THE VARIOUS DUBLIN HOSPITALS. | | BELFAST ROYAL AND OTHER HOSPITALS. | ... | NORTH AND SOUTH INFIRMARIES. | ... | GALWAY HOSPT'L, GALWAY UNION HOSPITAL, & GALWAY FEVER HOSPT'L | Sess. 5 0 |
| CLINICAL LECTURES ... ... | ... | ... | | ... | | ... | ... | ... | ... | Drs. Kinkead, Pye, Brereton, Colahan, and Lynham | ... |
| SURGERY ... ... ... ... ... | Dr. E. H. Bennett | Profs. Sir W. Stokes and W. Stoker | | Mr. P. J. Hayes & Mr. McArdle | | Dr. T. Sinclair | 2 0 | Dr. C. Y. Pearson | 2 0 | Dr. W. Brereton | 2 0 |
| OPERATIVE SURGERY ... ... | Dr. E. H. Bennett | | | | | Dr. T. Sinclair* | 2 0 | Dr. C. Y. Pearson | ... | ... | ... |
| MIDWIFERY, &c.... ... ... ... | Dr. A. V. Macan | Prof. F. W. Kidd | | Dr. A. J. Smith | | Dr. J. W. Byers | 2 0 | Dr. Corby | 2 0 | Dr. Kinkead | 2 0 |
| MEDICINE ... ... ... ... ... | Dr. Finny | Prof. Sir J. W. Moore | | Sir C. J. Nixon | | Dr. J. Cuming | 2 0 | Dr. W. E. Ashley Cummins | 2 0 | Dr. Lynham | 2 0 |
| MEDICAL JURISPRUDENCE | Dr. Bewley | Prof. H A. Auchinleck¶ Sir C. Cameron | | Dr. Roche | | Dr. J. Lorrain Smith * and Dr. John Tennant | 2 0 | Dr. C. Yelverton Pearson | 2 0 | Dr. Senier ‖ Dr. Kinkead § | 2 0 |
| COMPARATIVE ANATOMY ... | Prof. Mackintosh | ... | | Drs. Sigerson & Blaney† | | ... | ... | ... | 2 0 | [*Modern Languages*: Prof. Steinberger] | ... |
| PRACTICAL PHARMACY ... | Dr. W. G. Smith | Prof. Sir G. F. Duffey | | Dr. Quinlan | | Dr. V. G. L. Fielden* | 2 0 | Dr. John Dundon | 2 0 | Dr. Colahan | 2 0 |
| LOGIC ... ... ... ... ... ... | The College Tutors | ... | | ... [*Medical Registrar*: Dr. Birmingham] | | Prof. J. Park | 2 0 | ... | 1 0 | Prof. Trench | 2 0 |
| PHYSICS ... ... ... ... ... ... | Prof. FitzGerald | Prof. Lapper | | Prof. Stewart † | | ... | ... | ... | ... | The President | 2 0 |
| PATHOLOGY ... ... ... ... ... | Dr. O'Sullivan | Prof. A. H. White | | Dr. McWeeney | | Dr. J. Lorrain Smith* | 2 0 | Dr. Moore | 2 0 | Dr. McKelvey | 2 0 |
| OPHTHALMOLOGY AND OTOLOGY | ROYAL VICTORIA HOSPITAL. | Profs. Jacob, Fitzgerald, and Story | | Dr. Werner | | Dr. W. A. McKeown | 2 0 | Dr. Sandford | 2 0 | ... | ... |
| HYGIENE ... ... ... ... ... | Dr. Bewley | Sir Charles Cameron | | Dr. Roche | | Dr. E. A. Letts and Dr. Henry Whitaker | 2 0 | Dr. Donovan | 2 0 | ... | ... |
| DENTISTRY ... ... ... ... ... | ... | Prof. Stack | | ... | | ... | ... | ... | ... | ... | ... |

* In Summer. † In Winter and in Summer. ‖ Zoology in Winter; Botany in Summer. § Including Biology. ¶ And Hygiene.

Physician: G. Peacocke, M.D., F.R.C.P. Assistant Surgeon: K. E. Levison-Gower Gunn, M.D., F.R.C.S. House Surgeon: Ashton Bond, M.B., B.Ch.

A resident surgeon is elected yearly and three resident pupils half-yearly. At the termination of the session prizes in Clinical Medicine and Surgery and in Obstetric Medicine will be awarded.

*Hudson Scholarship.*—In addition to the junior prizes, the Hudson Scholarship, £30 and a gold medal as well as a prize of £10, together with a silver medal, will be awarded at the end of the session for proficiency in Clinical Medicine and Medical Pathology, Clinical Surgery and Surgical Pathology, Pathological Histology, Surgical Appliances, including instruments and bandaging, Ophthalmology and Gynæcology.

The certificates of attendance are recognised by all the Universities and licensing bodies in the United Kingdom. Further particulars may be obtained from Mr. F. T. Heuston.

COOMBE LYING IN HOSPITAL AND GUINNESS DISPENSARY FOR THE TREATMENT OF DISEASES PECULIAR TO WOMEN, Dublin.—This hospital contains nearly 70 beds and consists of two divisions, one of which is devoted to lying-in cases and the other to the treatment of the diseases peculiar to women. The maternity department is one of the largest in Ireland, 3000 cases being annually treated either as intern or extern patients. A regular course of lectures is delivered in the hospital, and clinical instruction is given daily at the bedside. There are two large dispensaries connected with the institution, at one of which instruction is given on the General Diseases of Women and Children, and in the other on the Diseases Peculiar to Women. There is accommodation for a limited number of intern pupils, who enjoy exceptional advantages of acquiring a practical knowledge of this branch of their profession. Two Resident Pupil Midwifery Assistants and one Clinical Clerk are elected half-yearly from among the pupils of the hospital. Certificates of attendance at this hospital are accepted by all licensing bodies, and the diploma is recognised by the Local Government Board as a full legal midwifery qualification. Fees (six months' course): extern pupils, 8 guineas, half payable in advance; intern pupils, 18 guineas for six months' residence. If pupils enter as interns by the month the fees are £4 4*s.* for first month, and £3 3*s.* for each succeeding month. Intern pupils enjoy very special advantages, which can be learned on application. Registration fee on entrance, 10*s.* 6*d.* Students can enter for attendance at any time. Further particulars may be had on application to the Master or the Registrar at the hospital.

SIR PATRICK DUN'S HOSPITAL [2]—Fees for attendance of students—nine months, £12 12*s.*; six months, £8 8*s.*; three months, £5 5*s.* The hospital is open to extern students as well as to the students of Trinity College, and the certificates are recognised by all the licensing bodies in the kingdom. Dr. Taylor, Secretary to the Medical Board, will give any further information.

MEATH HOSPITAL AND COUNTY DUBLIN INFIRMARY.[3]—This hospital was founded in 1753 and now contains 160 beds available for clinical teaching. A new building for the isolated treatment of fevers has recently been added. The certificates of this hospital are recognised by all the universities and licensing bodies of the United Kingdom. Medical and Surgical Resident Pupils and Clinical Clerks and Dressers are appointed every six months, and a House Surgeon is elected annually. A prospectus giving the complete arrangements for the Medical and Surgical classes for the coming session may be obtained from the Secretary of the Medical Board, R. Glasgow Patteson, F.R.C.S., 20, Lower Baggot-street, Dublin.

MATER MISERICORDIÆ HOSPITAL, Dublin.[4]—Consulting Physician: Sir Francis R. Cruise. Physicians: Sir Christopher Nixon, Dr. Joseph Redmond, Dr. John Murphy, and Dr. Martin Dempsey. Assistant Physician: Dr. John O'Donnell. Surgeons: Messrs. Patrick Hayes, Charles Coppinger, Arthur Chance, and John Lentaigne. Assistant Surgeon: Mr. Hugh Blaney. Obstetric Physician: Dr. Thos. More Madden. Ophthalmic Surgeon: Mr. Louis Werner. Dental Surgeon: Mr. Daniel Corbett, jun. Pathologist: Dr. Edmond McWeeney. Anæsthetist and Surgical Registrar: Dr. Michael O'Sullivan. House Physicians: Dr. Patrick Canning and Dr. John Murray. House Surgeons: Messrs. Matthew J. Russell, Joseph P. Quinn, John Keogh, and Thomas O'C. Donelan. This hospital, the largest in Dublin, at present containing 335 beds, is open at all hours for the reception of accidents and urgent cases. Fifty beds are specially reserved for the reception of patients suffering from fever and other contagious diseases. Instruction at the bedside will be given by the Physicians and Surgeons at 9 A.M. daily. Clinical Instruction will commence on Monday, Oct. 2nd, at 9 A.M. A course of Clinical Instruction on Fever will be given during the winter and summer sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Opportunities are afforded for the study of Diseases of Women in the ward under the care of the Obstetric Physician, and at the Dispensary held on Tuesdays and Saturdays. Ophthalmic Surgery will be taught in the Special Wards and Dispensary. Surgical Operations will be performed on Mondays, Tuesdays, Fridays, and Saturdays at 11 o'clock. Connected with the hospital are extensive Dispensaries, which afford valuable opportunities for the study of general Medical and Surgical Diseases, Accidents, &c. Instruction will be given on Pathology and Bacteriology. Junior Appointments: Four House Physicians and eight House Surgeons will be appointed annually. Ten resident pupils will be elected from the most attentive of the class to hold office for six months. For the current session the elections will take place in November, 1899, and in May, 1900. Dressers and Clinical Clerks will be appointed, and certificates will be given to those who perform their duties to the satisfaction of the staff. Leonard Prizes: One Gold and one Silver Medal will be offered for competition annually in the subject of Medicine, and one Gold and one Silver Medal in the subject of Surgery. Junior Leonard Prizes: One prize value £3 and one prize value £2 will be awarded in Medicine, and one prize value £3 and one prize value £2 will be awarded in Surgery. They will be awarded on the aggregate of marks gained for Reports of Cases and at a Clinical Examination to be held at the close of the summer session. For further particulars see prospectus. Certificates of attendance upon this hospital are recognised by all the Universities and licensing bodies in the United Kingdom. Private Wards have been opened for the reception of Medical and Surgical cases. A Training School and Home for Trained Nurses have been opened in connexion with the Hospital.

*Terms of attendance.*—Nine months, £12 12*s.*; six winter months, £8 8*s.*; three summer months, £5 5*s.* Entries can be made with any of the physicians or surgeons, or with the Registrar, Arthur Chance, F.R.C.S., 90, Merrion-square. A prospectus containing in detail the arrangements for Clinical Instruction, Prizes, &c., may be obtained from the Secretary, Dr. Joseph Redmond, 41, Merrion-square, E., Dublin.

RICHMOND, WHITWORTH, AND HARDWICKE HOSPITALS, North Brunswick-street, Dublin.—These hospitals contain 312 beds—110 for Surgical cases, 82 for Medical cases, and 120 for Fever and other epidemic Diseases. A Resident Physician and a Resident Surgeon are appointed each year and are paid for their services. Clinical Clerks: Five Resident Clinical Clerks are appointed each half-year, and provided with furnished apartments, fuel, &c. These appointments are open not only to advanced Students as formerly, but also to those who are qualified in Medicine or Surgery. The Dressers are selected from among the best qualified of the pupils without the payment of any additional fee. For prospectuses apply to Sir W. Thomson, F.R.C.S., Treasurer, 54, Stephen's-green East; or to J. O'Carroll, M.D., Honorary Secretary, 43, Merrion-square, Dublin.

ROTUNDA HOSPITAL, Rutland-square, Dublin.—This institution consists of two distinct hospitals—namely, the Lying-in Hospital and the Auxiliary Hospital, the latter for the reception of patients suffering from Uterine and Ovarian Diseases. There is also a large extern maternity and a Dispensary for Diseases Peculiar to Women, which is open daily. Clinical instruction is given daily (Saturdays excepted) in Midwifery and the Diseases peculiar to Women, special attention being directed to the application of antiseptics in Midwifery. Accommodation is provided for a limited number of intern pupils. Consulting Physician: Dr. James Little. Consulting Surgeon: Sir Philip C. Smyly. Master: Dr. R. Dancer Purefoy. Assistant Physicians:

[2] No returns. [3] No returns. [4] No returns.

Dr. H. C. Lloyd and Dr. P. Carton. Clinical Clerks: Dr. A. Gills and Dr. W. L. Watt.

DR. STEEVENS'S HOSPITAL.[5]—This hospital, containing beds for 200 patients, is situated close to the Kingsbridge Terminus of the Great Southern and Western Railway, occupying a position in the centre of one of the busiest manufacturing districts of the city, otherwise unprovided with medical institutions, and affords exceptional advantages for clinical instruction. Immediately adjoining is St. Patrick's (Swift's) Asylum for the Insane. The hospital is easily accessible by two lines of tramways. There is a ward entirely devoted to Venereal Disease, a detached building for Fever Cases, and an extensive Out-patient Department, with separate Clinics for Diseases of the Skin, Throat, Eye, Ear, Teeth, and Women.

The hospital is visited daily by the physicians and surgeons. The wards are also visited by the resident surgeon each evening. Clinical Lectures are given by the physicians and surgeons during the session. There is accommodation in the hospital for four medical, six surgical, and two special resident clinical assistants.

*Fees.*—Hospital Practice: Nine months, £12 12*s.*; six months, £8 8*s.*; three months, £5 5*s.* Dressership: £10 10*s.* each three months. Further information may be obtained from the Resident Surgeon or from R. A. Hayes, M.D., Honorary Secretary, 82, Merrion-square South.

Dr. J. Beatty has been appointed Assistant Physician, Mr. W. S. Haughton Surgeon, and Dr. P. Kirkpatrick Anæsthetist to the hospital.

# PUBLIC HEALTH.

## INSTRUCTION FOR DIPLOMAS IN STATE MEDICINE.

### ENGLAND.

THE following recommendations, designed with a view of ensuring "the possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health," were adopted by the General Medical Council in 1896.[1] The regulations require that—"(1) A period of not less than twelve months shall elapse between the attainment of a first registrable qualification in Medicine, Surgery, and Midwifery and the examination for a diploma in Sanitary Science, Public Health, or State Medicine; (2) every candidate shall have produced evidence of having attended, after obtaining a registrable qualification, during a period of six months, practical instruction in a laboratory approved of by the body granting the qualification; (3) every candidate shall have produced evidence of having for six months practically studied the duties of outdoor sanitary work either under a medical officer of health who is a teacher in public health in a recognised school, or under the medical officer of health of a county or of a single sanitary district of 50,000, or a combination of districts of 35,000 inhabitants in England, or in one or more districts of 30,000 in Scotland or Ireland; (4) the examination shall have been conducted by examiners specially qualified, and shall comprise laboratory work as well as written and oral examination; (5) the rules as to study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890." It was enacted by Section 18 (2) of the Local Government Act [England and Wales], 1888, that after Jan. 1st, 1892, no such appointment (that of medical officer of health) may be made in any county, or in any district or combination of districts with a population of 50,000 or upwards, unless the officer—having, of course, qualifications in Medicine, Surgery, and Midwifery—is registered as the holder of a diploma in Sanitary Science, Public Health, or State Medicine under Section 21 of the Medical Act, 1886, or has during any three consecutive years preceding 1892 been medical officer of a district or combination of districts with a population of 20,000 at least, or has for three years previously to August 13th, 1888, been a medical officer or inspector of the Local Government Board. With the sanction of the Local Government Board the same person may be appointed medical officer for two or more districts. It would seem, however, that the regulations of the General Medical Council may be undergoing revision; and, if this be so, the amended regulations are not likely to be less stringent—at least for recently qualified men—than those at present in force. It may, therefore, be well for those who are contemplating the taking of the diploma not to delay matters.

*London University.*—Sanitary Science is included under the head of State Medicine in the M.D. degree, and a certificate has to be produced showing that a course of practical instruction has been attended for the prescribed period, and that the course has included such chemical, microscopical, and meteorological work and exercises as more especially relate to sanitation. The attendance includes six months' practical instruction in a laboratory and six months' outdoor sanitary work. Certificates will be received from the holder of any public health office directly or indirectly subject to control by a Secretary of State or a Government Department. Candidates for the M.D. degree in State Medicine must have (1) studied State Medicine for two years or (2) have studied State Medicine for one year and have held for a period of two years the position of medical officer of health in any sanitary district, or (3) without having studied State Medicine have held for a period of three years the position of medical officer of health in any sanitary district.

*Cambridge University.*—Two examinations in so much of State Medicine as is comprised in the functions of medical officers of health will be held during the year 1900 in Cambridge. Each examination will consist of two parts. Part I. will begin on the first Tuesday in April and October respectively; Part II. will begin on the second Tuesday in April and October respectively; and each part will end on the following Thursday. Any person whose name is on the Medical Register is admissible as a candidate for this examination provided (1) a period of not less than twelve months shall have elapsed between the attainment of registrable qualification and the time when he presents himself for either part of the examination; (2) he produce evidence of having, before or after obtaining a registrable qualification, attended the clinical practice of a hospital for infectious diseases approved by one of the licensing bodies recognised under the Medical Acts; (3) he produce evidence of having, after obtaining a registrable qualification, attended during a period of six months on one or more courses, approved by the Syndicate, of practical laboratory instruction in Chemistry, Bacteriology, and the Pathology of those diseases of animals that are transmissible to man; (4) he produce evidence of having, after obtaining a registrable qualification, practically studied for six months the duties of outdoor sanitary work. (*a*) In England and Wales either under the medical officer of health of a county or of a single sanitary district having at the date of the last census a population of not less than 50,000 or the medical officer of health of a combination of two or more sanitary districts having collectively at the date of the last census a population of not less than 35,000; or (*b*) in Scotland or Ireland under the medical officer of health of a county or of one or more sanitary districts having at the date of the last census a population of not less than 30,000; or (*c*) under a medical officer of health who is a teacher in the department of public health of a recognised medical school. A certificate of an assistant officer of health of a county or a large urban district may be accepted, provided the medical officer of health of a county or district consents to the assistant officer giving such instruction. Any candidate who shall produce evidence that he has himself held an appointment as medical officer of health under conditions not requiring the possession of a special sanitary diploma shall be exempt from this regulation. The provisions as to previous study shall not apply to medical practitioners registered, or entitled to be registered, on or before Jan. 1st, 1890. The first part of the examination will have reference to the general principles of sanitary science and will comprise the following subjects. The elements of chemistry and physics: methods of chemical analysis and in particular the analysis of air and water. The laws of heat and the elements of pneumatics, hydrostatics, and hydraulics in their application to warming, ventilation, water-supply, and drainage. The geological and other conditions determining the healthiness of sites for dwellings. Sources, storage, and purification of water-supply. The elements of meteorology in relation to health. Principles of building construction in their application to dwellings,

[5] No returns.

[1] The regulations were last settled on June 9th, 1896, and came into operation on Jan. 1st, 1897.

hospitals, and schools. The disposal of sewage and refuse, and the general principles of sanitary engineering. Disinfectants, their chemistry and use. The chemical and microscopical examination of foods and the detection of the commoner forms of contamination. The methods of bacteriological investigation and analysis. The bacteriology of air, water, food, and soil. The general pathology of infection, and of the diseases of animals that are transmissible to man. The second part of the examination will have reference to State Medicine and to the applications of Pathology and Sanitary Science, and will comprise the following subjects. Laws and Statutes relating to Public Health.[2] The model by-laws of the Local Government Board. Sanitation of dwellings, schools, factories, and workshops, and of villages and towns. Inspection of slaughter-houses, cowsheds, &c. Inspection of meat and other articles of food. General epidemiology, with special reference to the origin, pathology, symptoms, propagation, geographical distribution, and prevention of the epidemic, endemic, and other infective diseases both of temperate and of tropical climates. The methods applicable to the medical investigation of epidemics. Effects on health of overcrowding, vitiated air, impure water, polluted soils, and bad or insufficient food. Unwholesome trades and occupations, and the diseases to which they have rise. Nuisances injurious or dangerous to health. The effects on health of season and climate. The principles and methods of vital statistics in relation to public health. (N.B.—The foregoing schedule is not to be understood as limiting the scope of the examination, which will include every branch of sanitary science. No candidate will be approved by the examiners who does not show a high proficiency in all the branches of study, scientific and practical, which bear upon the duties of medical officers of health.) The following is a list of colleges and schools of medicine at which the courses of laboratory instruction have, for the purposes of this examination, been already approved by the State Medicine Syndicate: The Chemical and Pathological Laboratories, Cambridge; the London Hospital Medical College; St. Bartholomew's Hospital Medical College; King's College, London: University College, London; the Army Medical School, Netley; Owens College, Manchester; the University of Durham Medical School, Newcastle-on-Tyne; Mason College, Birmingham; University College and Royal Southern Hospital School, Liverpool; St. Mary's Hospital Medical College; Charing-cross Hospital College; Westminster Hospital Medical School; University College, Bristol; Yorkshire College, Leeds; Guy's Hospital Medical School; St. Mungo's College, Glasgow; Edinburgh University Public Health Laboratory; Middlesex Hospital Medical School; Royal Colleges, Edinburgh; Surgeons' Hall, Edinburgh; British Institute of Preventive Medicine; Trinity College, Dublin; Queen's College, Belfast; St. Thomas's Hospital Medical School; University College, Cardiff; and University College, Sheffield. The examination in both parts will be oral and practical, as well as in writing. One day at least will be devoted to practical laboratory work and one day to oral and practical examination in, and reporting on, subjects connected with outdoor sanitary work. Candidates may present themselves for either part separately or for both together at their option; but the result of the examination in the case of any candidate will not be published until he has passed to the satisfaction of the examiners in both parts. Every candidate will be required to pay a fee of £6 6*s*. before admission or re-admission to *either part* of the examination, but candidates who have presented themselves before the year 1896 will be re-admitted to either part on payment of a fee of £5 5*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners will receive a diploma testifying to his competent knowledge of what is required for the duties of a medical officer of health. All applications for information respecting this examination should be addressed to Dr. Anningson, Walt-ham-sal, Barton-road, Cambridge, Secretary to the Syndicate. Candidates who desire to present themselves for the examination must send in their applications on forms supplied for the purpose and transmit them with the fees to J. W. Clark, M.A., Registrary, University of Cambridge, for the April examination on or before March 17th and for the October examination on or before Sept. 15th. The prescribed certificates must be sent to the Registrary so as to reach him not later than 10 A.M. on March 29th and Sept 27th respectively. Cheques should be crossed "Barclay and Co., Ltd." The fee for either part of the examination cannot be returned to any candidate who fails to present himself; but he will be entitled, without an additional fee, to be a candidate on one subsequent occasion. Candidates must before admission to either part of the examination produce proof of having satisfied provisions (1), (2), and (3), and before admission to the second part having satisfied provisions (4), above mentioned.

*University of Oxford (Diploma in Public Health).*—An examination, open to all registered medical practitioners, conducted partly in writing, partly *viva voce*, and in each subject partly practical, is held in Michaelmas Term in the following subjects:—General Pathology (with special relation to Infectious Diseases), the Laws relating to Public Health, Sanitary Engineering, Vital Statistics. The fee for admission to the examination is £10. Candidates (*a*) must have spent after registration a period of at least six months studying in a public health laboratory approved by the Board of the Faculty of Medicine. Candidates must also (*b*) have had their names on the Medical Register of the United Kingdom for a period of at least twelve months; (*c*) have spent after registration a period of study of not less than six months in all, under the medical officer of health of a county or of a city or town containing at least 50,000 inhabitants, or under two or more such medical officers of health. Certificates of proficiency are granted to those who pass this examination.

*University of Durham.*—Sanitary Science is the special object of the degrees in Hygiene. Candidates for the degree of Bachelor in Hygiene (B. Hy.) must be at least twenty-two years of age and registered, and before presenting themselves for examination must have been for at least twelve months graduates in Medicine of a recognised university. They shall spend six months at Newcastle-upon-Tyne studying Public Health, Comparative Pathology, Practical Bacteriology, Outdoor Sanitary Work, Infectious Diseases, Sanitary and Practical Chemistry. They have to pass an examination in Sanitary Chemistry, Physics, Sanitary Legislation, Comparative Pathology, Vital Statistics, Nosology, Distribution of Health and Disease, Sanitary Medicine and Practical Hygiene. The fee for the examination for the degree of B.Hy. is 10 guineas, and for the degree £6 6*s*. The examination is divided into two parts and candidates may present themselves for either part or both together at their option. Candidates for the degree of Doctor in Hygiene (D.Hy.) must have acquired the degree of Bachelor in Hygiene, must for two years subsequently have been engaged in practice as a medical officer of health and must write an essay upon some practical hygienic subject. The fee for the examination for the degree of D.Hy. is £5, and for the degree £6 6*s*. The regulations for education and examination for the Diploma in Public Health (D.P.H.) are the same as those for the degree of Bachelor of Hygiene, except that the candidate is not required to be a graduate in Medicine of a recognised University, and the course of study need not be passed at Newcastle-upon-Tyne. The fee for the examination and Diploma in Public Health is ten guineas.

*Victoria University.*—An examination in Public Health is held yearly under the following regulations: The examination is in two parts, and is written, oral, and practical. Candidates before entering for either part of the examination must have held for not less than twelve months a registrable qualification in Medicine, Surgery, and Midwifery, and must present satisfactory certificates of having attended courses of instruction in Public Health in a college of the University, or in a college or medical school recognised for this purpose by the University; of having attended, after obtaining a registrable qualification, during at least six months, practical instruction in a laboratory approved by the University, the courses including Chemistry as applied to Public Health, Bacteriology, and the Pathology of those diseases of animals which are communicable from animals to man; of having attended for three months the clinical practice of a hospital for infectious diseases; of having practically studied the duties of outdoor sanitary work for not less than six months under the medical officer of health of a county

[2] All candidates will be examined in the provisions of the English Statutes relating to public health, but any candidate will be given an opportunity of showing a special knowledge of other sanitary laws in operation within the British Empire, provided that, *when applying for admission to the examination, he give notice* of his desire and indicate the special law he proposes to offer.

or of a large urban district. Candidates may present themselves for Parts I. and II. separately or at the same time, provided that no candidate be admitted to Part II. unless he has already passed in Part I. No candidate's name will be published until he has satisfied the examiners in both parts of the examination The fee for each part is £5 5*s*., and must be paid on or before July 1st in each year. For any subsequent examination in the same part the fee will be £3 3*s*. Every candidate who has passed both parts of the examination to the satisfaction of the examiners, and who is legally registered, will receive a Diploma in Public Health. The examinations will begin on the third Monday in July each year.

*Royal College of Physicians of London and the Royal College of Surgeons of England.* — The following are the regulations for obtaining the Diploma in Public Health: Section 1: Candidates must be registered under the Medical Act. The examination consists of two parts. The fee for each part is £5 5*s*. A candidate intending to present himself must give fourteen days' written notice to the Secretary, at the Examination Hall, Thames Embankment, W.C. A candidate registered under the Medical Act on or before Jan. 1st, 1890, will be admissible to Part I of the examination on producing evidence of being at least twenty-three years of age, and to Part II. on producing evidence of being at least twenty-four years of age. A candidate registered under the Medical Act after Jan. 1st, 1890, will be admissible to examination in Part I. on producing evidence (1) of having been in possession of a registrable qualification in Medicine, Surgery, and Midwifery for at least twelve months; (2) of having attended, after obtaining such registrable qualification, practical instruction in a laboratory recognised by the Examining Board in England during a period of six months; and (3) of being at least twenty-three years of age. A candidate will be admitted to Part II. of the examination on producing evidence (1) of having, during a period of six months after obtaining a registrable qualification, either practically studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district or else held appointment as medical officer of health under conditions not requiring the possession of a special Sanitary diploma; (2) of having attended the clinical practice of a hospital for infectious diseases recognised by the Examining Board in England, either before or after obtaining his registrable qualification in Medicine, Surgery, and Midwifery (this certificate is not required in the case of a candidate who produces evidence that he has commenced special study of Sanitary Science before Jan. 1st, 1894); and (3) of being at least twenty-four years of age.

*King's College, London.* — The necessary Laboratory Instruction to comply with the regulations of the various Universities and other Medical Licensing Bodies will be given by Professor William R. Smith, M.D., D.Sc., and Professor Edgar M. Crookshank, M.B. Lond. The syllabus includes Physics, Chemistry, Microscopy; Parasites and other Organisms Infesting Food-stuff or the Human Body; Bacteriology, including the Cultivation and Recognition of Micro-organisms. The course will last six months, four months of which will be spent in the Laboratories of Public Health, and two months in the Bacteriological Laboratory. Fee 20 guineas, payable in advance in the College office. Under the direction of Professor William R. Smith, M.D., D.Sc., and Demonstrator E. Russell, B.Sc., F.C.S., practical instruction will be given in the laboratories in the methods of Analysis of Air, Water, Foods, &c.; Detection of Poisons. Fees, one month, £4 4*s*.; three months, £10 10*s*. The laboratories are also available for original investigations and practical work in Public Health, and are open daily from 9 A.M. to 4 P.M. and on Saturdays to 1 P.M. In Public Health special classes will be held during the winter session by Professor W. R. Smith; fee, £12 12*s*. The Bacteriological Laboratory is open daily for original research under the direction of the professor and demonstrator of Comparative Pathology and Bacteriology. For one month for original research, 5 guineas. For a longer period by arrangement. For one month for private study, with supervision, 5 guineas. For a longer period by arrangement. Practical course for a month, with attendance on lectures, 5 guineas. For a year, 30 guineas. Professor H. G. Seeley, F.R.S., will deliver a course of six lectures on Physiography.

*University College, Bristol.*—A course of lectures on the Principles and Practice of Hygiene is given at the College by D. S. Davies, M.D. Lond., D.P.H. Cantab., on Mondays and Fridays, 10–11 A.M., commencing on the first Monday in October. A six months' course of Practical Laboratory Instruction is given at the Western Counties' Laboratory, Park-street, by Mr. F. Wallis Stoddart, commencing on the first Wednesday in October, and including the subjects of Chemistry and Physics. Instruction in Bacteriology is given at the College by Professor A. F. Stanley Kent, M.A., F.L.S., F.G.S. Demonstrations on the provisions and practical working of the various Acts relating to Public Health and on the Orders, Circulars, and By-laws of the Local Government Board are delivered by Mr. J. C. Heaven on Mondays and Fridays, commencing on the first Monday in October. Gentlemen taking out the course are admitted to practical outdoor sanitary work during the session, under the supervision of the medical officer of health for the city and port of Bristol. They are considered as pupil assistants and are required to carry out diligently such of the duties of medical officers of health as they may be directed to undertake. Facilities are afforded during the course for the study of those diseases of the lower animals which are communicable to man. Fee for the entire course, 20 guineas.

*University of Birmingham.*—The University grants a degree of B.Sc. in Public Health and also a Diploma in the same subject on the following conditions: Graduates in Medicine of this University may become candidates for the degree of Bachelor of Science in Public Health, by conforming to all the requirements laid down for candidates for the Diploma in Public Health, except that after graduating in Medicine all courses of study must be taken out in the University and they must, in addition, have attended a three months' course of Geology in the University. The following are the regulations for Diploma in Public Health (general conditions):—1. All candidates must be registered under the Medical Act. 2. The examinations will be held in the months of January and July, and will consist of two parts. No candidate will be admitted to Part II. until he has passed Part I. 3. Candidates may enter for Parts I. and II. separately or at the same time. 4. The examination in each part will be written, oral and practical. 5. Candidates intending to present themselves for either part of the examination must give 14 days' notice in writing to the registrar of the University. 6. The fee for each part of the examination is £5. The conditions of admission to the examinations are as follows:—I.—For candidates registered under the Medical Act on or before Jan. 1st, 1890. Candidates so registered will be allowed to sit for examination on producing certificate of registration. II.—For candidates registered under the Medical Act after Jan. 1st, 1890. Candidates will be admitted to examination in Part I. on producing evidence: (1) of being at least 23 years of age, and of having been possessed of a registrable qualification in Medicine, Surgery, and Midwifery, for a period of 12 months; (2) of having attended, after obtaining such registrable qualification, a six months' practical course of Hygienic Chemistry in a Laboratory recognised by the University; and (3) of having attended a course of Bacteriology. Candidates will be admitted to Part II. of the examination on producing evidence (1) of being at least 24 years of age; (2) of having during a period of six months after obtaining a registrable qualification, practically studied out-door sanitary work, under the medical officer of health of a county or large urban district with a population of at least 50,000, or under the medical officer of health of two or more combined districts with a similar population, or else held appointment as medical officer of health under conditions not requiring the possession of a Diploma in Public Health; and (3) of having attended the practice of a hospital for infectious diseases, recognised by the University, either before or after obtaining his registrable qualification.

*University College, Cardiff.*—During the last year a department of Public Health has been established at Cardiff, and courses of instruction in public health instituted, which have received the recognition of the University of Cambridge, of Victoria University, and of the Royal College of Physicians. At the beginning of the year Dr. W. G. Savage was appointed Lecturer in Bacteriology and later Dr. Edward Walford and Dr. William Williams were appointed lecturers in Public Health and Hygiene. The Cardiff Corporation and the Glamorgan County Council have placed their public health laboratory at the disposal of the college for teaching

purposes. During the last month Mr. John H. Sugden has been appointed assistant to the bacteriologist.

### SCOTLAND.

*Edinburgh University.*—Two degrees in Science in the Department of Public Health are conferred by the University of Edinburgh, viz., Bachelor of Science in Public Health and Doctor of Science in Public Health. Candidates for the degree of B.Sc. in Public Health must be graduates in Medicine of a University of the United Kingdom, or of some other University recognised for the purpose, and must pass two examinations, for the first of which they must, after graduation in Medicine, have worked for at least twenty hours per week during a period of not less than eight months, of which at least five consecutive months must be in the Public Health Laboratory of the University of Edinburgh and the remainder either there or in a laboratory recognised by that University; they must also have attended lectures on Physics and Geology in some Scottish University. Candidates are not admitted to the Second Examination sooner than six months after having passed the First Examination, nor sooner than eighteen months after having taken their degree in Medicine, and they must have attended two separate courses in Public Health in some University of the United Kingdom or in such medical school or Indian, Colonial, or Foreign University as may be approved for the purpose by Edinburgh University, each course consisting of forty lectures at least; one of these courses shall deal with medicine and the other with engineering, each in its relation to public health. They must also give evidence (1) that for six months they have practically studied sanitary work under the medical officer of health of a county or borough or district containing a population of not less than 25,000; (2) that they have had three months' clinical instruction regarding fevers and infectious diseases; and (3) that they have had three months' instruction in mensuration and drawing. The subjects of examination include Laboratory work, Physics, Geology, Medicine in its application to Public Health, Sanitation, Sanitary Law, and Vital Statistics. Graduates who have held the degree of B.Sc. in Public Health from the University of Edinburgh for a term of five years may offer themselves for the degree of D.Sc. in Public Health in that University. They must then present a Thesis and pass an examination in Public Health. The fees are £3 3*s.* for the First and £3 3*s.* for the Second B.Sc. Examinations, and £10 10*s* for the degree of D.Sc.

*University of Aberdeen.*—The Diploma in Public Health (D.P.H.) is conferred only on graduates in Medicine of a University in the United Kingdom; and a period of not less than twelve months must elapse between medical graduation and entrance to the examination for the diploma. Every candidate must produce evidence of having attended, after graduation in Medicine, during a period of six months, practical instruction in Hygiene and Bacteriology in laboratories approved of by the University, together with having for a like period after graduation practically and daily studied the duties of outdoor sanitary work under the medical officer of health of a county or large urban district, or of having himself held appointment as medical officer of health. He must also have regularly attended for six months the wards of a general fever hospital containing not less than fifty beds. Every candidate who is not a graduate in Medicine of this University must have attended a course of instruction in the University in one or more of the subjects embraced in the examination for the diploma. The diploma is conferred after an examination in Public Health held in March and July of each year. Candidates desiring to appear for examination at either of these periods must send in their names, with the necessary fee, to the Secretary of the Medical Faculty a fortnight before the examination. The fee is £5 5*s.* The examination is conducted by specially qualified examiners appointed by the University. Candidates may enter for the whole examination at one period or they may enter for Part I. at one period and for Part II. at another and subsequent period.

*The Royal Colleges of Surgeons and Physicians of Edinburgh and the Faculty of Physicians and Surgeons of Glasgow.*—All candidates for the Diploma in Public Health must have been qualified for at least one year. Those qualified before 1890 and also those who have held the position of medical officer of health to a county or to an urban district of more than 20,000 inhabitants, or an entire rural sanitary district, do not require to produce evidence of attendance on any special courses. All other candidates must have attended, after qualifying, six months' practical instruction in a recognised public health laboratory or laboratories, and must have studied for six months the duties of outdoor sanitary work under the medical officer of health of a county or large urban district, or must themselves have held an appointment as medical officer of health under conditions not requiring the possession of a sanitary diploma. It is also recommended where possible to take out a course of instruction in the diseases of animals transmissible to man. There are two examinations, and candidates may enter for both at one period or for either separately. The First Examination includes (*a*) Laboratory Work, (*b*) Chemistry, (*c*) Physics, and (*d*) Meteorology; and the Second Examination embraces (*a*) Report on Premises visited, (*b*) Examination at Fever Hospital, (*c*) Examination at Public Abattoir, (*d*) Epidemiology and Endemiology, (*e*) Vital Statistics and Sanitary Law, and (*f*) Practical Sanitation. The fee is 12 guineas for both examinations, or 6 guineas for either of them. A fee of £3 3*s.* is payable by rejected candidates to either examination. The examination is held twice yearly in May and October. The published regulations provide detailed synopses of the subjects of examination and give lists of books from which to select. The Registrar for Edinburgh is Mr. James Robertson, solicitor, 43, George-square, and for Glasgow Mr. Alexander Duncan, LL.D., 242, St. Vincent-street.

### IRELAND.

*Royal University of Ireland.*—This University grants a Diploma in Sanitary Science. It is conferred only on graduates in Medicine of the University. Candidates are not admitted to this examination until the lapse of twelve months from the time of obtaining the first registrable qualification; they must give notice in writing to the Secretaries of their intention to present themselves and must pay the fee, £2 at least one month previously to the examination. Candidates are required to produce a certificate of having, *after obtaining the degree of M.B., B.Ch., B.A.O.*, attended six months' practical instruction in a laboratory approved by the University, and also of having for six months practically studied the duties of outdoor sanitary work under the Medical Officer of Health of a county or large urban district. Candidates at this examination must answer in the following subjects. (1) Physics, (2) Climatology, (3) Chemistry, (4), Microscopy, (5) Bacteriology, (6) Geology, (7) Sanitary Engineering, and (8) Hygiene, Sanitary Law, and Vital Statistics.

*University of Dublin.*—The Diploma in Public Health is conferred, after examination, on the following conditions:—The candidate must be a Doctor in Medicine or a graduate in Medicine and Surgery of Dublin, Oxford, or Cambridge. The name of the candidate must have been on the Medical Register at least twelve months before the examination. The candidate must have completed (unless registered as a practitioner on or before Jan. 1st, 1890), subsequently to registration, six months' practical instruction in a laboratory approved by the University and also have studied practically outdoor sanitary work for six months, under an approved officer of health. The subjects of examination will be—(*a*) State Medicine and Hygiene, including causation and prevention of disease, contagion in different diseases morbid diathesis, congenital diseases and malformations, diseases of animals in relation to the health of man, diseases of the vegetable kingdom, famine diseases, causes of origin and spread of epidemics, principles of bacteriology, quarantine, disinfection, &c.; (*b*) Chemistry, including air, water, and articles of food and drink, and their chemical and microscopical examination and analysis, the detection of common poisons and recognition of injurious pigments, &c.; (*c*) Physics and Meteorology; (*d*) Engineering; (*e*) Morbid Anatomy; (*f*) Vital Statistics; (*g*) Medical Jurisprudence; (*h*) Practical Sanitary Engineering, Epidemiology, and Duties of a Public Health Officer; and (*i*) Law.

*Royal College of Physicians and Royal College of Surgeons in Ireland.*—Stated examinations for the Diploma in State Medicine are held in the months of February, May, and November. A special examination for the diploma can be (except during the months of August and September) obtained on payment of £10 10*s.*, in addition to the ordinary fees mentioned below, and on giving notice at least one fortnight before the date of the proposed examination. Every candidate for the Diploma in State Medicine must be a registered medical practitioner. (Candidates registered or entitled to be registered prior to January, 1890, are

exempt from the rules as to study.) He must subsequently to qualification (1) receive six months' laboratory instruction in Chemistry, Bacteriology, and the Diseases of Animals transmissible to man; and (2) during six months either practically study outdoor sanitary work under a medical officer of health or himself hold an appointment of medical officer of health under conditions not requiring the possession of a special sanitary diploma, and shall as an additional requirement attend a hospital for infectious diseases, unless this has been already done during his ordinary medical course. Candidates are examined on four days commencing on the first Tuesday of February, May, and November. Each candidate must return his name to the secretary of the Committee of Management under the Conjoint Scheme three weeks before the examination, and lodge with him a testimonial of character from a Fellow of either of the Colleges, or of the Royal Colleges of Physicians or Surgeons of London or Edinburgh. The fee for the examination is £10 10s. The examination for the diploma in State Medicine comprises the following subjects:—State Medicine and Hygiene, Chemistry, Meteorology and Climatology, Engineering, Vital Statistics, Law and Bacteriology. For further particulars apply to the Secretary, Committee of Management; Office, Royal College of Physicians, Dublin.

## DENTAL SURGERY.

ANYONE who is on the Medical Register is entitled to practise as a dentist, although he cannot register as such without the special licence; but it is of eminent advantage to take the L.D.S., otherwise few dental appointments at general or special hospitals or dispensaries are available, and, what is still more important, the manual dexterity and knowledge of mechanics requisite for the successful practice of dentistry can only be gained by long and careful training at the dental operating chair and in the dental laboratory; and, this having been attained, it costs but little trouole to pass the special examinations. The subjects beyond those included in the general qualification are—Dental Anatomy and Physiology (Human and Comparative), one course; a separate course of Dental Histology, including the preparation of microscopical sections; Dental Surgery, one course; a separate course of Practical Dental Surgery; a course of not less than five lectures on the Surgery of the Mouth; Dental Mechanics, one course; a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns; Dental Metallurgy, one course; a course of Practical Dental Metallurgy; Practice of Dental Surgery at a recognised school, two years, and a certificate of having been engaged during a period of not less than three years in acquiring a knowledge of Dental Mechanics (this may be obtained by apprenticeship to a duly qualified dental practitioner or in the mechanical department of a recognised dental hospital). In the case of qualified surgeons two years will suffice. The Dental Schools in London are the Dental Hospital of London, the National Dental Hospital and College, and Guy's Hospital Dental School. Most of the large provincial towns have now dental hospitals. A convenient arrangement by which the M.R.C.S., L.R.C.P., and L.D.S. can be taken is as follows:—The Preliminary Examination in General Education having been passed the student should become apprenticed to a qualified dentist and register as a dental and medical student. (This instruction, however, may be taken prior to the date of registration as a dental student.) During his apprenticeship the student should receive instruction in Chemistry and Physics, Pharmacy and Elementary Biology, and pass in these subjects before entering the hospital. (The foregoing constitute the First Examination.) Having entered the hospital the student should attend the dental and general courses contemporaneously, and pass at the end of the second winter the Second Examination—namely, Anatomy and Physiology. At the completion of his second year of study the Dental Examination should be passed. The student should then devote his time to general studies and pass the Third Examination. When time permits it is advisable to attend the general hospital only until after the First and Second Examinations have been passed. At this point a break may be made to admit of the completion of the dental curriculum and the passing of the examinations for the L.D.S. diploma. The best course, ho vever, is to entirely finish the curriculum for the M.R.C.S. and L.R.C.P. and then take the special Dental work. The regulations for the Dental Licence of the Royal Colleges of Ireland and Edinburgh and of the Faculty of Physicians and Surgeons of Glasgow are very similar to those of the English College. The L.D.S. can also be obtained alone.

### REGISTRATION OF DENTAL STUDENTS.

The registration of dental students is carried on at the Medical Council Office in London in the same manner as the existing registration of medical students, and subject to the same regulations as regards Preliminary Examinations. Students who commenced their professional education by apprenticeship to dentists entitled to be registered or by attendance upon professional lectures before July 22nd, 1878 (when dental education became compulsory), are not required to produce evidence of having passed a Preliminary Examination. Candidates for a diploma in Dental Surgery must produce certificates of having been engaged during four years in professional studies and of having received three years' instruction in mechanical dentistry from a registered practitioner. One year's *bonâ-fide* apprenticeship with a registered dental practitioner, after being registered as a dental student, may be counted as part of the four years of professional study. The three years of instruction in mechanical dentistry, or any part of them, may be taken by the dental student either before or after his registration as a student, but no year of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration.

It is now necessary for anyone practising Dental Surgery in this country to register and no foreign qualifications are admitted. Formerly exception was made with regard to the Universities of Harvard and Michigan.

*The Royal College of Surgeons of England* grants a diploma in Dental Surgery under the following regulations, which apply to all candidates who have registered as dental students after Jan. 1st, 1897. Candidates are required to pass three examinations: the Preliminary Science Examination, the First Professional Examination, and the Second Professional Examination. I. Preliminary Science Examination.—Before admission to this examination the candidate must produce a certificate of having received instruction (which may be taken prior to the date of registration as a dental student) at a recognised institution in Chemistry, Physics, and Practical Chemistry. The examination consists of these subjects and is identical with Part I. of the First Examination of the Examining Board in England. II. The First Professional Examination.—The candidate must produce the following certificates: 1. Of having been engaged during a period of not less than three years in acquiring a practical familiarity with the details of mechanical dentistry, under the instruction (which may be taken prior to registration as a dental student) of a competent practitioner or under the direction of the superintendent of the mechanical department of a recognised dental hospital. In the case of qualified surgeons evidence of a period of not less than two, instead of three, years of such instruction will be sufficient. 2. Of registration as a dental student by the General Medical Council. 3. Of having attended at a recognised Dental Hospital and School (*a*) a course of lectures on Dental Metallurgy; (*b*) a course of Practical Dental Metallurgy; (*c*) a course of Lectures on Dental Mechanics; and (*d*) a course of Practical Dental Mechanics, including the manufacture and adjustment of six dentures and six crowns. Candidates may present themselves for the First Professional Examination after the completion of six months' attendance at a recognised Dental Hospital and School. The Examination consists of Mechanical Dentistry and Dental Metallurgy; the examination in Dental Metallurgy will be by written paper. III. The Second Professional Examination—The candidate must produce the following certificates: 1. Of having been engaged during four years in the acquirement of professional knowledge subsequently to the date of registration as a dental student. 2. Of having attended at a recognised dental hospital and school (*a*) a course of Dental Anatomy and Physiology; (*b*) a separate course of Dental Histology, including the preparation of microscopical sections; (*c*) a course of Dental Surgery; (*d*) a separate course of Practical Dental Surgery; and (*e*) a course of not less than five lectures on the Surgery of the Mouth, which lectures may be given at a dental hospital or at a recognised medical school; in the latter case they may form part of the course of lectures on Surgery. 3. Of

having attended at a recognised dental hospital or in the dental department of a recogised general hospital the practice of Dental Surgery during two years. 4. Of having attended at a recognised medical school (*a*) a course of lectures on Anatomy, (*b*) a course of lectures on Physiology, (*c*) a separate Practical Course of Physiology, (*d*) a course of lectures on Surgery, and (*e*) a course of lectures on Medicine. 5. Of having performed Dissections at a recognised medical school during not less than twelve months. 6. Of having attended at a recognised hospital the practice of Surgery and Clinical Lectures on Surgery during two winter sessions. 7. Of being twenty-one years of age. The certificates of professional study will be required to show that students have attended the courses of professional study to the satisfaction of their teachers. Candidates may present themselves for the Second Professional Examination after the completion of four years' professional study from the date of registration as a dental student and after the lapse of not less than six months from the date of passing the First Professional Examination. The Second Professional Examination consists of General Anatomy and Physiology, General Surgery and Pathology, Dental Anatomy and Physiology, Dental Pathology and Surgery, and Practical Dental Surgery. The written examination comprises General Anatomy and Physiology, General Pathology and Surgery, Dental Anatomy and Physiology, and Dental Pathology and Surgery. At the Practical Examination candidates may be examined (*a*) on the treatment of Dental Caries, and may be required to prepare and fill cavities with gold or plastic filling or material, or to do any other operation in Dental Surgery (candidates must provide their own instruments); (*b*) on the Mechanical and Surgical Treatment of the various irregularities of Children's Teeth. There is also an Oral Examination. Exemption from the Preliminary Science Examination is granted to candidates who have passed an Examination in Chemistry and Physics for a degree in Medicine at a University in the United Kingdom, in India, or in a British colony. Exemption from Examination in Anatomy and Physiology is granted to candidates who have passed the Second Examination of the Examining Board in England or the corresponding Examination of the Royal College of Surgeons of Edinburgh, of the Royal College of Surgeons in Ireland, or the Faculty of Physicians and Surgeons of Glasgow, or of any University in the United Kingdom. Exemption from Examination in General Surgery and Pathology is granted to candidates who have passed the Examination in Surgery of the Examining Board in England or the corresponding Examinations of the Colleges and Universities above mentioned. The fee for the diploma is 20 guineas and is payable as follows:—Preliminary Science Examination, 3 guineas; First Professional Examination, 2 guineas; Second Professional examination, 5 guineas; the balance to be paid on the completion of the Examinations. The Preliminary Science Examination is held in January, March or April, July, and October in each year. The First and Second Professional Examinations are held in May and November in each year. Candidates must give twenty-one clear days' notice of their intention to present themselves for examination.

*Royal College of Surgeons, Edinburgh.*—For the Licence in Dental Surgery all candidates must pass a Preliminary Examination in General Knowledge and have their names inscribed in the Register of Dental Students of the General Medical Council. A copy of regulations, giving a list of Preliminary Examinations recognised for obtaining this Licence, as well as of the subjects of the Professional Examinations, may be obtained from Mr. James Robertson, Clerk to the Royal College of Surgeons, at 48, George square, Edinburgh. Students who commenced their professional education by apprenticeship or attendance on lectures before July 22nd, 1878, are exempt from the Preliminary Examinations. Candidates must produce certificates of having, subsequently to the date of registration, been engaged for four years in professional studies and of three years' instruction in Mechanical Dentistry from a registered dental practitioner, except in the case of previously registered medical practitioners, when two years will be considered sufficient. Candidates who have commenced their studies *after* Oct. 1st, 1890, must have attended the following curriculum: Anatomy, one course of six months; Practical Anatomy, twelve months; Chemistry, one course of six months; Practical Chemistry, one course of three months; Physiology, one course of six months; Materia Medica, one course of three months; Surgery, one course of six months; Medicine, one course of six months; and attendance on the practice of a recognised general hospital, with Clinical Instruction, twelve months. (Candidates who commenced study in accordance with the regulations in force before July, 1895, shall not be required to attend more than six months' hospital work.) These courses must have been attended at a University or in an established school of medicine or in a provincial school specially recognised by the College as qualifying for the diploma in Surgery. In addition to these courses candidates will be required to have attended in a recognised dental hospital, or with teachers recognised by the College, the following special courses of lectures and instruction: Dental Anatomy and Physiology (Human and Comparative) (not less than 24 lectures), Dental Surgery and Pathology (not less than 20 lectures), Dental Mechanics (not less than 12 lectures)—one course each; two years' attendance at a dental hospital or the dental department of a general hospital recognised by the College. Certificates of attendance on such of these courses of the new curriculum as may be respectively required will entitle candidates to appear either for the First Dental Examination or for the First and Second Examinations for the Triple Qualification, as they may select, and subject to the existing regulations for each qualification. Candidates who have passed the First and Second Examinations for the Triple Qualification will be exempt from the First Dental Examination and will have the advantage of being admissible either to the Final Dental Examination or to the subsequent Examination for the Triple Qualification, or to both. But the First Dental Examination will not be held as equivalent to the First and Second Triple Examinations and will admit to the Final Dental Examination only. Candidates who are Licentiates of this College or who may be registered medical practitioners will be required to produce certificates of attendance on the special subjects only and will be examined in these only for the dental diploma. First Professional Examination: The candidate must have attended the courses on Anatomy, Chemistry, and Physiology. The examination embraces Anatomy, Chemistry and Physiology. The fee is £4 4*s*. Second Examination: The candidate must have attended the remaining courses of the curriculum, must produce certificates showing that he is twenty-one years of age, and must pay a fee of £6 6*s*. The examination embraces Surgery, Medicine, Therapeutics, and the special subjects of Dental Anatomy and Physiology, Dental Surgery and Pathology, and Dental Mechanics with Dental Metallurgy. Unsuccessful candidates will be repaid £2 2*s*. in the First and £3 3*s*. in the Second Examinations. Candidates who claim exemption from the First Dental Examination on the ground of having passed the First and Second Triple Qualification Examinations will, before being admitted to the Second Dental Examination, be required to pay the total fee of £10 10*s*. payable for the dental diploma, of which £3 3*s*. will be returned in case of rejection. The fee payable by candidates who begin study after Oct. 1st, 1896, shall be £15 15*s*.

*Faculty of Physicians and Surgeons of Glasgow.*—The regulations as to certificates, curriculum, number, and subjects of examinations, fees, &c., are in effect similar to those of the Royal College of Surgeons of Edinburgh. Special provision is made for candidates who intend to qualify both in Medicine and in Dentistry. There is a practical examination in Mechanical Dentistry and also an examination in Practical Dentistry conducted in a dental hospital.

*Royal College of Surgeons in Ireland.*—All information concerning the licence in Dentistry may be obtained from the Registrar of the College, who will receive the applications of candidates for permission to be examined. The bank receipt for fees, together with all certificates, &c., are to be lodged with him at least seven days prior to the day fixed for the commencement of the examination. The Primary Dental Examinations commence on the second Monday in the months of February, May, and November. The Final Dental Examinations commence on the Thursdays immediately following the Primary Dental Examinations. Candidates are required to pass three examinations—viz., Preliminary (in General Education), Primary Dental, and Final Dental. Preliminary Examination.—All examinations in general education recognised by the General Medical Council are accepted by the College. Preliminary Examinations are held conjointly by the Royal Colleges of Physicians and Surgeons on the third Wednesdays in March and September. Primary Dental

Examination.—Fee £10 10*s.*; for re examination, if rejected, £5 5*s.* Every candidate[1] is required, before admission to the Primary Dental Examination, to produce evidence—(1) of having passed a recognised preliminary examination and of having been registered as a medical or dental student by the General Medical Council; (2) of having, subsequently to registration as a dental or medical student, attended at a recognised medical school the following courses: Lectures on Practical Anatomy, including Dental Anatomy, six months; Demonstrations and Dissections, two courses of six months each; Lectures on Chemistry, six months; Lectures on Physiology, including Dental Physiology, six months; Practical Histology; and Practical Chemistry, including Metallurgy, three months; (3) of having attended Clinical Instruction at a recognised general hospital for one year. The subjects of this examination are: (1) Physics;[2] (2) Chemistry, including Metallurgy; (3) Anatomy; (4) Physiology and Histology; and (5) Surgery. Final Examination.—Candidates holding L.R.C.S.I. or students who have passed Primary Dental or Third Professional Examination of the College, £10 10*s*; re-examination, £5 5*s*. Fees for Final Examination of all other candidates, £26 5*s*.; re-examination, £10 10*s*. Extra fee for Special Examination, £5 5*s*. Candidates must produce evidence of having passed the Primary Dental Examination of this College, or the Third Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognised by the College, and are required to produce certificates of having attended: (1) the following courses of lectures recognised by the College: Dental Surgery and Pathology (two courses), Dental Mechanics (two courses); (2) for two years the practice of a dental hospital recognised by the College or of the dental department of a general hospital so recognised; (3) of having been engaged during four years in professional studies; and (4) of having received three years' instruction in Mechanical Dentistry from a registered dentist. Candidates holding a diploma in Surgery shall be admissible to the Final Dental Examination on producing certificates of having attended: (1) one course of Lectures on Dental Surgery and Pathology; (2) one course of Lectures on Dental Mechanics; (3) for one year the practice of a dental hospital recognised by the College, or of the dental department of a general hospital so recognised, where such attendance has been subsequent to the date of diploma (this remission (3) has been made on the understanding that the surgeon devotes his whole time to dental work); and (4) of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of Mechanical Dentistry under the instruction of a registered dentist. The following are the subjects of examination: Dental Surgery, Theoretical (including Dental Pathology), Clinical, and Operative; Dental Mechanics, Theoretical, Clinical, and Practical (including the Metallurgy of the Workshop). Examinations for the Licence in Dentistry *sine curriculo:* The Council has power to admit to examination, *sine curriculo*, candidates whose names are on the Dental Register published under the direction of the General Medical Council, and who are unable to furnish the certificates required by the foregoing regulations, on presentation of a special schedule of application.

## TEACHING INSTITUTIONS.

### ENGLAND.

*Dental Hospital of London and School of Dental Surgery, Leicester-square.*—The school provides the special dental education required by the Royal College of Surgeons for the Licence in Dental Surgery. The general part of the curriculum may be taken at any general hospital. The hospital is open from 9 A.M. to 4 P.M., there being one staff for the morning and another for the afternoon of each day. Pupils are received for the three years' mechanical training recognised by the curriculum. The demonstrators at the commencement of each session give a course of lectures on Operative Dental Surgery. The eight house surgeoncies are held for one year each, and are open to all qualified students. The lecturers in addition to their lectures, give special demonstrations on the Microscopy of Dental Anatomy and Dental Surgery. The lecturer on Dental Mechanics also gives practical demonstrations in the mechanical laboratory. Two scholarships of the value of £20 have been founded by Sir Edwin Saunders and Dr Joseph Walker. Prizes and certificates are awarded by the lecturers for the best examinations in the subjects of their respective courses, at the end of the summer and winter sessions. A prize of the value of 5 guineas is given by Messrs. Ash and Sons for the best essay on some surgical subject connected with Dental Surgery. The conditions under which this prize is to be competed for are the same as those for the Saunders Scholarship, with this exception, that the papers are to be written in the hospital during the summer session. Consulting Physician: Sir Richard Douglas Powell, Bart., M.D. Consulting Surgeon: Mr. Christopher Heath, F.R.C.S. Consulting Dental Surgeons: Mr. T. Arnold Rogers, M.R.C.S., L.D.S., and Mr. Smith Turner, M.R.C.S., L.D.S. Dental Surgeons: Leonard Matheson, L.D.S.; E. Lloyd Williams, L.R.C.P., M.R.C.S., L.D.S., L.S.A.; W. B. Paterson, F.R.C.S., L.D.S.; W. H. Woodruff, L.D.S.; A. Clayton Woodhouse, M.R.C.S., L.D.S.; and J. F. Colyer, L.R.C.P., M.R.C.S., L.D.S. Assistant Dental Surgeons: C. F. Rilot, L.R.C.P., M.R.C.S., L.D.S.; H. Lloyd Williams, M.R.C.S., L.D.S.; W. H. Dolamore, L.R.C.P., M.R.C.S., L.D.S.; G. Hern, L.R.C.P., M.R.C.S., L.D.S.; J. G. Turner, L.R.C.P., F.R.C.S., L.D.S.; Russell Barrett, L.R.C.P., M.R.C.S., L.D.S.; N. G. Bennett, M.A., M.B., B.C., L.R.C.P., M.R.C.S., L.D.S.; D. P. Gabell, L.R.C.P., M.R.C.S., L.D.S.; and W. J. May, L.R.C.P., M.R.C.S., L.D.S.; A. Hopewell Smith, L.R.C.P., M.R.C.S., L.D.S.; W. S. Nowell, M.A., L.R.C.P., M.R.C.S., L.D.S. Anæsthetists: Dudley W. Buxton, M.D., B.S. Lond., M.R.C.P. Lond.; Frederic W. Hewitt, B.A., M.D. Cantab.; Carter Braine, F.R.C.S.; Henry Davis, M.R.C.S., L.S.A.; George Rowell, F.R.C.S.; and E. A. Bridger, M.D. Assistant Anæsthetists: R. Turle Bakewell, M.B. Lond., L.R.C.P., M.R.C.S.; R. J. Probyn-Williams, M.D. Durh.; H. Bellamy Gardner, L.R.C.P., M.R.C.S.; George Flux, M.D. Brux.; H. J. Paterson, M.A., M.B., B.C. Cantab., F.R.C.S. Demonstrators: H. Austin, M.D. Lond., L.D.S.; R. Herschell, L.D.S.; and R. McKay, L.R.C.P., M.R.C.S., L.D.S.; and H. E. Cribb, L.D.S. Medical Tutor: W. S. Nowell, M.A. Oxon., L.D.S. Curator of Mechanical Laboratory: W. E. Fletcher. Lecturers.—Dental Anatomy and Physiology (Human and Comparative): Charles Tomes, F.R.S., M.A. Oxon., F.R.C.S., L.D.S., assisted by Mr. Hopewell Smith in Dental Histology. Dental Surgery and Pathology: W. Hern, L.R.C.P., M.R.C.S., L.D.S., assisted by Mr. R. Herschell. Mechanical Dentistry: E. Lloyd Williams, L.R.C.P., M.R.C.S., L.D.S., L.S.A. Metallurgy in its Application to Dental Purposes: Dr. Forster Morley, M.A., F.I.C., F.C.S., assisted by Mr. H. Richards. During the sessions the surgeons of the day will give demonstrations at stated hours. The house surgeons attend daily while the hospital is open. Fee for two years' hospital practice required by the curriculum, including lectures, £50 in one payment, or 50 guineas in two yearly instalments. The curriculum requires two years to be passed at a General Hospital; the fee for this is about £55. Both hospitals can be attended simultaneously. The Dean, Mr. Morton Smale, attends at the hospital every Wednesday morning from 10 to 12, or he can be seen at other times by appointment. Letters to be addressed—The Dean, 40, Leicester-square, "to be forwarded."

*National Dental Hospital and College.*—Winter Session, 1900–1901, commences on Oct. 1st at the new building at the corner of Great Portland and Devonshire-streets, W.—Consulting Physician: Sir W. H. Broadbent. Consulting Surgeon: Mr. Christopher Heath. Consulting Dental Surgeon: Sir Edwin Saunders. Visiting Physician: Dr. James Maughan. Visiting Surgeon: Mr. E. W. Roughton. Dental Surgeons: Mr. F. H. Weiss, Mr. A. Smith, Mr. M. Davis, Mr. T. G. Read, Mr. Rushton, and Mr. C. W. Glassington. Assistant Dental Surgeons: Mr. W. Weiss, Mr. E. Beverley, Mr. S. F. Rose, Mr. A. E. Relph, and Mr. H. J. Relph. Anæsthetists: Mr. H. P. Noble, Mr. C. E. A.

[1] Candidates educated in England or Scotland are admitted to the Primary Dental Examination on the production of the certificates that would be necessary for both Primary and Final Examinations in their own countries.

[2] Candidates who have passed in Chemistry and Physics at a First Professional Examination under the Conjoint Board with the Royal College of Physicians in Ireland, or with the Apothecaries' Hall, or an equivalent examination recognised by the College, are exempted from examination in these subjects at the Primary Dental Examination.

Macleod, Mr. C. J. Ogle, Mr. G. E. Norton, Dr. J. Maughan, and Dr. Harold Low. Lecturers (winter), Dental Anatomy and Physiology: Dr J. W. Pare, Tuesdays and Thursdays, 5 P.M., in October, November, and December. Dental Metallurgy: Dr. A. B. Griffiths, Tuesdays, 5.45 P.M., in January, February, and March. Dental Mechanics: Mr. H. Rose, Wednesdays, 6 P.M., in January, February, and March. Summer—Dental Surgery and Pathology, Mr. H. J. Relph, Tuesdays and Fridays, 6 P.M., in May, June, and July. Surgery of the Mouth: Mr. E. W. Roughton, Mondays at 5, May, June, and July. Practical courses to comply with the R.C.S. curriculum are also held. The hospital is lighted throughout by electricity and warmed and ventilated by approved methods. Clinical Lectures and Demonstrations are given from time to time, and each student on entering passes through a preliminary course under a demonstrator. The stopping rooms have accommodation for sixty chairs. Dresserships in the extraction and stopping rooms are re-arranged every three months. An Entrance Exhibition, of the value of £15, is open for competition at the commencement of each summer and winter session. Prizes in medals are open for competition at the end of each course of lectures. Certificates of honour are given in each class. The Rymer Medal for General Proficiency, value £5, is awarded annually to the most meritorious student; and the Ash Prize, value £3 3*s.*, for a Thesis on a subject in Dental Surgery. Total fee for the Special Lectures and Hospital Practice required, 40 guineas. Single Courses: Dental Anatomy and Physiology, Dental Surgery and Pathology, Dental Mechanics, Dental Metallurgy, Dental Materia Medica, Demonstration of Dental Mechanics, £5 5*s.* each. Hospital Practice to registered practitioners by special permission of Committee, twelve months, £15 15*s.* The Committee also consider applications from medical men who may desire to attend the Anæsthetic Room for a course of instruction in Nitrous Oxide administration. Information respecting the Hospital Practice and the College may be obtained from the Dean, Mr. Sidney Spokes, who attends at the Hospital, Great Portland-street, on Tuesday mornings.

*Guy's Hospital.*—The work of the Dental Department begins daily at 9 A.M. both in the extraction rooms and in the conservation room. *The Extraction Rooms:* Patients are admitted between 9 and 9.30 A.M., and are seen by the dental surgeon for the day, the dental house surgeon, the assistant dental house surgeon, and the dressers. Such cases as are suitable for conservative treatment are transferred to the conservation room, taking with them a dental chart to indicate the treatment required. *The Conservation Room:* This room is open from 9 A.M. till 5 P.M. There are 55 Morrison chairs for the use of the Dressers, who, under the supervision of the Staff, perform the various operations of Dental Surgery. The members of the staff attend every morning and afternoon in the week to give demonstrations and otherwise assist students in their work in the Conservation Room and Mechanical Laboratory. Dental students have the opportunity of attending concurrently at this hospital the two courses of instruction required by the examining board for the L.D.S. Eng., viz., the special lectures and practice of the Dental Department and the general lectures and practice of the Medical School. The fees for these two courses may be paid separately or together, or they may be combined with the fees required to be paid for the course for a medical diploma. Students who enter for a medical as well as a dental diploma are allowed to pursue their study of Dentistry during any period of their medical course most convenient to themselves without further charge. An Entrance Scholarship[3] in Arts of the value of £30 is offered for competition annually in September, and prizes of the aggregate value of £35 are awarded for general proficiency and skill in Practical Dentistry. Dental students are eligible for admission to the Residential College and enjoy the other social privileges of students in the Medical School.

*London Hospital.*—Mr. Dolamore and Mr. Farmer give practical instruction during the winter and summer sessions on Mondays, Tuesdays, Thursdays, and Fridays at 9 A.M. In selecting from candidates for the office of Dental Assistant priority will be given to those who have attended the greatest number of lectures on Dental Pathology and Surgery, and have also been the most punctual in attendance in the dental department. A class for special instruction in filling teeth will be formed each term. Candidates for Dressership must undertake to attend regularly on Mondays and Thursdays, or on Tuesdays and Fridays, for three months, and to follow the practical course of demonstrations.

*University of Birmingham.*—The teaching of Dentistry is undertaken by the University acting in association with the Birmingham Dental Hospital and the Birmingham Clinical Board, so that the students may fully qualify themselves for the Dental diploma of the Royal Colleges. There is a special and well-equipped Dental Museum and Laboratory. An Entrance Exhibition, value £37 10*s.*, is awarded annually at the commencement of the winter session. Medals and honour certificates are awarded annually in the various classes. The following are the regulations for Degrees in Dentistry:—1. The degrees conferred by the University are those of Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.). 2. All candidates for these degrees must pass the same Matriculation Examination as that required from candidates for Medical Degrees. 3. The degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained a Licence in Dental Surgery from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until a period of 12 months has elapsed from the passing of his examination for the Licence in Dental Surgery. Of this period at least six months must be spent in the dental department of a general hospital approved by the University. 4. *A.* In addition to the Licence in Dental Surgery the candidate must produce evidence that he has attended the Courses required by medical students of the University in the following subjects and passed the Examinations held in the same for Medical and Surgical Degrees: (*a*) Chemistry and Practical Chemistry, (*b*) Physics and Practical Physics, (*c*) Biology, (*d*) Anatomy and Practical Anatomy, and (*e*) Physiology and Practical Physiology. *B.* That he has attended the following Courses: (*f*) One Course of Lectures on Medicine, (*g*) One Course of Lectures on Surgery, (*h*) Special Courses of Lectures on the Surgery and Medicine of the Mouth, and (*i*) Pathology and Bacteriology, and has passed the examinations for candidates for Dental Degrees held in each of these subjects: *C.* That he has attended Courses in: (*k*) Dental Histology and Patho-Histology, (*l*) Comparative Dental Anatomy, and (*m*) Dental Surgery and Prosthetic Dentistry. *D.* That he has received instruction in the Clinical Examination of living cases at the dental department of a general hospital for a period not less than six months. 5. The Final Examination will deal with the subjects in Classes *C.* and *D.* 6. On the expiration of 12 months from the date of passing the Examination for the Degree of Bachelor of Dental Surgery, the candidate will be eligible for that of Master of Dental Surgery. 7. For this degree candidates will be required to submit a thesis containing original work and investigations in some subject connected with Dentistry, which thesis shall be submitted to examiners to be nominated by the Board of Dental Studies. The degree will be awarded or withheld according to the report of these examiners.

*University College, Bristol.* — Dental students can enter for the full curriculum at Bristol. The Lectures are delivered at the college. Practical instruction is given at the *Royal Infirmary* by Mr. Ackland and at the *General Hospital* by Mr. Genge, both institutions being recognised by the Dental Board of the Royal College of Surgeons of England. Full information may be obtained of the Dean of the Medical Faculty, Professor E. Markham Skerritt, University College, Bristol.

*Owens College, Manchester* —Arrangements have been made for dental students to attend the hospital practice at the Manchester Royal Infirmary and the practice at the Victoria Dental Hospital. Lectures on special subjects will be given in the College as follows:—Winter session: Dental Mechanics, Mr. Tanner, Thursday, 4 P.M. Dental Metallurgy, Mr. J. P. Headridge, Monday, at 3.30 P.M. Summer session: Dental Anatomy and Physiology, Dr. Preston, Tuesday at 4 P.M., Friday at 2 P.M. Dental Surgery, Mr. Campion, Tuesday and Friday, 3 P.M. Practical and Operative Dental Surgery, Mr. Whittaker, Wednesday: Lecture, 2.30 P.M.; Demonstration, 4 P.M. Lectures in Dental Histology, Mr. D. Headridge, Monday, at 2 P.M. Fee for each course £4 4*s.* for the Class in Practical

[3] In Sept., 1901, a scholarship of the same value in Dental Mechanics will be substituted. A Dental Travelling Scholarship of the value of £100 has been founded. The next award will be made in June, 1902.

Metallurgy, £2 2s. Dental practice for two years at the Manchester Royal Infirmary, £10 10s.; at the Victoria Dental Hospital at Manchester, £21, paid in advance, or £13 13s. for the first year and £8 8s. for the second year. At the Victoria Dental Hospital patients attend at 8.30 A.M. daily, and at 6.30 P.M. on Monday, Wednesday, and Friday. Consulting Physician: (vacant). Consulting Surgeon: Mr. J. Hardie. Consulting Dental Surgeon: Mr. H. Campion. Dental Surgeons: Mr. G. G. Campion, Mr. E. P. Collett, Mr. J. W. Dunkerley, Mr. W. Dykes, Mr. W. Headridge, Mr. W. A. Hooton, Mr. P. A. Linnell, Mr. F. W. Marshall, Mr. I. Renshaw, Mr. W. Simms, Mr. T. Tanner, and Mr. G. O. Whittaker. Assistant Dental Surgeons: Mr. H. T. Dreschfeld, Mr. D. Headridge, Mr. W. H. Norman, Mr. T. E. Sherratt, and Mr. C. H. Smale. Demonstrator: Mr. W. H. Jones. Tutor: Dr. C. H. Preston. Consulting Prosthetic Dental Surgeon: Mr. T. Tanner. Prosthetic Dental Surgeon: Mr. W. Nicholson. House Dental Surgeons: Mr. R. Howard and Mr. S. Kersh. Curator of Museum: Mr. D. Headridge. Administrators of Anæsthetics: Dr. A. Wilson, Mr. F. H. Westmacott, and Dr. W. B. Pritchard. Dean: Mr. William Simms.

*University College, Liverpool (Liverpool Dental Hospital and School of Dental Surgery).*—The courses of systematic instruction are given in University College, five minutes from the Dental Hospital. The two institutions are now closely associated and the management of the curriculum is in the hands of a joint committee. At the Dental Hospital recent alterations have been made and as it now stands this school offers advantages to students which are not excelled anywhere. The ground floor of the building contains the following: Extraction-room, with all needful appliances; anæsthetic room, specially reserved with every convenience; and large waiting-room for patients. The first floor has a large board-room and a very comfortable students' room set apart exclusively for the use of students. The whole top floor of the building has been thrown into one fine, airy, and well-ventilated operating room. This room will accommodate upwards of 30 operating chairs, which are of the "Morrison pattern," and each of which has a special electric light (canting pendant) suspended before it. In the basement a very convenient workroom has been fitted up containing the necessary requirements, and there are commodious lavatories for students. A new Laboratory for practical mechanical work was constructed last year, so as to meet the requirements of the curriculum. It is adequately furnished with all the modern appliances of a dental workshop. A skilled Dental Mechanic has been engaged and students are able to undertake at the hospital the whole of their training in Mechanical Dentistry. The times of the lectures at University College are arranged to meet the convenience of students, thus allowing the maximum time for attendance upon Dental Hospital practice. The staff of the hospital includes seven honorary Dental Surgeons, a Demonstrator, two House Surgeons, and a Curator. Fees for two years' hospital practice £21. Further information may be had from the Warden, Mr. W. H. Gilmour. The various medical and dental lectures are given at University College. The Anatomical Department contains an excellent collection of skulls illustrative of human and comparative dental anatomy. The dissecting-room and theatre are lighted by electricity. The Physiological and Pathological Departments are housed in new and spacious laboratories erected by the Rev. S. A. Thompson Yates. Fees: The composition fee for all lectures is £50 in one payment on entrance, or in two equal instalments (one-half on entrance and the remainder within twelve months). The fee for general hospital practice is £10 10s. Further particulars can be obtained of A. M. Paterson, M.D., Dean.

*Devon and Exeter Dental Hospital, Castle street, Exeter.*—Established 1880.—The hospital is open daily (Sundays excepted), and patients are admitted between the hours of 9 and 11 A.M. Students attending the practice of the hospital must consider themselves strictly under the control of the medical officers, and must not undertake any operation without the consent of the dental surgeon for the day. Hon. treasurer, Mr. J. M. Ackland; hon. secretary, Mr. Henry Yeo.

## SCOTLAND.

*The Incorporated Edinburgh Dental Hospital and School, 31, Chambers-street, Edinburgh.*—For the special classes, both theoretical and practical, required by dental students the directors have secured the services of an efficient staff of dental officers and lecturers. There will also be a course of demonstrations in Mechanical Dentistry. Students will receive instruction in Practical Dental Mechanics under the mechanician. The fee for clinics in gold filling is included in the Dental Hospital fee of £15 15s. The minimum cost of classes for the whole course of dental instruction amounts to £90 7s.

*Dental Hospital and School, Glasgow.*—The winter session will begin on Oct. 18th, and the lectures will be delivered as follows. In Dental Mechanics on Tuesday evenings, at 7.30 P.M., by Mr. Hugh McKay, L.R.C.S., L.R.C.P. Edin., L.F.P.S., L.D.S. and in Dental Metallurgy on Wednesday evenings at 7.30 P.M., by Professor T. R. Marshall, D.Sc. Ed., F.C.S. Fee for each of the above courses of lectures, £3 3s. The lectures and instruction at the Glasgow Dental Hospital and School are recognised by all the licensing bodies in the United Kingdom. The fees for two years' hospital practice are £15 15s. Intending students before commencing to attend the lectures or hospital practice must produce evidence of having passed the preliminary examination prescribed by the regulations of the General Medical Council for registration of dental students. The hospital is open daily from 5 to 7 P.M. (Saturdays excepted). Students may enrol either at the beginning of the winter or summer session.

*Glasgow Royal Infirmary* (Dental Department).—Mr. W. H. Gray, L.D.S., attends at the Royal Infirmary at 3 P.M. on Mondays, Wednesdays, and Saturdays, and gives a course of instruction in Dental Surgery on these days in summer. The following course in the curriculum can be taken at St. Mungo's College: Anatomy, six months; Practical Anatomy, nine months; Physiology, six months; Chemistry, six months; Practical Chemistry with Metallurgy, three months; Surgery, six months; Medicine, six months; Materia Medica, three months; Clinical Surgery, six months; Dental Surgery, six months, and attendance for two years on the dental department of the hospital. The attendance on the Dental Clinic is free to students of the hospital; to dental students, one year, £5 5s.; perpetual £10 10s. The winter session opens Thursday, Oct. 18th.

## IRELAND.

*Royal College of Surgeons in Ireland.*—The schools of surgery are attached by Charter to the Royal College of Surgeons and have existed as a department of the College for nearly a century. They are carried on within the College buildings and are specially subject to the supervision and control of the Council, who are empowered to appoint and remove the professors and to regulate the methods of teaching pursued. The buildings have been reconstructed, the capacity of the dissecting-room nearly trebled, and special pathological, bacteriological, public health, and pharmaceutical laboratories fitted with the most approved appliances in order that students may have the advantage of the most modern methods of instruction. A refreshment-room is now open where students can have luncheon. There are special rooms set apart for lady students. The entire building is heated by hot-water pipes and lighted throughout by the electric light. Dentistry: Professor R. T. Stack, M.D. Univ. Dub., F.R.C.S., L.D.S. Eng., Examiner Royal College of Surgeons, Dentist, Dental Hospital of Ireland. Arrangements are completed for the education of candidates for the Licence in Dental Surgery of the College, and all the lectures of the Dental curriculum are delivered during the summer and winter sessions. All the lectures and courses of practical instruction may be attended by medical students who are otherwise unconnected with the College.

PRESENTATION TO A MEDICAL MAN.—At a meeting of the members of the Hertford Town Cricket Club held at the Dimsdale Hotel on August 8th Mr. J. T. Tasker-Evans, M.D. Aberd., was the recipient of a gold matchbox, in appreciation of the successful services he had rendered in connexion with the new Pavilion Fund by which £150 were raised. Dr. Tasker-Evans is a vice-president of the club and a resident in the town.

# SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY.

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| LONDON UNIVERSITY .. | No. 1. | £40 per annum. | 2 years. | By first place with distinction in ANATOMY at July Intermediate M.B. Honours Examination. | M.B. Examination within 3 years. |
| | No. 2. | £40 per annum. | 2 years. | By first place with distinction in PHYSIOLOGY AND HISTOLOGY at July Intermediate M.B. Honours Examination. | Ditto |
| | No. 3. | £30 per annum. | 2 years. | By first place with distinction in ORGANIC CHEMISTRY at July Intermediate M.B. Honours Examination. | Ditto. |
| | No. 4. | £30 per annum. | 2 years. | By first place with distinction in MATERIA MEDICA and PHARMACEUTICAL CHEMISTRY at July Intermediate M.B. Honours Examination. | Ditto. |
| | University Scholarship in Medicine. | £50 per annum. | 2 years. | By first place with distinction in MEDICINE at M.B. Honours Examination. | |
| | University Scholarship in Obstetric Medicine. | £30 per annum. | 2 years. | By first place with distinction in OBSTETRIC MEDICINE at M.B. Honours Examination. | |
| | University Scholarship in Forensic Medicine. | £30 per annum. | 2 years. | By first place with distinction in FORENSIC MEDICINE at M.B. Honours Examination. | |
| | University Scholarship in Surgery. | £50 per annum. | 2 years. | By first place with distinction in B.S. Honours Examination. | |
| ST. BARTHOLOMEW'S MEDICAL SCHOOL | Entrance Scholarships. No. 1. | £75. | ... | Open Competitive Examination in not more than three nor fewer than two of CHEMISTRY, PHYSICS, ZOOLOGY, BOTANY, PHYSIOLOGY, ANATOMY. | Full Course at St. Bartholomew's Hospital. |
| | ,, No. 2. | £75. | ... | | Ditto. |
| | ,, No. 3 | £150. | ... | Open Competitive Examination in not fewer than three of the following :— CHEMISTRY, PHYSICS, BOTANY, ZOOLOGY, PHYSIOLOGY. | Ditto. |
| | Preliminary Scientific Exhibition. | £50. | ... | | Ditto. |
| | Jeaffreson Exhibition. | £20. | ... | Open Competitive Examination in LATIN, MATHEMATICS, and GREEK, FRENCH, or GERMAN. | Ditto. |
| | Shuter Scholarship. | £50. | .. | Competitive Examination among Cambridge Graduates in ANATOMY, PHYSIOLOGY, and MATERIA MEDICA. | Ditto. |
| | Junior Scholarships. | | | | |
| | ,, No. 1. | £30. | .. | Competitive Examination among Students in ANATOMY and BIOLOGY. | Study at St. Bartholomew's Hospital. |
| | ,, No. 2. | £20. | ... | Ditto. | Ditto. |
| | ,, No. 3. | £25. | ... | Competitive Examination in CHEMISTRY, PHYSICS, and HISTOLOGY. | Ditto. |
| | ,, No. 4. | £15. | ... | Ditto. | Ditto. |
| | Senior Scholarship. | £50. | ... | Competitive Examination among Students in ANATOMY, PHYSIOLOGY, and CHEMISTRY. | Ditto. |
| | Kirkes Scholarship. | £30 and Medal. | .. | Competitive Examination among Students in CLINICAL MEDICINE. | |
| | Brackenbury Scholarships. | | | | |
| | ,, No. 1. | £39. | .. | Competitive Examination among Students in MEDICINE. | Ditto. |
| | ,, No. 2. | £39. | ... | Competitive Examination among Students in SURGERY. | Ditto. |
| | Lawrence Scholarship. | £42 and Medal. | ... | Competitive Examination among Students in SURGERY, MEDICINE, and MIDWIFERY. | Ditto. |
| | Sir Geo. Burrows Prize. | £10 10s. | .. | Competitive Examination in PATHOLOGY among Students. | |
| | Skynner Prize. | £15. | ... | Competitive Examination in REGIONAL and MORBID ANATOMY among Students. | Ditto. |
| | Matthews Duncan Medal and Prize. | £20. | ... | Competitive Examination among Students in MIDWIFERY and GYNÆCOLOGY. | Ditto |
| | Research Studentship in Pathology. | £100. | ... | By Election, on the recommendation of the School Committee. | Research Work at St. Bartholomew's Hospital. |
| CHARING CROSS HOSPITAL AND COLLEGE | Entrance Scholarships, open to students at the commencement of curriculum. | | | | |
| | Livingstone. | 100 guineas. | .. | The Livingstone and Huxley Scholarships are awarded annually at the commencement of each Winter Session, after a competitive examination in the following groups of subjects : — (1) ENGLISH, including LANGUAGE, HISTORY, and GEOGRAPHY; (2) Any two of the following four languages —LATIN, GREEK, FRENCH, and GERMAN; (3) MATHEMATICS, | Open to all general students. |
| | ... | 60 ,, | ... | | Open to all general students. |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| CHARING-CROSS HOSPITAL AND COLLEGE—*continued.* | Huxley. | 55 guineas. | .... | Including ARITHMETIC, ALGEBRA, and GEOMETRY; and MECHANICS, including STATICS and DYNAMICS; (4) INORGANIC CHEMISTRY and EXPERIMENTAL PHYSICS, including ACOUSTICS, HEAT, MAGNETISM, ELECTRICITY, and OPTICS; and (5) ANIMAL and VEGETABLE BIOLOGY. No Candidate may offer himself for examination in more than three of the above groups of subjects, the selection of the groups being left entirely to the Candidate. | For sons of medical men. |
| | ... | 40 ,, | .... | | Open to all general students. |
| | ... | 30 ,, | .... | | For dental students. |
| | Epsom Scholarship. | Free education. | .... | .... | Epsom Foundation Scholars who have passed Preliminary Scientific M.B. Lond. Univ. |
| | Universities Scholarship (1) | 60 guineas. | .... | Examination in ANATOMY and PHYSIOLOGY, including HISTOLOGY. | Oxford Students who have passed first M.B. Exam. |
| | Universities Scholarship (2) | 60 ,, | .... | | Cambridge students who have passed second M.B. Exam. |
| | | | | | London students who have passed Intermediate Exam. in Med. who have not entered at any London Medical School. |
| | Llewellyn Scholarship. | £25. | .... | Awarded annually to the Student of not more than five years' standing, who, in the opinion of the School Committee, shall have distinguished himself the most at the Prize Examinations in the following subjects, viz.:—MEDICINE, SURGERY, MIDWIFERY, PATHOLOGY, THERAPEUTICS, FORENSIC MEDICINE, PUBLIC HEALTH, PSYCHOLOGICAL MEDICINE, OPHTHALMOLOGY, PRACTICAL MEDICINE, PRACTICAL SURGERY, PRACTICAL MIDWIFERY. | None. |
| | Golding Scholarship. | £10. | .... | Competitive Examination among Second-year General Students in ANATOMY and PHYSIOLOGY, CHEMISTRY, and BIOLOGY. | Students must have attended the Classes in each subject at this School. |
| ST. GEORGE'S HOSPITAL. | Entrance Scholarships. No. 1. | £150. | .... | Competitive Examination among First-year Students, being the sons of medical men, in LATIN, GREEK, FRENCH, GERMAN, MATHEMATICS, PHYSICS, CHEMISTRY, and BIOLOGY; three at option. | Previous entrance at St. George's School. |
| | ,, No. 2. | £85. | .... | Competitive Examination among Students being First M.B.'s of Oxford or Second M.B.'s of Cambridge, in ORGANIC CHEMISTRY, ANATOMY, PHYSIOLOGY, ZOOLOGY, and BOTANY; two at option. | Ditto. |
| | ,, No. 3. | £85. | .... | Ditto. | Ditto. |
| | ,, No. 4. | £85. | .... | Competitive Examination among Students of Provincial University Colleges of similar standing in the same subjects. | Ditto. |
| | ,, No. 5. | £50. | .... | Competitive Examination among Students in the same subjects as Entrance Scholarship No. 1. | To enter St. George's School. |
| | ,, No. 6. | £50. | .... | Ditto. | Ditto. |
| | Wm. Brown Exhibition. | £100 per annum. | 2 years. | Competitive Examination among Perpetual Pupils having registrable qualification in the PRACTICE OF MEDICINE, MIDWIFERY, and SURGERY. | Study at St. George's School. |
| | ,, | £40 ,, ,, | 3 years. | Competition among Third-year Students in the same subjects. | Ditto. |
| | Brackenbury Prize in Medicine. | Interest on £1103. | .... | Competitive Examination among Students of not more than five years' standing. | None. |
| | Brackenbury Prize in Surgery. | Interest on £1103. | .... | Competitive Examination among Students of not more than five years' standing. | None. |
| | Treasurer's Prize. | £10 10s. | .... | Proficiency in Clinical Examination of three Medical and three Surgical Cases, together with a written Examination in Medicine, Surgery, and Midwifery. | None. |
| | H. C. Johnson Memorial Prize. | £10 10s. | .... | Competitive Examination in PRACTICAL ANATOMY. | None. |
| | Pollock Prize. | Interest on £372. | .... | Competitive Examination in PHYSIOLOGY, PHYSIOLOGICAL CHEMISTRY, and HISTOLOGY. | None. |
| | Clarke Prize. | Interest on £209. | .... | Awarded for Clinical Reports and Commentaries. | None. |
| | Thompson Medal. | Interest on £185. | .... | | |
| | Brodie Prize. | Interest on £220. | .... | | |
| | Acland Prize. | £5. | .... | | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| ST. GEORGE'S HOSPITAL—*continued.* | Webb Prize. | Interest on £1000. | - - | Competitive Examination among Perpetual Pupils in BACTERIOLOGY. | None. |
| | General Proficiency Prizes. No. 1. | £10 10s. | - - | Competitive Examination in ELEMENTARY ANATOMY, BIOLOGY, CHEMISTRY, and PHYSICS. | None. |
| | ,, No. 2. | £10 10s. | .... | Competitive Examination in ANATOMY, PHYSIOLOGY (including HISTOLOGY), and PHYSIOLOGICAL CHEMISTRY. | None. |
| | ,, No. 3. | £10 10s. | .... | Competitive Examination in ORGANIC CHEMISTRY, ANATOMY, and PHYSIOLOGY, including HISTOLOGY and PHYSIOLOGICAL CHEMISTRY. | None. |
| | ,, No. 4. | £10 10s. | .... | Competitive Examination in MEDICINE, SURGERY, OBSTETRIC MEDICINE, and PATHOLOGY. | None. |
| GUY'S HOSPITAL - - - | Entrance Scholarships. No. 1. | £100. | .... | Open Competitive Examination among Candidates under twenty years of age in LATIN, GREEK, FRENCH, GERMAN, ARITHMETIC, EUCLID, and ALGEBRA. | Course at Guy's Hospital. |
| | ,, No. 2. | £50. | .... | Under twenty-five years of age, ditto. | Ditto. |
| | ,, No. 3. | £150. | .... | Open Competitive Examination among Candidates under twenty-five years of age in INORGANIC CHEMISTRY, GENERAL BIOLOGY, and EXPERIMENTAL PHYSICS. | Perpetual Course at Guy's Hospital |
| | ,, No. 4. | £60. | - - | Ditto. | Ditto. |
| | ,, No. 5. | £50. | .... | Competitive Examination among Candicates under twenty-five years of age who have completed the curriculum for, or passed, the Examinations in Anatomy and Physiology for a medical degree in any University of the United Kingdom, and have not entered as Students in any Metropolitan Medical School. | Ditto. |
| | Arthur Durham Prizes. | £15. | .... | Dissections done by Students of more than one year's standing. | |
| | ,, | £5. | .... | Dissections by First-year Students. | Ditto. |
| | Hilton Prize. | £5. | .... | Ditto. | |
| | Junior General Proficiency. | £20. | - - | Competitive Examination among Junior Students in ELEMENTARY ANATOMY, HISTOLOGY, and ANATOMY and PHYSIOLOGY. | None. |
| | ,, | £15. | - - | Ditto. | Ditto. |
| | ,, | £10. | - - | Ditto. | Ditto. |
| | Michael Harris Prize. | £10. | - - | Competitive Examination among Second-year Students in HUMAN ANATOMY. | Ditto. |
| | Sands Cox Scholarship. | £15 per annum. | 3 years. | Competitive Examination among Second-year Students in PHYSIOLOGY, HISTOLOGY, and PHYSIOLOGICAL CHEMISTRY. | Course at Guy's Hospital. |
| | Wooldridge Memorial Prize. | £10. | - - | Ditto. | |
| | Senior General Proficiency. | £20. | - - | Competitive Examination among Senior Students in MEDICINE, SURGERY, MIDWIFERY, DISEASES OF WOMEN, MEDICAL JURISPRUDENCE, THERAPEUTICS, PUBLIC HEALTH and MENTAL DISEASES. | Ditto. |
| | ,, | £15. | - - | Ditto. | Ditto. |
| | ,, | £10. | - - | Ditto. | Ditto. |
| | Golding-Bird Prize. | £20 and Medal. | - - | Competitive Examination among Senior Students in SANITARY SCIENCE. | Ditto. |
| | Beaney Prize. | £31 10s. | - - | Competitive Examination among Students in PATHOLOGY. | Ditto. |
| | Gull Studentship, Pathology. | £150 per annum. | 3 years. | Awarded without Competitive Examination to Students intending to conduct Research. | |
| | Beaney Scholarship, Therapeutics. | £31 10s. | 3 years. | Ditto. | |
| KING'S COLLEGE - - | Warneford Scholarships. No. 1. | £25 per annum. | 3 years. | Competitive Examination among Matriculated Medical Students in DIVINITY, ENGLISH HISTORY, LATIN, GREEK, FRENCH, GERMAN, and MATHEMATICS. | Perpetual Course at King's College. |
| | ,, No. 2. | £25 per annum. | 3 years. | Ditto. | Ditto. |
| | ,, Class II. | £25 per annum. | 2 years. | Competitive Examination among Matriculated Medical Students in the third year, residing in the College. | |
| | Sambrooke Exhibitions. No. 1. | £60. | - - | Open Competitive Examination in MATHEMATICS, ELEMENTARY PHYSICS, INORGANIC CHEMISTRY, BOTANY, and ZOOLOGY. | Course as Medical Student at King's College. |
| | ,, No. 2. | £40. | - - | Ditto. | Ditto. |
| | Rabbeth Scholarship. | £20. | - - | Competitive Examination among Matriculated Students in Science. | None. |
| | Science Exhibitions. No. 1. | £30 per annum. | 2 years. | Competitive Examination among Candidates under nineteen years of age in MATHEMATICS, MECHANICS, PHYSICS, &c., or alternative Subjects. | None. |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| KING'S COLLEGE—*continued.* | Science Exhibitions. No. 2. | £20 per annum. | 2 years. | Competitive Examination among Candidates under nineteen years of age in MATHEMATICS, MECHANICS, PHYSICS, &c., or alternation subjects. | None. |
| | Medical Entrance Scholarships. | | | | |
| | ,, No. 1. | £73 10s. | — — | Open Competitive Examination for Students who propose to take degree at any British University and have passed the Examination at that University in BIOLOGY, CHEMISTRY, and PHYSICS. | |
| | ,, No. 2 | £63. | — — | Ditto. | |
| | Medical Scholarships. No. 1. | £40 per annum. | 1 year. | Competitive Examination among Third- and Fourth-year Students. | |
| | ,, No. 2. | £30. | 1 year. | Competitive Examination among Second- and Third-year Students. | |
| | ,, No. 3. | £20. | 1 year. | Competitive Examination among First-year Medical Students. | |
| | ,, No. 4. | £20. | 1 year. | Ditto. | |
| | Sambrooke Registrarship. No. 1. | £50. | .... | Competitive Examination among Matriculated Medical Students who have filled certain appointments at hospitals. | |
| | ,, No. 2. | £50. | — — | Ditto. | |
| | Daniel Scholarship. | £20 per annum. | 2 years. | Open Competitive Examination among six months' Laboratory Students. | |
| | Carter Prize. | £15. | — — | Open Competitive Examination in Botany. | |
| | Tanner Prize. | £10. | — — | Competitive Examination in OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN. | None. |
| | Todd Prize. | £4 4s. and medal. | — — | Competitive Examination in Clinical Medicine. | |
| LONDON HOSPITAL — — | 1. Price Scholarships. | £120. | — — | Competitive Examination among Students in subjects of Preliminary Scientific M.B. Examination at University of London. | |
| | 2. Entrance Scholarships. | | | | |
| | ,, No. 1. | £60. | .... | Ditto. | |
| | ,, No. 2. | £35. | .... | Ditto. | |
| | 3. Epsom College Scholarship. | Free Education. | — — | .... | |
| | 4. Price Scholarships. | £60. | — — | HUMAN ANATOMY AND PHYSIOLOGY. | Study at Oxford or Cambridge. |
| | Buxton Scholarships. No. 1. | £30. | — — | Competitive Examination among Students in subjects of Preliminary Examination. | |
| | ,, No. 2. | £20. | — — | Ditto. | |
| | Scholarship. | £20. | — — | Competitive Examination in CLINICAL MEDICINE. | |
| | ,, | £20. | — — | Competitive Examination in CLINICAL SURGERY. | |
| | ,, | £20. | — — | Competitive Examination in CLINICAL OBSTETRICS. | |
| | Sutton Prize in Pathology. | £20. | — — | Competitive Examination in PATHOLOGY. | |
| | Duckworth Nelson Prize. | £10. | — — | PRACTICAL MEDICINE and SURGERY. | |
| | *Biennially:* Letheby Prizes. | £20 and £10. | — — | Competitive Examination in CHEMISTRY. | |
| | Scholarship. | £25. | — — | Competitive Examination in ANATOMY AND PHYSIOLOGY. | |
| | ,, | £20. | — — | Competitive Examination in ANATOMY and BIOLOGY. | |
| | Dressers' Prize. | | | | |
| | ,, No. 1. | £15. | — — | ZEAL, EFFICIENCY, and KNOWLEDGE OF MINOR SURGERY. | |
| | ,, No. 2. | £10. | — — | Ditto. | |
| | ,, No. 3. | £10. | — — | Ditto. | |
| | ,, No. 4. | £5. | — — | Ditto. | |
| | ,, No. 5. | £5. | — — | Ditto. | |
| | ,, No. 6. | £5. | — — | Ditto. | |
| | ,, No. 7. | £5. | .... | Ditto. | |
| | *Triennially:* Hutchinson Prize. | £35. | — — | For the best essay upon a subject in CLINICAL SURGERY. | |
| | Practical Anatomy Prizes. | £6. | — — | .... | |
| | | £4. | .... | .... | |
| | *Biennially:* Andrew Clark Prize. | £26. | .... | CLINICAL MEDICINE and PATHOLOGY | |
| | James Anderson Prizes. | £9. | — — | CLINICAL MEDICINE. | |
| ST. MARY'S HOSPITAL — | Natural Science Scholarship | £145. | — — | Competitive Examination. | |
| | ,, | £78 15s. | — — | Ditto. | |
| | ,, | £78 15s. | — — | Ditto. | |
| | ,, | £52 10s. | .... | Ditto. | |
| | University Scholarship. | £57 15s. | — — | Open to Students from Oxford or Cambridge by Competitive Examination in NATURAL SCIENCE. | |
| | ,, | £57 15s. | — — | | |
| | Epsom College Scholarship. | £145. | — — | By nomination. | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| ST. MARY'S HOSPITAL—*continued.* | Kerslake Scholarship in Pathology and Bacteriology. | £25. | 1 year. | Examination in PATHOLOGY and BACTERIOLOGY. | |
| | Gold Medal in Clinical Medicine. | £20. | — — | Given for an ESSAY ON SOME SPECIAL POINT IN CLINICAL MEDICINE. | |
| | General Proficiency Scholarship. No. 1. | £20 | 1 year. | Examination in ELEMENTARY ANATOMY, PHYSIOLOGY, BIOLOGY, and CHEMISTRY. | |
| | " No. 2. | £20. | 1 year. | ADVANCED ANATOMY, PHYSIOLOGY, and HISTOLOGY. | |
| | " No. 3. | £20. | 1 year. | MIDWIFERY, MATERIA MEDICA, PATHOLOGY, and FORENSIC MEDICINE. | |
| | " No. 4. | £20. | 1 year. | MEDICINE, SURGERY, HYGIENE, and MENTAL DISEASES. | |
| | Ophthalmology Prize. | £10 10s. | — — | Awarded twice in each year. | |
| | Dermatology Prize. | £5 5s. | — — | Ditto. | |
| | Meadows Prize in Obstetrics | £8. | — — | Awarded in alternate years for Proficiency in OBSTETRICS. | |
| | Clinical Medicine Prize. | £5 5s. | .... | Awarded annually for Reports of Clinical Cases by Students of Third and Fourth Years. | |
| | Clinical Surgery Prize. | £5 5s. | .... | | |
| | Winter Session Prizes (10 in number). | £3 3s. and £2 2s. each. | .... | Competitive Examination at the end of the Course of Lectures in each of the Subjects of the Medical Curriculum. | |
| | Summer Session Prizes (7 in number). | £3 3s. and £2 2s. each. | .... | Ditto. | |
| MIDDLESEX HOSPITAL — | Entrance Scholarship. No. 1. | £100. | .... | Open Competitive Examination. | Course at Middlesex Hospital. |
| | " No. 2. | £60. | .... | Ditto. | Ditto. |
| | " No. 3. | £60. | .... | Competitive Examination among Students from Oxford or Cambridge. (Subjects: ANATOMY and PHYSIOLOGY, including HISTOLOGY.) | |
| | Broderip Scholarship. | £126. | — — | To Students of Epsom College, on Nomination of Head Master. | |
| | No. 1. | £60. | — — | Competitive Examination among Senior Students in CLINICAL SUBJECTS. | |
| | " No. 2. | £40. | — — | Ditto. | |
| | Freeman Scholarship. | £30. | .... | Examination in OBSTETRICS and GYNÆCOLOGY. | |
| | Governor's Prize. | £21. | — — | Competitive Examination among Students during Sixth Year of Study. | |
| | Hetley Clinical Prize. | £25. | — — | Competitive Examination among the Students during Fifth Year of Study. | |
| | John Murray Gold Medal and Scholarship. | — — | Every third year. | Examination in MEDICINE, SURGERY, and OBSTETRICS. | |
| | Lyell Medal. | £5 5s. | — — | Examination in SURGICAL ANATOMY and PRACTICAL SURGERY. | |
| | Leopold Hudson Prize. | £11 11s. | .... | Examination in SURGICAL PATHOLOGY and BACTERIOLOGY. | |
| ST. THOMAS'S HOSPITAL | College Prizes. | | | | |
| SUMMER. | " No. 1. | £15. | — — | Competitive Examination among First-year Students. | |
| | " No. 2. | £10. | — — | Ditto. | |
| | " No. 3. | £15. | — — | Competitive Examination among Second-year Students. | |
| | " No. 4. | £10. | — — | Ditto. | |
| | Entrance Science Scholarship. No. 1. | £150 | — — | Competitive Examination in PHYSICS, CHEMISTRY, and either PHYSIOLOGY, BOTANY, or ZOOLOGY. | Perpetual Course. |
| | " No. 2. | £60. | — — | Ditto. | Ditto. |
| | " No. 3. | £50. | — — | Competitive Examination in ANATOMY, PHYSIOLOGY, CHEMISTRY (any two). | Perpetual Course from third year. |
| | Wm. Tite Scholarship. | £27 10s. | — — | Competitive Examination among First-year Students. | |
| | College Prizes. | | | | |
| | " No. 5. | £20. | — — | Ditto. | |
| | " No. 6. | £10. | .... | Ditto. | |
| WINTER. | Musgrove Scholarship, or | £38 10s. | 2 years. | Competitive Examination among Second-year Students. | |
| | Peacock Scholarship. | £38 10s. | 2 years. | Ditto. | |
| | College Prizes. | | | | |
| | " No. 7. | £20. | — — | Competitive Examination among Second-year Students. | |
| | " No. 8. | £10. | — — | Ditto. | |
| | " No. 9. | £10. | — — | Competitive Examination among Fifth-year Students. | |
| | " No. 10. | £10. | — — | Ditto. | |
| | " No. 11. | £10. | .... | Ditto. | |
| | " No. 12. | £10. | — — | Ditto. | |
| | " No. 13. | £10. | — — | Ditto. | |
| | " No. 14. | £10. | .... | Ditto. | |
| | " No. 15. | £10. | .... | Ditto. | |
| | Cheselden Medal. | — — | — — | Competitive Examination in SURGERY and ANATOMY. | |
| | Mead Medal. | — — | — — | Competitive Examination in MEDICINE and PATHOLOGY. | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| ST. THOMAS'S HOSPITAL—*continued.* | Bristowe Medal. | — | — | Competitive Examination in PATHOLOGY and MORBID ANATOMY. | |
| | Solly Medal and Prize. | .... | .... | SURGICAL REPORTS. | |
| | Treasurer's Gold Medal. | .... | — | General Proficiency. | |
| | Wainwright Prize. | .... | .... | Medicine. | |
| | Hadden Prize. | .... | .... | Pathology. | |
| | Beaney Scholarship. | £50 biennially. | — | For SURGERY and SURGICAL PATHOLOGY. | |
| | Sutton Sams Memorial Prize. | £5 biennially. | .... | Reports of Cases in OBSTETRIC MEDICINE. | |
| | Grainger Testimonial Prize. | £15 annually. | .... | For work in ANATOMY and PHYSIOLOGY. | |
| | The Salters' Company Research Fellowship. | £100 annually. | 3 years. | Promotion of Research — PHARMACOLOGY. | |
| UNIVERSITY COLLEGE, LONDON | Entrance Scholarships No. 1. (Bucknill Scholarship.) | £120. | — | Open Competitive Examination in CHEMISTRY, PHYSICS, BOTANY, and ZOOLOGY. | Perpetual Course at University College. |
| | ,, No. 2. | 55 gs. | .... | Ditto. | Ditto. |
| | ,, No. 3. | 55 gs. | .... | Ditto. | Ditto. |
| | ,, No. 4. | 70 gs. | .... | ANATOMY and PHYSIOLOGY. | Ditto. |
| | ,, No. 5. | 70 gs. | .... | Ditto. | Ditto. |
| | Atkinson Morley Scholarship. | £45 per annum. | 3 years. | Theory and Practice of Surgery. | |
| | Atchison Scholarship. | £55 per annum. | 2 years. | Competitive Examination among Medical Students. | |
| | Sharpey Physiological Scholarship. | £120. | — | Proficiency in Biological Science. | |
| | Filliter Exhibit'n. | £30. | 1 year. | Competitive Examination among Students in PATHOLOGICAL ANATOMY. | |
| | Cluff Mem. Prize. | £15. | — | Competitive Examination among Students in ANATOMY, PHYSIOLOGY, and CHEMISTRY. | |
| | Erichsen Prize. | £10 10s. | .... | Practical Surgery. | |
| | Morris Bursary. | £16. | 2 years. | .... | |
| WESTMINSTER HOSPITAL | Guthrie Entrance Scholarship. | £60 (total). | — | Open Competitive Examination among Candidates under twenty-five years of age in LATIN,* MATHEMATICS, EXPERIMENTAL PHYSICS, CHEMISTRY, and GREEK, FRENCH, or GERMAN. | For Students entering in the Winter Session. |
| | Entrance Scholarship. | £40 (total). | — | Ditto. | Ditto. |
| | Ditto. | £30. | .... | Ditto. | Ditto. |
| | Dental Scholarship. | £20 (total). | .... | Ditto, as above, save that Dental Students only can compete. | For Students entering in the Winter Session. |
| | Free Presentation. | .... | .... | Open to Pupils of the Epsom Medical College, obtained by recommendation. | |
| | Entrance Scholarship (Governors). | £40 (total). | — | Open Competition in CHEMISTRY and EXPERIMENTAL PHYSICS according to the Synopsis of the Conjoint Board. | For Students entering in the Summer Session. |
| | Natural Science. | £40. | .... | Ditto. | For Students entering in the Winter Session. In April and in September. |
| | Oxford and Cambridge Scholarship. | £40 (total). | — | Competitive Examination among Oxford and Cambridge Students in ANATOMY and PHYSIOLOGY. | |
| | Ditto. | £30. | .... | Ditto. | Ditto. |
| | Natural Science | £60. | .... | Competitive Examination in subjects of Preliminary Scientific of London University. | Ditto. |
| | Arts Scholarship (Entrance). | £50. | — | Competitive Examination as for the Guthrie Scholarship, except that the Latin Book is that of the London Matriculation of the preceding January. | For Students entering in the Summer Session. |
| | Ditto. | £50. | .... | Ditto. | Ditto. |
| | Treasurer's Prize. | £10 10s. | .... | Competitive Examination among First-year Students in ANATOMY, PHYSIOLOGY or BIOLOGY, and CHEMISTRY. | |
| | Sturges Prize in Clinical Medicine. | £10. | .... | Notes and commentaries on 6 cases. | |
| | Clinical Surgery. | £5. | .... | Ditto on 12 cases. | |
| | Chadwick Prize. | £21 in books or instruments. | — | Competitive Examination among Medical Students in MEDICINE and SURGERY, including PATHOLOGY and APPLIED ANATOMY and PHYSIOLOGY. | |
| | Bird Medal and Prize. | £14 in medal, books, or instruments. | .... | Competitive Examination in MIDWIFERY and DISEASES of WOMEN, MEDICINE, and PATHOLOGY among Students who have completed their Fourth Winter Session at the Westminster Hospital School of Medicine. | |

* The Latin Book is that of the Matriculation, University of London, in the preceding June.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN | Entrance Scholarship. | £30. | ... | Competitive Examination in ENGLISH, LATIN, ARITHMETIC, EUCLID, and ALGEBRA. | |
| | Stuart Mill Scholarship. | £30. | 4 years. | Ditto. | Candidates must be willing to enter into a legal arrangement to practise in India under the Countess of Dufferin's Fund. |
| | St. Dunstan's Scholarship. | £80. | 3 years, extendible to 5 years. | Ditto. | Candidates must be (1) not more than 20 years of age on June 1st preceding the examination; (2) resident in the Metropolitan Police District area; (3) Matriculated Students of the University of London; (4) in the opinion of the Governors in need of such an exhibition for the prosecution of their medical studies. |
| | Bostock Scholarship. | £60. | 2 or 4 years. | Given on results of Preliminary Scientific Examination of the University of London. | |
| | Singleton Scholarship. | £90. | ... | Given on the results of the Preliminary Scientific Examination of the University of London in July, 1901 | ..... |
| | Mabel Webb Research Scholarship. | £30. | 2 years. | For Research Work in PHYSIOLOGY, CHEMISTRY, or PATHOLOGY. | .... |
| | Fanny Butler Scholarship. | £14 10s. | 4 years. | Competitive Examination in ENGLISH, LATIN, ARITHMETIC, EUCLID, and ALGEBRA. | Candidates must be willing to work in connexion with the Church of England Zenana Missionary Society. |
| | John Byron Bursary. | £20. | 2 to 4 years. | ... | Offered to students already in the school requiring assistance for the prosecution of their medical studies. |
| | Two Mackay Prizes. | £20 each. | ... | Given to the two Students gaining the highest number of marks in the School Examinations during the first two years of Medical Study. | |
| | Helen Prideaux Scholarship. | £50. | ... | Given to Graduates of not more than 3 years' standing for Original Work. | |
| OXFORD UNIVERSITY ... | Burdett-Coutts Scholarships. | £80 per annum. | 2 years. | Competitive Examination. | ... |
| | Radcliffe Trav. Fellowship. | £200 ,, ,, | 3 years. | Ditto. | Foreign Travel for purpose of Medical Study. |
| | Rolleston Prize. | £40 ,, ,, | .... | Original Research. | |
| UNIVERSITY OF DURHAM | Four Scholarships. | £25 a year each. | 4 years. | Examination in GOSPEL OF ST. LUKE in GREEK, LATIN, ARITHMETIC, ALGEBRA, EUCLID, and ENGLISH HISTORY. | Students pursuing their medical studies and not of a sufficient standing to proceed to a Degree in Medicine. |
| *College of Medicine* ... ... | Dickinson Scholarship. | Interest on £400 and Gold Medal. | ... | Examination in MEDICINE, SURGERY, MIDWIFERY, and PATHOLOGY. | Full Students of the College of Medicine who have passed the intermediate examination of any of the Licensing Bodies named in Schedule A of the Medical Act, 1858. |
| | Tulloch Scholarship. | Interest on £400 | .... | Examination in ANATOMY, PHYSIOLOGY, and CHEMISTRY. | No Student is eligible who commenced his medical curriculum more than two academical years before the date of examination. |
| | Charlton Memorial Scholarship. | Interest on £700 | ... | ... | Open to full Students of the College entered for the class on the Principles and Practice of Medicine. |

SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued*.

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| UNIVERSITY OF DURHAM *College of Medicine—continued.* | Gibb Scholarship. | Interest on £500 | ... | Awarded annually as a Scholarship in PATHOLOGY to full Student who passes the best examination in that subject. | No Student eligible after completion of his curriculum. |
| | Luke Armstrong Memorial Scholarship. | Interest on £680 | ... | Original Essay on some subject in COMPARATIVE PATHOLOGY. | Open to all Graduates in Medicine or Hygiene and candidates for these degrees who have spent six months at the University, and whose age does not exceed thirty years. |
| | Stephen Scott Scholarship. | Interest on £1000. | -- | Original essay on any Surgical subject. | Any Graduate in Medicine or Surgery of the University or any Student of the College of Medicine. Student's age must not exceed 30 years. |
| | Heath Scholarship. | Interest on £4000. | -- | Original essay on THE CEREBRO-SPINAL NERVOUS SYSTEM: ITS INJURIES AND SURGICAL DISEASES, THEIR PATHOLOGY, DIAGNOSIS, AND TREATMENT. | All Graduates in Medicine or Surgery of the University are eligible. |
| *Royal Infirmary* ... .. .. | Goyder Memorial Scholarship. | Interest on £325. | Annually. | Student who most distinguishes himself in CLINICAL MEDICINE AND CLINICAL SURGERY at the Royal Infirmary. | |
| UNIVERSITY OF BIRMINGHAM. | Ingleby Scholarships (1 or more). | £10 to £15. | 1 year. | .... | Candidates must have spent first two years of curriculum at the University. |
| | Sydenham Scholarship | £14 per annum. | 3 years. | Award of Council to orphan sons of Medical Practitioners. | |
| | Sands Cox Scholarship. | £14 per annum. | 3 years. | Competitive Examination among sons of Medical Practitioners under eighteen years of age in ARTS SUBJECTS. | |
| | Queen's Scholarship. | £14 per annum. | 3 years. | Open Competitive Examination in ELEMENTARY SCIENCE, with a Modern Language. | |
| | Dental Scholarship. | £12 10s. | 3 years. | Open Competitive Examination in subjects learned during apprenticeship. | |
| VICTORIA UNIVERSITY ... | Gilchrist Scholarship. | £50. | 3 years. | Awarded annually to the candidate who shall stand highest at the June preliminary examination of the Victoria University provided that he pass in the first division. | Candidates must be over 18 years of age on July 1st in the year of competition. |
| | University Scholarship in Medicine. | £25. | 1 year. | Awarded annually on the results of the second examination for the degrees of M.B. and Ch.B. | |
| | University Fellowship in Medicine. | £100. | 1 year. | Awarded annually for excellence and promise in one or more of the subjects of the Second or Final M.B. Examinations. | For the encouragement of Study and Research. |
| OWENS COLLEGE, MANCHESTER ... ... ... ... | General Entrance Scholarships. | ... | ... | ... | Open to candidates above 16 and under 20 years of age. |
| | Rogers. | £40. | 2 years. | Subjects: GREEK, LATIN TRANSLATIONS AT SIGHT, and PROSE COMPOSITION. | |
| | Seaton. | £40. | 2 years. | Subjects: GREEK, LATIN TRANSLATIONS AT SIGHT, and PROSE COMPOSITION. | |
| | Dalton. | £40. | 2 years. | Subjects: EUCLID, ALGEBRA, TRIGONOMETRY, GEOMETRY, and CONIC SECTIONS. | |
| | Cartwright.* | £35. | 3 years. | Ditto. | |
| | Hulme. | £35. | 3 years. | Subjects: ENGLISH LANGUAGE and LITERATURE, HISTORY, GEOGRAPHY, and LATIN, GREEK, FRENCH, or GERMAN (any two subjects). | |
| | James Gaskill. | £40. | 2 years. | MATHEMATICS, MECHANICS, and CHEMISTRY. | |
| | Bleackley | £20. | 3 years. | Any of the papers set for the other Entrance Scholarships. A paper in Natural History will also be set if required. | |
| | Dora Muir.† | £25. | 3 years. | Ditto. | |
| | Manchester Grammar School.* | £18. | 3 years. | MATHEMATICS, ENGLISH ESSAY with CLASSICS and PHYSICAL SCIENCE in alternate years. | |
| | Kay-Shuttleworth.* | £30. | 3 years. | Subjects as in James Gaskill Scholarships. | Pupils of Sedbergh, Giggleswick, or Burnley Grammar School. |

* Open to men candidates only.

† Open to women candidates only.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued.*

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| **OWENS COLLEGE, MANCHESTER—*continued.*** | Theodores Exhibition. | £15. | 1 year. | Subjects: FRENCH and GERMAN. | Successful candidates are required to enter for a regular University course. |
| | Robert Platt Physiological Scholarship. | £50. | 2 years. | Subjects: PHYSIOLOGY and COMPARATIVE ANATOMY. | Open to Candidates whether or not previously students of the College. |
| | Dauntesey Medical Scholarships (two). | £35 each. | 1 year. | Subjects: ZOOLOGY, BOTANY, and CHEMISTRY. | These Scholarships are open to all students preparing for a Medical Course who shall not have attended Lectures or Laboratory Courses on Human Anatomy or Physiology, or a purely Medical or Surgical Course in the Owens College or any other Medical School in the United Kingdom. Candidates must not be more than 25 years of age on October 1st of the year of competition. Scholars must immediately on election enter for a full course of medical studies. |
| | Robert Platt Exhibitions (two). | £15 each. | ... | ... | First and second year students in Physiology. |
| | Sidney Renshaw Exhibition. | £15. | .... | ... | Second year students in Physiology. |
| | Turner Scholarship. | £20. | ... | Subjects: MEDICINE, PATHOLOGY (written and practical), OBSTETRICS, PRACTICAL SURGERY, OPHTHALMOLOGY, FORENSIC MEDICINE, and PUBLIC HEALTH. | Students who have completed a full course of medical study in the College are eligible only. |
| | John Henry Agnew Scholarship. | £30. | ... | The Scholarship is awarded on the results of an Examination, partly written and partly clinical, on DISEASES OF CHILDREN, MEDICAL AND SURGICAL. | Open for competition annually to all students in the Medical Department who have pursued a regular course of medical study in the College extending over a period of not less than 4 years or more than 6, and who have attended the course of lectures on Diseases of Children. |
| | Dumville Surgical Prize. | £15. | ... | Subjects: SYSTEMATIC, PRACTICAL, and OPERATIVE SURGERY, SURGICAL ANATOMY, and SURGICAL PATHOLOGY. | |
| **BRISTOL ROYAL INFIRMARY AND BRISTOL GENERAL HOSPITAL.** | University College Bristol Entrance Scholarship. | £50. | .... | Competitive Examination in Subjects of GENERAL EDUCATION. | |
| | Lady Haberfield Entrance Scholarship. | Interest of £1000. | ... | Ditto. | |
| | Tibbitts Surgical Prize. | £9 9s. | ... | Proficiency in PRACTICAL SURGERY. | Open to Perpetual Students of Faculty of Medicine, University College, Bristol. |
| | Martyn Memorial Pathological Prizes. | Two annually, of £10 each. | .... | Competitive Examination in PATHOLOGY and MORBID ANATOMY. | |
| | A Gold and a Silver Medal. | ... | ... | Given by the Committees of the two Institutions to most distinguished Students of Fifth Year. | |
| *Bristol Royal Infirmary* .. | Suple Medical Prize. | Gold Medal value £5 5s. and £7 7s. in money. | ... | Competitive Examination in MEDICINE to Students of Fourth and Fifth Years. | Restricted to Perpetual Students who have done the necessary qualifying work at the Bristol Royal Infirmary. |
| | Suple Surgical Prize. | Gold Medal value £5 5s. and £7 7s. in money. | .... | Competitive Examination in SURGERY of Students of Third and Fourth Years. | |

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued*.

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| BRISTOL ROYAL INFIRMARY AND BRISTOL GENERAL HOSPITAL—*Bristol Royal Infirmary—continued.* | Clark Prize. | £11 11s. | — | Class Work of Third-year Students. | Restricted to Perpetual Students who have done the necessary qualifying work at the Bristol Royal Infirmary. |
| | Crosby Leonard Prize. | £7 7s. | — | Examination in CLINICAL SURGERY. | |
| | Augustin Prichard Prize. | £7 7s. | — | Examination in SURGICAL ANATOMY. | |
| *Bristol General Hospital* ... | Sanders Scholarship. | £22 10s. | .... | Competitive Examination in MEDICINE, SURGERY, and MIDWIFERY of Fourth-year Students. | Restricted to Perpetual Students who have done the necessary qualifying work at the Bristol General Hospital. |
| | Clarke Scholarship. | £15. | .... | Competitive Examination in SURGERY among Students of Fourth Year. | |
| | Marshall Prize. | £9. | — | To the best Surgical Dresser of the year.. | |
| LEEDS SCHOOL OF MEDICINE (YORKSHIRE COLLEGE). | Entrance Scholarship. | £67 4s. | .... | Competitive Examination among Medical Students who have passed Preliminary Scientific Examination at London or Victoria University. | Complete Course of Lectures and Practical Classes at Leeds School. |
| | Infirmary Scholarship. | £42. | — | Competitive Examination in ARTS among Students who have passed one of the Preliminary Examinations. | Complete Course of Hospital Practice and Clinical Lectures at Leeds Infirmary. |
| | Hardwick Prize. | £10. | — | Competitive Examination among Clinical Clerk Students of two years' standing in CLINICAL MEDICINE. | |
| | McGill Prize. | £10. | — | Competitive Examination among advanced Surgical Students in CLINICAL SURGERY. | |
| | Thorp Prizes. | £10 and £5. | .... | Examinations in Forensic Medicine and Hygiene. | |
| | Thorp Prize Essay. | £15. | — | Essay or research on some subject connected with FORENSIC MEDICINE, TOXICOLOGY, or PUBLIC HEALTH. | Every three years to former student of the Leeds School. |
| | Scattergood Prize. | — | .... | Examination in MIDWIFERY. | |
| UNIVERSITY COLLEGE, LIVERPOOL. | Robert Gee Entrance Scholarships (four annually). | £25 each. | 1 year. | Special College Scholarship Examination held in May. | First M.B. Course. |
| | Holt Fellowships (Physiology and Pathology). | £100 each. | 1 year. | Vote of Faculty to Student after graduation. | Teaching and Original Research. |
| | Gee Fellowship (Anatomy). | £100. | 1 year. | Ditto. | Teaching and Research. |
| | Alexander Fellowship (Pathology). | £100. | 1 year. | Ditto. | Research in Pathology. |
| | Johnston Colonial Fellowship (Pathology and Bacteriology). | £100. | 1 year. | Ditto. | Ditto. |
| | Lyon Jones Scholarship. No. 1. | £21 per annum. | 2 years. | Competitive Examination among Junior Students in 1st M.B. SUBJECTS. | Perpetual Course at Victoria University. |
| | ,, No. 2. | £21. | — | Competitive Examination among Senior Students in ANATOMY, PHYSIOLOGY, and THERAPEUTICS. | |
| | Derby Exhibition. | £15. | — | Competitive Examination among Fourth- or Fifth-year Students in CLINICAL SUBJECTS. | |
| EDINBURGH UNIVERSITY | *Sibbald Bursaries (1 or 2 annually). | Each £30 per annum. | 3 years. | Competitive Examination in Preliminary Subjects among entrants. | Continued Study. |
| | *Heriot Bursaries (7 for men and 1 for women annually). | Each £30 per annum. | 3 years. | Ditto. | |
| | *Thomson Bursaries (2 annually). | Each £25 per annum. | 4 years. | Distinction in Medical Preliminary Examination. | Ditto. |
| | *Grierson Bursary. ,, No. 1. | £20. | 1 year. | Ditto. | Ditto. |
| | *Crichton Bursaries (2 or 3 annually). | Each £50 per annum. | 4 years. | Distinction in Medical Preliminary Examination, with extra subjects. | Born in Scotland. |
| | *Mackie Bursary. ,, No. 1. | £30 per annum. | 2 years. | — | Pecuniary circumstances requiring assistance, &c. |
| | *Junior J. A. Carlyle Bursary. | £28. | 1 year. | Distinction in Class Examinations in ANATOMY and CHEMISTRY. | |
| | *Coldstream Memorial Scholarship. | £25 per annum. | 5 years. | — | Intention to become Medical Missionary, &c. |

* For Students entering on or in their First Year.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued*.

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| EDINBURGH UNIVERSITY —*continued*. | * Vans Dunlop Scholarship. | | | | |
| | ,, No. 1. | £100 per annum. | 3 years. | First place in MEDICAL PRELIMINARY EXAMINATION. | |
| | ,, No. 2. | £100 per annum. | 3 years. | Competitive Examination in CHEMISTRY, ANATOMY, and PHYSICS. | Continued study. |
| | ,, No. 3. | £100 per annum. | 3 years. | Ditto in BOTANY and ZOOLOGY | Ditto. |
| | * Thomson Scholarsh p. | £40 per annum. | 4 years. | Competitive Examinations in BOTANY, ZOOLOGY, and MECHANICS. | |
| | † Mackie Bursary. ,, No. 2. | £30 per annum. | 2 years. | .... | Pecuniary circumstances requiring assistance, &c. |
| | † Grierson Bursary. ,, No. 2. | £20. | 1 year. | Competitive Examination in CHEMISTRY, BOTANY, ZOOLOGY, and PHYSICS. | |
| | † Senior J. A. Carlyle Bursary. | £28. | 1 year. | Distinction in Class Examinations in ANATOMY and PHYSIOLOGY. | |
| | † Sibbald Scholarship. | £40 per annum. | 3 years. | Competitive Examination in CHEMISTRY, BOTANY, ZOOLOGY, and PHYSICS. | Continued study. |
| | † Vans Dunlop Scholarship. ,, No. 4. | £100 per annum. | 3 years. | Competitive Examination in PHYSIOLOGY and SURGERY. | Ditto. |
| | † Neil Arnott Prize. | £37 10s. | — — | Distinction in Natural Philosophy in the M.A. Examination. | |
| | ‡ Grierson Bursary. ,, No. 3. | £20. | 1 year. | Competitive Examination in ANATOMY and PHYSIOLOGY. | |
| | § Syme Surgical Fellowship. | £100 per annum. | 2 years. | Competitive Thesis by M.B. of not more than three years' standing. | |
| | § Goodsir Memorial Fellowship. | £100 per annum. | 2 years. | Competitive Essay by M.B., &c., of not more than three years' standing. | |
| | § Leckie Mactier Fellowship. | £80 per annum. | 3 years. | Competitive Examination among M.B.'s of not more than three years' standing. | |
| | § Freeland Barbour Fellowship. | £100. | 1 year. | Highest Marks in ANATOMY, PHYSIOLOGY, and PATHOLOGY in Professional Examinations. | One year's research in Midwifery. |
| | § Allan Fellowship. | About £40. | 1 year. | Competitive Examination in CLINICAL MEDICINE and CLINICAL SURGERY. | |
| | § Vans Dunlop Scholarship. ,, No. 5. | £100 per annum. | 3 years. | Competitive Examination in ANATOMY and PHYSIOLOGY. | Continued study and research. |
| | ,, No. 6. | £100 per annum. | 3 years. | Do. in MATERIA MEDICA (including PHARMACOLOGY). | Ditto. |
| | ,, No. 7. | £100 per annum. | 3 years. | Do. in PATHOLOGY and MEDICAL JURISPRUDENCE and PUBLIC HEALTH. | Ditto. |
| | § Murchison Memorial Scholarship. | Interest on £1000. | 1 year. | Competitive Examination in CLINICAL MEDICINE. | |
| | § Stark Scholarship in Clinical Medicine. | £112. | 1 year. | Competitive Examination in CLINICAL MEDICINE. | Research in Clinical Medicine. |
| | § Buchanan Scholarship. | £40. | 1 year. | Competitive Examination and Class Work in MIDWIFERY and GYNÆCOLOGY. | Work in Gynæcological Ward, &c. |
| | § James Scott Scholarship. | £32 10s. | 1 year. | Competitive Examination and Class Work in MIDWIFERY. | Work in Maternity. |
| | § Ettles Scholarship | £31. | 1 year. | Most distinguished M.B., Ch.B. of year. | |
| | § Crichton Research Scholarships in Anatomy, Physiology, Materia Medica, and Pathology. | £100 each per annum. | 1, 2, or 3 years. | Competitive Examination for Graduates of the University. | Continued Research. |
| | § Mouat Scholarship. | £55. | 1 year. | Class and Degree Examinations in PRACTICE OF PHYSIC (MEDICINE). | Continued study in Medicine. |
| | § Grierson Bursary. ,, No. 4. | £10. | 1 year. | Competitive Examination in MATERIA MEDICA. | |
| | ,, No. 5. | £10. | 1 year. | Competitive Examination in PATHOLOGY. | |
| | § M'Cosh Graduate's Bursary and M'Cosh Medical Bursary (for Research). | Income of £5500. | 1 year. | Distinction in Professional Subjects, and sufficient knowledge of FOREIGN LANGUAGES. | Research in Medical Schools of Europe. |

* For Students entering on or in their First Year. † For Students entering on or in their Second Year.
‡ For Students entering on their Third Year.
§ For Students entering on or in their Fourth or Fifth Year, or for Graduates.

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued*.

| INSTITUTION | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| EDINBURGH UNIVERSITY —*continued.* | * Gunning Victoria Jubilee Prizes (2 awarded annually). | Each £50. | — | Thesis or Original Research in ANATOMY, PHYSIOLOGY, ZOOLOGY, BOTANY, CHEMISTRY, MATERIA MEDICA, SURGERY, PRACTICE OF PHYSIC, PATHOLOGY, OBSTETRICS, and MEDICAL JURISPRUDENCE and PUBLIC HEALTH, respectively. | |
| | * Theses Gold Medals. | .... | .... | Candidates for M.D. who present Theses of high merit. | |
| | * Wightman Prize. | £12. | — | Competitive Reports on Cases by Clinical Students. | |
| | * Beaney Prize. | £32 10s. | — | Highest Marks in ANATOMY, SURGERY, and CLINICAL SURGERY, in M.B. and Ch.B. Examinations. | |
| | * Ellis Prize. | £28 per annum. | ... | Essay on ANIMAL OR VEGETABLE PHYSIOLOGY. | |
| | * Cameron Prize. | Annual Proceeds of £2000. | .... | Most valuable addition to PRACTICAL THERAPEUTICS during preceding 5 years. | |
| | * Milner Fothergill Gold Medal. | About £20. | — | Essay on PHARMACOLOGICAL or THERAPEUTIC SUBJECT. | |
| | † Mackay Smith Scholarship in Chemistry. | £25 per annum. | 2 years. | Competitive Examination in CHEMISTRY among University Students. | Continued study of Chemistry. |
| | † Houldsworth Scholarship. | £40. | 1 year. | Competitive Examination in MATERIA MEDICA among University Students or Graduates. | Research in Pharmacology. |
| | † Mackenzie Bursaries (2 annually). | £20. | — | Industry and Skill in PRACTICAL ANATOMY. | |
| | † Pattison Prize. | About £11 7s. 6d. | .... | Competitive Reports on CLINICAL SURGERY CASES. | |
| | † Dobbie Smith Gold Medal. | ... | .... | Essay on BOTANICAL SUBJECT. | |
| | † Anderson Henry Prize. | Proceeds of £300 accum. for 3 years. | .... | Ditto. | |
| GLASGOW UNIVERSITY—QUEEN MARGARET COLLEGE ... ... ... ... ... | Mackintosh Mental Science Bursary. | £30. | 1 year. | .... | Open for competition to students of medicine of either sex who have attended the lectures on Insanity. |
| | Dr. Thos. Gibson Bursary. | £32. | 4 years. | Vacant 1900. Competition by Students entering on their second winter session. | Open to medical students preparing to be missionaries in connexion with the Church of Scotland. |
| | Arthur Bursary. | £20. | 3 years. | Competition by Students of one year's standing in the subjects of the First Professional Examination. Next vacancy 1901. | Restricted to women students only. |
| | Logan Bursary. | £16. | 4 years. | Appointment by the Senate of Glasgow University. Next vacancy 1901. | Open to medical students of either sex. |
| | Armagh Bursary in Medicine. | £45. | 3 years. | Competition by Students who are presenting themselves for the Final Examination for the degree of M.A. with Honours in Mental Philosophy, in 1900. | Open to students of either sex who have taken the course of study for graduation in Arts and intend to study Medicine. |
| | Two Taylor Bursaries. | £7. | 4 years. | Appointment by the Senate. Next vacancy 1901. | Open to students of either sex in any faculty. |
| | Two Dumfriesshire Society Bursaries. | £15. | 4 years. | Appointment by the Dumfriesshire Society. | Open to First- and Second-year's Students of either sex in any faculty. |
| | Buchanan Society Bursaries. | £35. | 3 years. | Vacant 1900. Competition by students entering on the University Course. | Open to students of either sex of the names of BUCHANAN, MCMILLAN, MCAUSLAN, MCWATTIE, and RISK. |

* For Students entering on or in their Fourth or Fifth Year, or for Graduates.
† For Students of any year (or standing of candidates not stated).

## SCHOLARSHIPS GIVEN IN AID OF MEDICAL STUDY—*continued*.

| INSTITUTION. | TITLE OF SCHOLARSHIP, &c. | ANNUAL OR TOTAL VALUE. | HOW LONG TENABLE. | HOW OBTAINABLE. | CONDITIONS ATTACHED TO TENURE. |
|---|---|---|---|---|---|
| **QUEEN'S COLLEGE, BELFAST** ... ... ... ... | Ten Junior Scholarships for Matriculated Students, two for each of the five years' curriculum. | £20 each. | 1 year. | Examination at the commencement of session. | Open to matriculated Medical Students of either sex. |
| **ROYAL COLLEGE OF SURGEONS IN IRELAND, SCHOOLS OF SURGERY** | Class Prizes.* | £1 and £3. | .... | Proficiency in Class Examination. | |
| | Carmichael Scholarship. | £15. | .... | Examination in ANATOMY, PHYSIOLOGY, HISTOLOGY, CHEMISTRY, MATERIA MEDICA, and PHARMACY. | Open to students of the third year. |
| | Mayne Scholarship. | £15. | .... | SURGERY, MEDICINE, JURISPRUDENCE, MIDWIFERY, and DISEASES OF WOMEN. | Open to students of third and fourth year. |
| | Barker Bequest | £21. | .... | For best DISSECTION. | Open to all medical students. |
| **ROYAL UNIVERSITY OF IRELAND** ... ... ... ... | Travelling Medical Scholarship. | £100. | .... | The subjects are in rotation: (1) ANATOMY AND HISTOLOGY; and (2) PHYSIOLOGY AND PATHOLOGY. | Those who have passed the Medical Degrees Examination either in the year of the scholarship examination or in the year immediately preceding are alone eligible. |
| | Dr. Henry Hutchinson, Stewart Medical Scholarships. | | | | |
| | ,, No. 1. | £10. | 3 years. | Competition in the subjects of the second examination in MEDICINE. | Candidates must present themselves after the lapse of not more than one medical year from the time of passing the first examination in medicine. |
| | ,, No. 2. | £50. | 3 years. | Subjects include PSYCHOLOGICAL MEDICINE, DISEASES OF THE NERVOUS SYSTEM, and ANATOMY, PSYCHOLOGY and PATHOLOGY OF BRAIN, CORD, AND NERVES. | Competition among medical graduates of not more than 2 years' standing for proficiency in the knowledge of Mental Diseases. Fee £2. |
| | Medical Studentship. | £200. | 2 years. | PATHOLOGY and BACTERIOLOGY. | Open to Graduates in Medicine of the University. Fee £2. |
| | Exhibition at first Examination in Medicine. | | | | |
| | ,, No. 1. | £20. | .... | .... | |
| | ,, No. 2 | £20. | .... | .... | |
| | ,, No. 3. | £10. | .... | .... | |
| | ,, No. 4 | £10. | .... | .... | |
| | Exhibition at second Examination in Medicine. | | | | |
| | ,, No 1. | £25. | .... | .... | |
| | ,, No. 2. | £25. | .... | .... | |
| | ,, No. 3. | £15. | .... | .... | |
| | ,, No. 4. | £15. | .... | .... | |
| | Exhibition at third Examination in Medicine. | | | | |
| | ,, No. 1. | £30. | .... | .... | |
| | ,, No. 2. | £30. | .... | .... | |
| | ,, No. 3 | £20. | .... | .... | |
| | ,, No. 4. | £20. | .... | .... | |
| | M.B., B Ch., and B A.O. Examinations. | | | | |
| | ,, No. 1. | £40. | .... | .... | |
| | ,, No. 2. | £40. | .... | .... | |
| | ,, No. 3. | £25. | .... | .... | |
| | ,, No. 4. | £25. | .... | .... | |
| **QUEEN'S COLLEGE, GALWAY** ... ... ... ... | Eight Junior Scholarships. | £25 each and half fees. | 1 year. | Competitive Examination at the commencement of session. | Students of either sex must be of the standing of 1st year, and may be of any recognised school of medicine. |

* Given in each class at termination of each course of lectures.

NOTE.—*St. Andrews University.*—For Scholarships, &c., see page 657.

# Annotations.

"Ne quid nimis."

## THE CENTENARY OF THE OWENS COLLEGE.

THE Owens College was opened in 1851, so that its jubilee will coincide with the first year of the coming century. It was founded, as everyone knows, by Mr. John Owens, a Manchester merchant, but owes almost as much to the munificence of his friend Mr. George Faulkner, also a business man of Manchester. The former was a Liberal or Radical in politics and a Nonconformist, while the latter was a Churchman and a Tory, and this coöperation was happily a foretaste of the interest and help given to the College from its earliest days by men of very various political and religious views who were desirous for "university teaching and university work of the highest kind to form part of the city life." The time is fitting therefore for an authoritative account to be given of the College, independent of the fact that there was a demand for such information for the Educational Exhibition in London and for the Paris Exhibition. This want has been very satisfactorily supplied in a volume entitled, "A Brief History of the College and Description of its various Departments," edited by P. J. Hartog, B.Sc., and published by J. E. Cornish, Manchester. It is divided into 15 sections dealing with the history of the College, its government and administration, its relation to the Victoria University, its several departments of arts, science, law, and last, though not least, medicine. Like many other great institutions, the College in its early days passed through a period of non-appreciation and adversity, perhaps because Manchester as a community had not become alive to the importance and value of local university teaching and influence. The College opened with 62 students, but the number fell till in 1856–9 there were only 40, and it was said to be a "mortifying failure." Now there are over 1000, a number which has been nearly reached for ten years past. At first its endowment was rather less than £90,000, but now its capital account is very nearly ten times £90,000, and more than £650,000 of this sum have been added during the last 30 years. In 1872, when the College was reconstituted, the annual expenditure was under £10,000, it is now over £40,000. Several years ago the College took over the Manchester Museum which, though of interest and value, had fallen into a state of more or less dilapidation. This collection is rapidly becoming richer in its various departments, and in that of geology is acknowledged to be of special value to those practically interested in the mining resources of a wide district. But though interesting to many of the students of the College it is of far greater service to the general public and has a claim for more municipal support than it has so far received. Its proper income has to be supplemented by about £1400 a year drawn from the educational revenue of the College to maintain its efficiency. In 1894 a costly but absolutely needed extension of the medical department of the College was made and growth in one direction or another is constantly going on, and if the College is to continue equal to its ever-growing work must go on. This being so it necessarily follows that the munificence of the citizens is always welcomed and, indeed, craved for, and it is satisfactory to know that such munificence can scarcely be devoted to an object which will give a better return to the community. Owens College is, of course, the premier college of Victoria University, a group comprising colleges at Liverpool and Leeds also, but the seat of the University is by charter fixed at Manchester, where all University meetings must be held. Mr. Hartog's volume gives accounts, varying a good deal in fulness, of the various departments of study, those of the older subjects, as classics and mathematics, being more briefly treated than the more modern ones of engineering, education, physiology, and pathology. A sketch is also given of the original work emanating from the College during the last 30 years and the record is one of which no educational institution need be ashamed. Portraits are added of some of the benefactors of the College. "From its earliest days down to the present time the College has never wanted for enthusiastic and unselfish service," and invaluable help has been given by many who have avoided public recognition.

## SUPPOSED PLAGUE IN GLASGOW.

WE regret to state that several cases believed on good grounds to be plague have occurred in Glasgow. The first patient was a child living in Thistle-street, a thoroughfare on the south side of the river Clyde. The illness quickly proved fatal, and in the course of three or four days both of the parents and a third person living in the same house were attacked. All three were removed to the city hospital for infectious diseases at Belvidere on the supposition that they were suffering from enteric fever, but the medical officers of the hospital suspected the disease to be plague. Dr. Robert Muir, professor of pathology in the University, was asked to see the patients, one of whom died on August 28th. The latest information is to the effect that clinically and pathologically there seems to be no doubt of the disease being plague, but the inoculation experiments are not yet completed. The announcement is, no doubt, one to cause anxiety, but from the ability of modern sanitary science to localise outbreaks of infectious disease in well-governed communities there need be no occasion for panic.

## THE LATE SIR HENRY LUNNON SIMPSON.

THE veterinary profession has sustained a severe loss through the accidental death by drowning of Sir Henry Lunnon Simpson. Sir Henry Simpson was a native of Windsor and after obtaining the diploma of the Royal College of Veterinary Surgeons in 1861 joined his father in practice in that town. He was elected a Vice-President of his College in 1881 and was an active member of the Council between 1882 and 1890, during which time he was always energetically on the side of progress. In the Jubilee year of 1887 honours fell thick upon him, as, in addition to being unanimously elected President of the Council, he was made mayor of Windsor. It was in this year that he received from Her Majesty the honour of knighthood. Sir Henry Simpson had a large consultative and general practice, from the latter of which he was gradually retiring in favour of his son. He was well known in horse-judging and sporting circles, his particular hobbies being hunters and polo ponies. He was veterinary surgeon to the Royal buckhounds. The sad occurrence took place at his country residence, the South Lea estate, Datchet, on the morning of August 17th. He was very fond of walking by the Thames and, as was his usual custom after reading his letters, he went for a walk by the river bank. What happened exactly will never be known, but it is surmised that he had a fainting fit and fell in. He had for some time been the subject of cardiac trouble and had remarked upon his occasional attacks of giddiness. Sir Henry Simpson was an expert swimmer and in the place where the body was found the water was only about four feet deep. He was 58 years of age. The funeral took place at Windsor Cemetery on August 21st, representatives of all classes being present, for the deceased was an exceedingly popular man and much respected. Deep sympathy is felt with Lady Simpson and

family, the Queen and other members of the Royal family being amongst those who have sent messages of condolence.

COLONEL J. LANE NOTTER, R.A.M.C., has resigned the post of Professor of Military Hygiene in the Army Medical School, Netley, and has, as we have already announced, left for South Africa as a member of the Commission of Inquiry into the causes of the great prevalence in many South African districts of enteric fever. He will also act as adviser to the Commander in-Chief as to the selection of sites for barracks and standing camps. We understand that the Professorship of Military Hygiene has been offered to Major R. Hammill Firth, F.R.C.S. Eng., R.A.M.C., formerly Assistant Professor.

DR. R. BLONDEL, who acted as the General Secretary of the First International Congress of the Medical Press recently held in Paris, has been named a Chevalier of the Legion of Honour.

## THE PRESENT POSITION OF PATHOLOGY IN ENGLAND.

*To the Editors of* THE LANCET.

SIRS,—It is somewhat remarkable, considering the advances in medicine and surgery due to pathological investigation, that the science of pathology should be held in such low esteem by the majority of the medical profession. Pathologists are consultants as much as surgeons and physicians and as such they ought to receive adequate fees, yet we find that while the opinion of a physician or surgeon is supposed to be worth two guineas or more the opinion of a pathologist is usually valued at about 5*s*. This is owing to the numerous "research associations" which have sprung up of late years in different parts of the country. These associations, as a rule, impose no limit whatever as regards the examination of material sent to them, they are backed up by the leading members of the profession and in some instances by the professors of pathology at the medical schools.

We have heard a great deal lately about the abuse of hospitals and clubs, but surely it is just as great an abuse that—to take an example—a surgeon who receives a large fee for the removal of a tumour can obtain a pathological report as to its nature for the sum of 5*s*. In a large number of these cases this report is of vital importance as regards diagnosis, prognosis, and treatment, and upon it may turn the result of medico-legal cases, yet it is supposed to be only worth a fee which a consulting physician or surgeon would refuse to take. Again, the low esteem in which pathology is held is shown by the way in which the pathological department at our larger hospitals is conducted. In a great number of these hospitals there is either no pathologist at all or if there is one he is in a very subordinate position and has no direct voice in the management of his department. This is strikingly seen on looking through the lists of officers of the large hospitals. Very few of these appoint pathologists on their staff and these are usually assistant physicians at the same time who, however capable they may be, may not have the necessary amount of time to devote to pathological work. Post-mortem examinations and microscopical investigations are often carried out by a house physician who has probably had no special training in pathology and who is hardly in a position to demonstrate the morbid changes to the students and others who may be present. As a matter of fact, physicians and surgeons look upon pathological investigation as a mere mechanical process of cutting sections, &c., and forget that to be able to interpret the appearances in the prepared specimens requires years of special study and experience.

Let us now see how this state of things can be remedied. All research associations and similar bodies should strictly confine their work to those cases in which an adequate fee cannot be obtained. The managers of these bodies should confer together and come to a definite understanding on this point. In the case of hospitals in connexion with medical schools the lecturer on pathology should be pathologist to the hospital. He should rank with the visiting staff and should have a direct voice in the management of his department. He should conduct post-mortem examinations and should be responsible for the pathological reports. He should have an assistant, preferably a resident, who should have the same relation to him as a house physician has to the visiting physician. The assistant would do the routine pathological and bacteriological work of the hospital, and would submit the results to the pathologist who would sign the reports. In the absence of the pathologist the assistant would himself conduct post-mortem examinations and would sign the reports. Post-mortem examinations should be systematically carried out at a fixed time, and as far as possible should not clash with other hospital duties. The post-mortem demonstration forms a most important part of the pathological course, and it should be in the same hands as the lectures and practical work. If it is impossible to have a special assistant for the hospital work, the duties might be carried out by one of the demonstrators of pathology. The pathological laboratories of the medical school should be devoted to teaching and research and should not be overburdened with work for sanitary authorities who should appoint their own bacteriologist and should have their own laboratories. Lastly all pathological reports in published cases should be attested by the name of the pathologist responsible for the report. This is an important point which is too often neglected.

If these reforms were carried out it would do much to raise the status of pathology, and, in consequence, there would be a considerable increase in the numbers of those who would take up pathology as a special line of study.

I am, Sirs, yours faithfully,
CHARLES POWELL WHITE, M.D. CANTAB.,
F.R.C.S. ENG.

## MEDICAL TEACHERS.

MR. R. C. B. KERIN, B.A., London, first in First Class Honours in Classics, assisted by a staff of B.A. and B.Sc. Honour Graduates, prepares candidates in class and by private tuition for Medical Preliminaries, London Matriculation, Preliminary Scientific Inter. Science, Hospital Scholarships, First Conjoint, First M.B. Lond., Oxon., and Camb., &c. Biological, Chemical, and Physical Laboratories. For last six years 150 London University Successes and three Hospital Science Scholarships, &c.—Carlyon College, 55 and 56, Chancery-lane, W.C.

THE UNIVERSITY EXAMINATION POSTAL INSTITUTION prepares candidates either through the post or orally for all Medical Examinations, especially the M.D. (London or Durham), the D.P.H. (Cambridge or London), and the F.R.C.S. (England or Edinburgh). There are five tutors holding the M.D. or M.S. degree for the postal preparation, besides other tutors for laboratory work. The institution has a well-equipped laboratory for Public Health work, including Bacteriology. The Manager is Mr. E. S. Weymouth, M.A., 27, Southampton-street, Strand, London, W.C.

M.D., B.S. LOND. prepares for all the Professional Exams. Small classes are held for the Final College of Surgeons and Physicians, the Hall, the M.D.'s of Brussels and Durham (15 years' standing). Tuition by correspondence.—Address, M.D., 23, Wimpole-street, Cavendish-square, W.

Special preparations, in class, privately, and by correspondence, for the Triple Qualification, Edinburgh. Also for Fellowship Examinations of Royal College of Surgeons, Edinburgh, and M.D. Brussels. Resident pupils received.—Address, CLASS ROOMS, 7, Chambers-street, Edinburgh.

Coaching for Examination (University of Brussels). Also Correspondence Course for Provincial Practitioners, with practical and *viva voce* work in London before going to Brussels.—Address, CANTAB., 38, Manchester-street, Manchester-square, W.

Classes for the Navy Medical Service are held at 46, Great Ormond-street, W.C. Those for the November Competitions begin on Monday, Sept. 18th, at 11 A.M.—E. C. DUCHESNE, Secy.

INSTRUCTORS IN ELOCUTION, &c.

Professor ALTSCHUL, Ph.D., has made Stammering, Stuttering, Lisping, Falsetto, recent or of long standing, due to nervousness, &c., irrespectively of age or sex (without any mechanical appliance), his special life-long study. The voice greatly developed and strengthened.—9, Old Bond-street, W. (Attends at Brighton.)

Mr. WILLIAM VAN PRAAGH, the public introducer of the Pure Oral System of teaching Deaf Mutes, has made the subject of Lip-reading and the cure of all Defects of Speech, both acquired and congenital, his special study. Papers on the various subjects can be had at 11, Fitzroy-square, W.

Mrs. EMIL BEHNKE gives instruction in Voice Training and treats Stammering and other Defects of Speech at 18, Earl's-court-square, S.W.

# Births, Marriages, and Deaths.

## DEATHS.

BROWN.—On August 27th, at Walton-on-Thames, Robert Gosset Brown, Esq., M.D., M.R.C.P. Lond., after nearly two years of much suffering borne with patient resignation. R.I.P.

WALLIS.—On August 19th, at The Cedars, Aldershot, William Edward James Wallis, M.B. Edin., aged 25 years.

WEBSTER.—On August 18th, at Middlesbrough, Arthur Webster, M.R.C.S. Eng., L.R.C.P. Lond., aged 32 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

### *OUR CURRENT NUMBER*

*Being almost exclusively devoted to information especially interesting to Students we are necessarily compelled to defer the publication of communications on other important subjects.*

*We tender our best thanks to those gentlemen who have at considerable personal trouble kindly supplied us with the returns and prospectuses upon which the information given in this Students' Number of* THE LANCET *relative to the various medical examining bodies, hospitals, and medical schools of the United Kingdom is based. We regret that in some cases, however, owing to proofs having been either not returned at all or too late, certain inaccuracies may be found.*

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*TO ADVERTISERS.*

*Owing to the pressure on our advertisement columns this week some announcements have unavoidably been held over.*

## Communications, Letters, &c., have been received from—

A.—Mr. B. G. Advani, Portland; Messrs. Armour and Co., Lond.; Mr. T. H. Agnew, Liverpool; Messrs. Allen and Hanburys, Lond.; A. W.; Army Medical Department, Director-General of; Rev. J. W. Atkinson, Lond.; Mr. P. Allen, Lond.

B.—Mr. A. Benthall, Catford; Mr. C. Birchall, Liverpool; Mr. H. E. Burch, Buluwayo; Mr. G. D. Barton, Lond.

C.—Dr. F. H. A. Clayton, R.N.; Dr. H. Campbell, Lond.; Dr. J. H. Cook, Calcutta; County Asylum, Lancaster, Clerk to; Corporation of Newcastle-on-Tyne, Medical Superintendent of; Dr. L. Cerf, Angers; Messrs. J. A. Carveth and Co., Toronto; Cortland Wagon Co., Lond.; Messrs. Cassell and Co., Lond.; Messrs. T. Christy and Co., Lond.; Messrs. C. J. Clay and Sons, Lond.; Dr. A. Cox, Gateshead; Dr. A. J. Chalmers, Liverpool.

D.—Lieutenant-Colonel G. W. P. Dennys, I.M.S., Sidmouth; Messrs. Debenham, Tewson, and Co., Lond.; Mr. R. Davis, Lond.; Mrs. Dodgson, Lond.; Dubious, Hinderwell; Messrs. Davies, Lond.; Mr. G. Drury, Newcastle-on-Tyne.

E.—Mr. C. Etheridge, Whitstable; Captain H. M. Earle, I.M.S., Ferozepore, India; Early Closing Association, Assistant Secretary of; Dr. A. G. Edington, Grahamstown; Enquirer, Eckington; Mr. T. S. Ellis, Gloucester.

F.—Dr. W. H. Forsbrook, Lond.; Mr. F. H. Foulds, Droitwich; Mr. W. T. Freeman, Reading; F. C. W.; Mr. E. H. Freeland, Lond.; Mr. M. Finucane, Aldershot.

G.—Mr. R. J. Gillanders, Fortrose; Messrs. Gardner and Co., Wisbech; Dr. Guido Guerrini, Bologna; Mr. P. G. Garrett, Pendleton.

H.—Mr. C. J. Harris, Lond.; Dr. J. A. Hutton, Scarborough; Dr. J. H. Hunter, South Shields; Dr. J. S. Hicks, Falmouth; Borough of Hastings, Town Clerk of.

I.—Mr. R. Inwards, Lond.

J.—Messrs. W. & A. K. Johnston, Edinburgh; J. H. G.; Mr. P. Napier Jones, Plaistow; Dr. Mary D. Jones, New York.; J. W. H.

K.—Dr. H. Kenwood, Lond.

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# Presidential Address

ON

# SOME ASPECTS OF BIOLOGY.

*Delivered at the Meeting at Bradford, on Sept. 5th, 1900, of the British Association for the Advancement of Science,*

BY SIR WILLIAM TURNER, M.B. LOND., D.C.L. OXON., LL.D. GLASG. & MONTREAL, D.SC. CAMB. & DUB, F.R.S.,

PRESIDENT OF THE ASSOCIATION, PRESIDENT OF THE GENERAL MEDICAL COUNCIL, AND PROFESSOR OF ANATOMY IN THE UNIVERSITY OF EDINBURGH.

SIR WILLIAM TURNER commenced by recalling the former meeting of the Association held in Bradford 27 years ago. He then referred to the deaths of two past presidents which had occurred since the Dover meeting—namely, those of the Duke of Argyll, president at Glasgow in 1855, and Sir J. W. Dawson, president at Birmingham in 1886. He then proceeded to lay down the qualities necessary for scientific method. In scientific research, he said, diligence and accuracy are fundamental qualities. ..... Scientific method consists, therefore, in close observation, frequently repeated so as to eliminate the possibility of erroneous seeing; in experiments checked and controlled in every direction in which fallacies might arise; in continuous reflection on the appearances and phenomena observed, and in logically reasoning out their meaning and the conclusions to be drawn from them. Were the method followed out in its integrity by all who are engaged in scientific investigations the time and labour expended in correcting errors committed by ourselves or by other observers and experimentalists would be saved and the volumes devoted annually to scientific literature would be materially diminished in size. Were it applied, as far as the conditions of life admit, to the conduct and management of human affairs we should not require to be told when critical periods in our welfare as a nation arise that we shall muddle through somehow. Recent experience has taught us that wise discretion and careful prevision are as necessary in the direction of public affairs as in the pursuit of science, and in both instances when properly exercised they enable us to reach with comparative certainty the goal which we strive to attain.

Sir William Turner then reminded his audience of the improvements in methods of observation which modern times had brought forth. A certain amount of gross anatomy had been known from very early times, but even down to the early part of this century but little more was known of the texture of the animal body than could be determined by the naked eye, assisted by a simple lens. Thus nerves, muscles, and tendons were known to be composed of fibres and blood- and lymph-vessels were known to be tubes. In 1830 Joseph Jackson Lister read a paper before the Royal Society upon the principles of the construction of achromatic object glasses for microscopes. One outcome of the increased penetrative powers of the microscope was Schwann's great cell theory announced in 1839. The enunciation of the fundamental principle that the elementary tissues consisted of cells constituted a step in the progress of biological science which will for ever stamp the century now drawing to a close with a character and renown equalling those which it has derived from the most brilliant discoveries in the physical sciences.

## STRUCTURE OF CELLS.

Sir William Turner continued: A cell is a living particle, so minute that it needs a microscope for its examination; it grows in size, maintains itself in a state of activity, responds to the action of stimuli, reproduces its kind, and in the course of time it degenerates and dies. Let us glance at the structure of a cell to determine its constituent parts and the rôle which each plays in the function to be discharged. The original conception of a cell, based upon the study of the vegetable tissues, was a minute vesicle enclosed by a definite wall, which exercised chemical or metabolic change on the surrounding material and secreted into the vesicle its characteristic contents. A similar conception was at first also entertained regarding the cells of animal tissues; but as observations multiplied it was seen that numerous elementary particles, which were obviously in their nature cells, did not possess an enclosing envelope. A wall ceased to have a primary value as a constituent part of a cell, the necessary vesicular character of which, therefore, could no longer be maintained. The other constituent parts of a cell are the cell plasm, which forms the body of the cell, and the nucleus embedded in its substance. Notwithstanding the very minute size of the nucleus, which even in the largest cells is not more than $\frac{1}{500}$th inch in diameter, and usually is considerably smaller, its almost constant form, its well-defined sharp outline, and its power of resisting the action of strong reagents when applied to the cell, have from the period of its discovery by Robert Brown caused histologists to bestow on it much attention. Its structure and chemical composition; its mode of origin; the part which it plays in the formation of new cells, and its function in nutrition and secretion have been investigated. When examined under favourable conditions in its passive or resting state, the nucleus is seen to be bounded by a membrane which separates it from the cell plasm and gives it the characteristic sharp contour. It contains an apparently structureless nuclear substance, nucleoplasm or enchylema, in which are embedded one or more extremely minute particles called nucleoli, along with a network of exceedingly fine threads or fibres, which in the active living cell play an essential part in the production of new nuclei within the cell. In its chemical composition the nuclear substance consists of albuminous plastin and globulin and of a special material named nuclein, rich in phosphorus and with an acid reaction. The delicate network within the nucleus consists apparently of the nuclein, a substance which stains with carmine and other dyes, a property which enables the changes which take place in the network in the production of young cells to be more readily seen and followed out by the observer. The mode of origin of the nucleus and the part which it plays in the production of new cells have been the subject of much discussion. Schleiden, whose observations, published in 1838, were made on the cells of plants, believed that within the cell a nucleolus first appeared, and that around it molecules aggregated to form the nucleus. Schwann, again, whose observations were mostly made on the cells of animals, considered that an amorphous material existed in organised bodies, which he called "cytoblastema." It formed the contents of cells, or it might be situated free or external to them. He figuratively compared it to a mother liquor in which crystals are formed. Either in the cytoblastema within the cells or in that situated external to them, the aggregation of molecules around a nucleolus to form a nucleus might occur, and when once the nucleus had been formed in its turn it would serve as a centre of aggregation of additional molecules from which a new cell would be produced. He regarded, therefore, the formation of nuclei and cells as possible in two ways: one within pre-existing cells (endogenous cell-formation), the other in a free blastema lying external to cells (free cell-formation). In animals, he says, the endogenous method is rare and the customary origin is in an external blastema. Both Schleiden and Schwann considered that after the cell was formed the nucleus had no permanent influence on the life of the cell and usually disappeared. Under the teaching principally of Henle, the famous professor of anatomy in Göttingen, the conception of the free formation of nuclei and cells in a more or less fluid blastema by an aggregation of elementary granules and molecules obtained so much credence, especially amongst those who were engaged in the study of pathological processes, that the origin of cells within pre-existing cells was to a large extent lost sight of. That a parent cell was requisite for the production of new cells seemed to many investigators to be no longer needed. Without doubt this conception of free cell-formation contributed in no small degree to the belief, entertained by various observers, that the simplest plants and animals might arise, without pre-existing parents, in organic fluids destitute of life, by a process of spontaneous generation—a belief which prevailed in many minds almost to the present day. If, as has been stated, the doctrine of abiogenesis cannot be experimentally refuted, on the other hand it has not been experimentally proved. The burden of proof lies with those

who hold the doctrine, and the evidence that we possess is all the other way.

Apparently the first to recognise a multiplication of cells in plants by division, was von Mohl in 1835. Von Baer and others had recognised the germinal vesicle in the animal ovum before 1839 and Barry in 1839 and 1840 communicated two papers to the Royal Society describing the multiplication of cells in or of the ovum.

John Goodsir and his brother Harry in 1842 and 1845 described the cleavage of cell nuclei and Remak (1850–1855) confirmed the idea that the nucleus was the starting point for multiplication of cells. Finally Virchow in 1858 in his Cellular Pathology gave the death-blow to the theory of the free formation of cells in blastema and laid down his well-known formula, *Omnis cellula e cellulâ*.

### KARYOKINESIS.

The nucleus in its passive or resting stage contains a very delicate network of threads or fibres. The first stage in the process of nuclear division consists in the threads arranging themselves in loops and forming a compact coil within the nucleus. The coil then becomes looser, the loops of threads shorten and thicken, and somewhat later each looped thread splits longitudinally into two portions. As the threads stain when colouring agents are applied to them, they are called chromatin fibres, and the loose coil is the chromosome (Waldeyer). As the process continues the investing membrane of the nucleus disappears and the loops of threads arrange themselves within the nucleus so that the closed ends of the loops are directed to a common centre, from which the loops radiate outwards and produce a star-like figure (aster). At the same time clusters of extremely delicate lines appear both in the nucleoplasm and in the body of the cell, named the achromatic figure, which has a spindle-like form with two opposite poles and stains much more feebly than the chromatic fibres. The loops of the chromatic star then arrange themselves in the equatorial plane of the spindle and bending round turn their closed ends towards the periphery of the nucleus and the cell. The next stage marks an important step in the process of division of the nucleus. The two longitudinal portions into which each looped thread had previously split now separate from each other, and whilst one part migrates to one pole of the spindle the other moves to the opposite pole and the free ends of each loop are directed towards its equator (metakinesis). By this division of the chromatin fibres and their separation from each other to opposite poles of the spindle two star-like chromatin figures are produced (dyaster). Each group of fibres thickens, shortens, becomes surrounded by a membrane, and forms a new or daughter nucleus (dispirem). Two nuclei, therefore, have arisen within the cell by the division of that which had previously existed, and the expression formulated by Flemming—*omnis nucleus e nucleo*—is justified. Whilst this stage is in course of being completed the body of the cell becomes constricted in the equatorial plane of the spindle, and as the constriction deepens it separates into two parts, each containing a daughter nucleus, so that two nucleated cells have arisen out of a pre-existing cell. A repetition of the process in each of these cells leads to the formation of other cells, and although modifications in details are found in different species of plants and animals the multiplication of cells in the egg and in the tissues generally on similar lines is now a thoroughly established fact in biological science.

In the study of karyokinesis importance has been attached to the number of chromosomes in the nucleus of the cell. Flemming had seen in the salamander 24 chromosome fibres, which seems to be a constant number in the cells of epithelium and connective tissues. In other cells, again, especially in the ova of certain animals, the number is smaller, and 14, 12, four, and even two only have been described. The theory formulated by Boveri that the number of chromosomes is constant for each species, and that in the karyokinetic figures corresponding numbers are found in homologous cells, seems to be not improbable. In the preceding description I have incidentally referred to the appearance in the proliferating cell of an achromatic spindle-like figure. Although this was recognised by Fol in 1873 it is only during the last 10 or 12 years that attention has been paid to its more minute arrangements and possible signification in cell-division. The pole at each end of the spindle lies in the cell plasm which surrounds the nucleus. In the centre of each pole is a somewhat opaque spot (central body) surrounded by a clear space, which, along with the spot, constitutes the centrosome or the sphere of attraction. From each centrosome extremely delicate lines may be seen to radiate in two directions. One set extends towards the pole at the opposite end of the spindle and, meeting or coming into close proximity with radiations from it, constitutes the body of the spindle, which, like a perforated mantle, forms an imperfect envelope around the nucleus during the process of division. The other set of radiations is called the polar and extends in the region of the pole towards the periphery of the cell. The question has been much discussed whether any constituent part of the achromatic figure, or the entire figure, exists in the cell as a permanent structure in its resting phase, or if it is only present during the process of karyokinesis. During the development of the egg the formation of young cells, by division of the segmentation nucleus, is so rapid and continuous that the achromatic figure, with the centrosome in the pole of the spindle, is a readily recognisable object in each cell. The polar and spindle-like radiations are in evidence during karyokinesis and have apparently a temporary endurance and function. On the other hand, van Beneden and Boveri were of opinion that the central body of the centrosome did not disappear when the division of the nucleus came to an end, but that it remained as a constituent part of a cell lying in the cell plasm near to the nucleus. Flemming has seen the central body with its sphere in leucocytes, as well as in epithelial cells and those of other tissues. Subsequently Heidenhain and other histologists have recorded similar observations. It would seem, therefore, as if there were reason to regard the centrosome, like the nucleus, as a permanent constituent of a cell. This view, however, is not universally entertained. If not always capable of demonstration in the resting stage of a cell it is doubtless to be regarded as potentially present and ready to assume, along with the radiations, a characteristic appearance when the process of nuclear division is about to begin. One can scarcely regard the presence of so remarkable an appearance as the achromatic figure without associating with it an important function in the economy of the cell. As from the centrosome at the pole of the spindle both sets of radiations diverge, it is not unlikely that it acts as a centre or sphere of energy and attraction. By some observers the radiations are regarded as substantive fibrillar structures, elastic or even contractile in their properties. Others, again, look upon them as morphological expressions of chemical and dynamical energy in the protoplasm of the cell body. On either theory we may assume that they indicate an influence, emanating, it may be, from the centrosome and capable of being exercised both on the cell plasm and on the nucleus contained in it. On the contractile theory the radiations which form the body of the spindle, either by actual traction of the supposed fibrillæ or by their pressure on the nucleus which they surround, might impel during karyokinesis the dividing chromosome elements towards the poles of the spindle to form there the daughter nuclei. On the dynamical theory the chemical and physical energy in the centrosome might influence the cell plasm and the nucleus and attract the chromosome elements of the nucleus to the poles of the spindle. The radiated appearance would therefore be consequent and attendant on the physico-chemical activity of the centrosome. One or other of these theories may also be applied to the interpretation of the significance of the polar radiations.

### CELL PLASM.

In the cells of plants, in addition to the cell wall, the cell body and the cell juice require to be examined. The material of the cell body, or the cell contents, was named by von Mohl (1846) "protoplasm," and consisted of a colourless tenacious substance which partly lined the cell wall (primordial utricle), and partly traversed the interior of the cell as delicate threads enclosing spaces (vacuoles) in which the cell juice was contained. In the protoplasm the nucleus was embedded. Nägeli, about the same time, had also recognised the difference between the protoplasm and the other contents of vegetable cells, and had noticed its nitrogenous composition. Though the analogy with a closed bladder or vesicle could no longer be sustained in the animal tissues the name "cell" continued to be retained for descriptive purposes and the body of the cell was spoken of as a more or less soft substance enclosing a nucleus (Leydig). In 1861 Max Schultze adopted for the substance forming the body of the animal cell the term "protoplasm." He defined a cell to be a particle of protoplasm in the substance of

which a nucleus was situated. He regarded the protoplasm, as indeed had previously been pointed out by the botanist Unger, as essentially the same as the contractile sarcode which constitutes the body and pseudopodia of the amœba and other rhizopoda. As the term "protoplasm," as well as that of "bioplasm" employed by Lionel Beale in a somewhat similar though not precisely identical sense, involves certain theoretical views of the origin and function of the body of the cell it would be better to apply to it the more purely descriptive term "cytoplasm" or "cell plasm." Schultze defined protoplasm as a homogeneous, glassy, tenacious material, of a jelly-like or somewhat firmer consistency, in which numerous minute granules were embedded. He regarded it as the part of the cell especially endowed with vital energy, whilst the exact function of the nucleus could not be defined. Based upon this conception of the jelly-like character of protoplasm the idea for a time prevailed that a structureless, dimly granular jelly or slime destitute of organisation possessed great physiological activity and was the medium through which the phenomena of life were displayed.

More accurate conceptions of the nature of the cell plasm soon began to be entertained. Brücke recognised that the body of the cell was not simple but had a complex organisation. Flemming observed that the cell plasm contained extremely delicate threads which frequently formed a network the interspaces of which were occupied by a more homogeneous substance. Where the threads crossed each other granular particles (mikrosomen) were situated. Bütschli considered that he could recognise in the cell plasm a honeycomb like appearance as if it consisted of excessively minute chambers in which a homogeneous more or less fluid material was contained. The polar and spindle-like radiations visible during the process of karyokinesis, which have already been referred to, and the presence of the centrosome, possibly even during the resting stage of the cell, furnished additional illustrations of differentiation within the cell plasm. In many cells there appears also to be a difference in the character of the cell plasm which immediately surrounds the nucleus and that which lies at and near the periphery of the cell. The peripheral part (ektoplasma) is more compact and gives a definite outline to the cell, although not necessarily differentiating into a cell membrane. The inner part (endoplasma) is softer, and is distinguished by a more distinct granular appearance, and by containing the products specially formed in each particular kind of cell during the nutritive process. By the researches of numerous investigators on the internal organisation of cells in plants and animals a large body of evidence has now been accumulated which shows that both the nucleus and the cell plasm consist of something more than a homogeneous, more or less viscid, slimy material. Recognisable objects in the form of granules, threads, or fibres can be distinguished in each. The cell plasm and the nucleus respectively are therefore not of the same constitution throughout but possess polymorphic characters the study of which in health and the changes produced by disease will for many years to come form important matters for investigation.

### FUNCTION OF CELLS.

Sir William Turner then shortly sketched the various functions of cells and gave a brief retrospect of the researches of Schwann, Henle, the Goodsirs, and others who had studied and are studying the subject. He continued—

### NERVE CELLS.

Of recent years great attention has been paid to the intimate structure of nerve cells and to the appearance which they present when in the exercise of their functional activity. A nerve cell is not a secreting cell, that is, it does not derive from the blood or surrounding fluid a pabulum which it elaborates into a visible, palpable secretion characteristic of the organ of which the cell is a constituent element, to be in due course discharged into a duct which conveys the secretion out of the gland. Nerve cells, through the metabolic changes which take place in them in connexion with their nutrition are associated with the production of the form of energy specially exhibited by animals which possess a nervous system, termed nerve energy. It has long been known that every nerve cell has a body in which a relatively large nucleus is situated. A most important discovery was the recognition that the body of every nerve cell had one or more processes growing out from it. More recently it has been proved, chiefly through the researches of Schultze, His, Golgi, and Ramon y Cajal, that at least one of the processes, the axon of the nerve cell, is continued into the axial cylinder of a nerve fibre and that in the multipolar nerve cell the other processes, or dendrites, branch and ramify for some distance away from the body. A nerve fibre is therefore an essential part of the cell with which it is continuous, and the cell, its processes, the nerve fibre, and the collaterals which arise from the nerve fibre collectively form a neuron or structural nerve unit (Waldeyer). The nucleated body of the nerve cell is the physiological centre of the unit. The cell plasm occupies both the body of the nerve cell and its processes. The intimate structure of the plasm has, by improved methods of observation introduced during the last eight years by Nissl and conducted on similar lines by other investigators, become more definitely understood. It has been ascertained that it possesses two distinct characters which imply different structures. One of these stains deeply on the addition of certain dyes, and is named "chromophile" or "chromatic substance"; the other, which does not possess a similar property, is the "achromatic network." The chromophile is found in the cell body and the dendritic processes but not in the axon. It occurs in the form of granular particles, which may be scattered throughout the plasm or aggregated into little heaps which are elongated or fusiform in shape and appear as distinct coloured particles or masses. The achromatic network is found in the cell body and the dendrites and is continued also into the axon, where it forms the axial cylinder of the nerve fibre. It consists apparently of delicate threads or fibrillæ, in the meshes of which a homogeneous material, such as is found in cell plasm generally, is contained. In the nerve cells, as in other cells, the plasm is without doubt concerned in the process of cell nutrition. The achromatic fibrillæ exercise an important influence on the axon or nerve fibre with which they are continuous, and probably they conduct the nerve impulses which manifest themselves in the form of nerve energy. The dendritic processes of a multipolar nerve-cell ramify in close relation with similar processes branching from other cells in the same group. The collaterals and the free end of the axon fibre process branch and ramify in association with the body of a nerve cell or of its dendrites. We cannot say that these parts are directly continuous with each other to form an inter-cellular network, but they are apparently in apposition, and through contact exercise influence one on the other in the transmission of nerve impulses. There is evidence to show that in the nerve cell the nucleus, as well as the cell plasm, is an effective agent in nutrition. When the cell is functionally active, both the cell body and the nucleus increase in size (Vas, G. Mann, Lugaro); on the other hand, when nerve cells are fatigued through excessive use, the nucleus decreases in size and shrivels; the cell plasm also shrinks, and its coloured or chromophile constituent becomes diminished in quantity, as if it had been consumed during the prolonged use of the cell (Hodge, Mann, Lugaro). It is interesting also to note that in hibernating animals in the winter season, when their functional activity is reduced to a minimum, the chromophile in the plasm of the nerve cells is much smaller in amount than when the animal is leading an active life in the spring and summer (G. Levi). When a nerve cell has attained its normal size it does not seem to be capable of reproducing new cells in its substance by a process of karyokinesis, such as takes place when young cells arise in the egg and in the tissues generally. It would appear that nerve cells are so highly specialised in their association with the evolution of nerve energy, that they have ceased to have the power of reproducing their kind, and the metabolic changes both in cell plasm and nucleus are needed to enable them to discharge their very peculiar function. Hence it follows that when a portion of the brain or other nerve centre is destroyed the injury is not repaired by the production of fresh specimens of their characteristic cells, as would be the case in injuries to bones and tendons. In our endeavours to differentiate the function of the nucleus from that of the cell plasm, we should not regard the former as concerned only in the production of young cells, and the latter as the exclusive agent in growth, nutrition, and, where gland cells are concerned, in the formation of their characteristic products. As regards cell reproduction also, though the process of division begins in the nucleus in its chromosome constituents, the achromatic figure in the cell plasm undoubtedly

plays a part, and the cell plasm itself ultimately undergoes cleavage. A few years ago the tendency amongst biologists was to ignore or attach but little importance to the physiological use of the nucleus in the nucleated cell, and to regard the protoplasm as the essential and active constituent of living matter; so much so, indeed, was this the case that independent organisms regarded as distinct species were described as consisting of protoplasm destitute of a nucleus; also that scraps of protoplasm separated from larger nucleated masses could, when isolated, exhibit vital phenomena. There is reason to believe that a fragment of protoplasm, when isolated from the nucleus of a cell, though retaining its contractility and capable of nourishing itself for a short time, cannot increase in amount, act as a secreting structure, or reproduce its kind: it soon loses its activity, withers, and dies. In order that these qualities of living matter should be retained a nucleus is by most observers regarded as necessary (Nussbaum, Gruber, Haberlandt, Korschelt), and for the complete manifestation of vital activity both nucleus and cell plasm are required.

### BACTERIA.

The observations of Cohn, made about 30 years ago, and those of De Bary shortly afterwards, brought into notice a group of organisms to which the name "bacterium" or "microbe" is given. They were seen to vary in shape: some were rounded specks called cocci, others were straight rods called bacilli, others were curved or spiral rods, vibrios or spirillæ. All were characterised by their extreme minuteness, and required for their examination the highest powers of the best microscopes. Many bacteria measure in their least diameter not more than $\frac{1}{25000}$th of an inch, $\frac{1}{10}$th the diameter of a human white blood corpuscle. Through the researches of Pasteur, Lord Lister, Koch, and other observers bacteria have been shown to play an important part in nature. They exercise a very remarkable power over organic substances, especially those which are complex in chemical constitution, and can resolve them into simpler combinations. Owing to this property some bacteria are of great economic value and without their agency many of our industries could not be pursued; others again, and these are the most talked of, exercise a malign influence in the production of the most deadly diseases which afflict man and the domestic animals.

Great attention has been given to the structure of bacteria and to their mode of propagation. When examined in the living state and magnified about 2000 times, a bacterium appears as a homogeneous particle, with a sharp definite outline, though a membranous envelope or wall, distinct from the body of the bacterium, cannot at first be recognised, but when treated with reagents a membranous envelope appears, the presence of which without doubt gives precision of form to the bacterium. The substance within the membrane contains granules which can be dyed with colouring agents. Owing to their extreme minuteness it is difficult to pronounce an opinion on the nature of the chromatine granules and the substance in which they lie. Some observers regard them as nuclear material, invested by only a thin layer of protoplasm, on which view a bacterium would be a nucleated cell. Others consider the bacterium as formed of protoplasm containing granules capable of being coloured, which are a part of the protoplasm itself and not a nuclear substance. On the latter view bacteria would consist of cell plasm enclosed in a membrane and destitute of a nucleus. Whatever be the nature of the granule-containing material each bacterium is regarded as a cell, the minutest and simplest living particle capable of an independent existence that has yet been discovered. Bacteria cells, like cells generally, can reproduce their kind. They multiply by simple fission, probably with an ingrowth of the cell wall, but without the karyokinetic phenomena observed in nucleated cells. Each cell gives rise to two daughter cells, which may for a time remain attached to each other and form a cluster or a chain, or they may separate and become independent isolated cells. The multiplication, under favourable conditions of light, air, temperature, moisture, and food, goes on with extraordinary rapidity, so that in a few hours many thousand new individuals may arise from a parent bacterium.

Connected with the life-history of a bacterium cell is the formation in its substance, in many species and under certain conditions, of a highly refractile shiny particle called a "spore." At first sight a spore seems if it were the nucleus of the bacterium cell, but it is not always present when multiplication by cleavage is taking place and when present it does not appear to take part in the fission. On the other hand, a spore, from the character of its envelope, possesses great power of resistance, so that dried bacteria, when placed in conditions favourable to germination, can through their spores germinate and resume an active existence. Spore formation seems, therefore, to be a provision for continuing the life of the bacterium under conditions which, if spores had not formed, would have been the cause of its death. The time has gone by to search for the origin of living organisms by a spontaneous aggregation of molecules in vegetable or other infusions or from a layer of formless primordial slime diffused over the bed of the ocean. Living matter during our epoch has been, and continues to be, derived from pre-existing living matter, even when it possesses the simplicity of structure of a bacterium, and the morphological unit is the cell.

[Sir William Turner then referred to the structure and development of the tissues and organs, and mentioned the names of those who had been foremost in the study of this subject. Such were Wolff, Hofmeister, Julius von Sachs, William Bowman, F. M. Balfour, and the veteran Albert von Kölliker who still lives. General morphology, which must be studied along with the origin and structure of tissues, had among those who had worked at it such thinkers as Goethe, Richard Owen, Reichert, Ralke, and Huxley. Sir William Turner continued:]

The morphological characters exhibited by a plant or animal tend to be hereditarily transmitted from parents to offspring and the species is perpetuated. In each species the evolution of an individual, through the developmental changes in the egg, follows the same lines in all the individuals of the same species which possess, therefore, in common the features called specific characters. The transmission of the characters is due, according to the theory of Weismann, to certain properties possessed by the chromosome constituents of the segmentation nucleus in the fertilised ovum, named by him the germ plasm, which is continued from one generation to another and impresses its specific character on the egg and on the plant or animal developed from it. The special tissues which build up the bodies of the more complex organisms are evolved out of cells at first simple in form. During the evolution of the individual, cells become modified or differentiated in structure and function, and so long as the differentiation follows certain prescribed lines the morphological characters of the species are preserved. We can readily conceive that, as the process of specialisation is going on, modifications or variations in groups of cells and the tissues derived from them, notwithstanding the influence of heredity, may in an individual diverge so far from that which is characteristic of the species as to assume the arrangements found in another species, or even in another order. Anatomists had, indeed, long recognised that variations from the customary arrangement of parts occasionally appeared and they described such deviations from the current descriptions as irregularities.

### DARWINIAN THEORY.

The signification of the variations which arise in plants and animals had not been apprehended until a flood of light was thrown on the entire subject by the genius of Charles Darwin, who formulated the wide-reaching theory that variations could be transmitted by heredity to younger generations. In this manner he conceived new characters would arise, accumulate, and be perpetuated which would in the course of time assume specific importance. New species might thus be evolved out of organisms originally distinct from them, and their specific characters would in turn be transmitted to their descendants. By a continuance of this process new species would multiply in many directions, until at length from one or more originally simple forms the earth would become peopled by the infinite varieties of plant and animal organisms which have in past ages inhabited, or do at present inhabit, our globe. The Darwinian theory may therefore be defined as heredity modified and influenced by variability. It assumes that there is an heredity quality in the egg which, if we take the common fowl for an example, shall continue to produce similar fowls. Under conditions, of which we are ignorant, which occasion molecular changes in the cells and tissues of the developing egg, variations might arise in the first instance probably slight, but becoming intensified in successive generations until at length the

descendants would have lost the characters of the fowl and have become another species. No precise estimate has been arrived at, and, indeed, one does not see how it is possible to obtain it, of the length of years which might be required to convert a variation capable of being transmitted into a new and definite specific character.

The circumstances which according to the Darwinian theory determined the perpetuation by hereditary transmission of a variety and its assumption of a specific character depended, it was argued, on whether it possessed such properties as enabled the plant or animal in which it appeared to adapt itself more readily to its environment—i.e., to the surrounding conditions. If it were to be of use the organism in so far became better adapted to hold its own in the struggle for existence with its fellows and with the forces of nature operating on it. Through the accumulation of useful characters the specific variety was perpetuated by natural selection so long as the conditions were favourable for its existence and it survived as being the best fitted to live. In the study of the transmission of variations which may arise in the course of development it should not be too exclusively thought that only those variations are likely to be preserved which can be of service during the life of the individual, or in the perpetuation of the species, and possibly available for the evolution of new species. It should also be kept in mind that morphological characters can be transmitted by hereditary descent, which, though doubtless of service in some bygone ancestor, are in the new conditions of life of the species of no physiological value. Our knowledge of the structural and functional modifications to be found in the human body, in connexion with abnormalities and with tendencies or predisposition to diseases of various kinds, teaches us that characters which are of no use, and, indeed, detrimental to the individual, may be hereditarily transmitted from parents to offspring through a succession of generations.

Since the conception of the possibility of the evolution of new species from pre-existing forms took possession of the minds of naturalists, attempts have been made to trace out the lines on which it has proceeded. The first to give a systematic account of what he conceived to be the order of succession in the evolution of animals was Ernst Haeckel of Jena, in a well-known treatise. Memoirs on special departments of the subject, too numerous to particularise, have subsequently appeared. The problem has been attacked along two different lines: the one by embryologists, of whom may be named Kowalewsky, Gegenbaur, Dohrn, Ray Lankester, Balfour, and Gaskell, who with many others have conducted careful and methodical inquiries into the stages of development of numerous forms belonging to the two great divisions of the animal kingdom. Invertebrates, as well as vertebrates, have been carefully compared with each other in the bearing of their development and structure on their affinities and descent, and the possible sequence in the evolution of the vertebrata from the invertebrata has been discussed. The other method pursued by palæontologists, of whom Huxley, Marsh, Cope, Osborne, and Traquair are prominent authorities, has been the study of the extinct forms preserved in the rocks and the comparison of their structure with each other and with that of existing organisms. In the attempts to trace the line of descent the imagination has not infrequently been called into play in constructing various conflicting hypotheses. Though from the nature of things the order of descent is, and without doubt will continue to be, ever a matter of speculation and not of demonstration, the study of the subject has been a valuable intellectual exercise and a powerful stimulant to research.

We know not as regards time when the fiat went forth, "Let there be Life, and there was Life." All we can say is that it must have been in the far-distant past, at a period so remote from the present that the mind fails to grasp the duration of the interval. Prior to its genesis our earth consisted of barren rock and desolate ocean. When matter became endowed with life, with the capacity of self-maintenance and of resisting external disintegrating forces, the face of nature began to undergo a momentous change. Living organisms multiplied, the land became covered with vegetation, and multitudinous varieties of plants, from the humble fungus and moss to the stately palm and oak, beautified its surface and fitted it to sustain higher kinds of living beings. Animal forms appeared, in the first instance simple in structure, to be followed by others more complex, until the mammalian type was produced. The ocean also became peopled with plant and animal organisms, from the microscopic diatom to the hugh leviathan. Plants and animals acted and reacted on each other, on the atmosphere which surrounded them, and on the earth on which they dwelt, the surface of which became modified in character and aspect. At last Man came into existence. His nerve-energy, in addition to regulating the processes in his economy which he possesses in common with animals, was endowed with higher powers. When translated into psychical activity it has enabled him throughout the ages to progress from the condition of a rude savage to an advanced stage of civilisation; to produce works in literature, art, and the moral sciences which have exerted, and must continue to exert, a lasting influence on the development of his higher being; to make discoveries in physical science; to acquire a knowledge of the structure of the earth, of the ocean in its changing aspects, of the atmosphere and the stellar universe, of the chemical composition and physical properties of matter in its various forms, and to analyse, comprehend, and subdue the forces of nature. By the application of these discoveries to his own purposes man has, to a large extent, overcome time and space; he has studded the ocean with steamships, girdled the earth with the electric wire, tunnelled the lofty Alps, spanned the Forth with a bridge of steel, invented machines and founded industries of all kinds for the promotion of his material welfare, elaborated systems of government fitted for the management of great communities, formulated economic principles, obtained an insight into the laws of health, the causes of infective diseases, and the means of controlling and preventing them.

When we reflect that many of the most important discoveries in abstract science and in its applications have been made during the present century, and indeed since the British Association held its first meeting in the ancient capital of your county 69 years ago, we may look forward with confidence to the future. Every advance in science provides a fresh platform from which a new start can be made. The human intellect is still in process of evolution. The power of application and of concentration of thought for the elucidation of scientific problems is by no means exhausted. In science is no hereditary aristocracy. The army of workers is recruited from all classes. The natural ambition of even the private in the ranks to maintain and increase the reputation of the branch of knowledge which he cultivates affords an ample guarantee that the march of science is ever onwards, and justifies us in proclaiming for the next century, as in the one fast ebbing to a close, that great is science and it will prevail.

# A Clinical Lecture

ON

# THE EXPECTANCY OF LIFE IN CASES OF CANCER OF THE BREAST.

*Delivered at University College Hospital on July 14th, 190*

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GENTLEMEN,—The gloom which has hung over the question of the expectancy of life in cancer of the breast has hitherto been fully justified. We know from the experience of the older surgeons that the majority of women afflicted with this disease are doomed if untreated by operation to death within two years. And even those who in former years submitted to the removal of the breast for this disease in most cases suffered from speedy local or general recurrence. But within the last few years some rays of hope have been cast upon this dark chapter of surgery by the achievements reported in various directions of the results of more recent and improved operations. At the present moment the outlook of a woman with cancer of the breast is

by no means so desperate as, say, 20 years ago, either as regards the prospect of prolongation of life by operation or complete immunity from recurrence. This is due to many causes operating together and reacting one upon the other. Before all things it depends upon the spread of knowledge among the general population and the profession in regard to the danger of neglecting any tumour of the breast. This is as much as to say that the knowledge of the pathology of breast carcinoma is more accurate and general than in earlier days. The particular way in which this more general diffusion of knowledge has influenced our results can perhaps be most briefly expressed by putting before you some of the axioms now pretty generally received in relation to this question.

In the first place, our pathological knowledge is now much more accurate than formerly in regard to the commencement and mode of dissemination of cancer of the breast. The following are the pathological axioms which most directly influence our surgical practice in dealing with the disease. 1. Carcinoma of the breast is probably for a short time a purely local disease. 2. It very soon begins to spread from the primary focus into the surrounding tissues by way of the lymphatics. 3. Three systems of lymphatics participate in this process—the epi-mammary under the skin, the mammary in the breast substance, and the sub-mammary in the fascia covering the pectoral muscles. 4. The lymphatic glands of the axilla receive most of the lymph and cancer germs from these systems and act as a dam to their further progress for a time. In some rarer cases the flow of lymph takes place—in part, at all events, towards the lymph-channels underlying the pleura. 5. It is probably possible to reinfect otherwise healthy tissues during an excision of the breast by the juices of the infected material in process of removal. This may take place either by the knife or other instruments, the surgeon's hands, or by actual contact of a cut surface of the infected area with the dissected surface. 6. When the cancerous infection has reached the underlying muscles it usually corresponds with a spread to the internal organs.

Bearing these points in mind the following surgical axioms have come to be pretty generally held and acted on in the operative treatment of the disease with great advantage to the patient. 1. An excision of the breast to be effectual must be early. 2. The overlying skin, subcutaneous fat, pectoral fascia, axillary fat and glands with the entire breast must be widely and deliberately removed. 3. During this dissection all division of carcinomatous tissue should be avoided and if inevitable freshly sterilised instruments, &c., must be used. 4. As little direct handling of the parts to be removed as possible should take place. 5. Arrest of all immediate bleeding should be accomplished preferably by forcipressure, and if not by ligature and subsequent oosing by elastic pressure and bandaging. Rest for the wound and the patient should be secured for at least two weeks. 6. All this extensive removal can be accomplished with but little risk to the patient in fairly early cases. 7. When the disease has infected the muscles palliation alone can be expected from surgical interference, and it is questionable whether very extensive operations involving risk from shock ought to be performed with only this end in view. Indeed, the apparently paradoxical rule (which for my own part I have followed of late) appears to be justified—viz., that the more localised the primary focus of carcinoma in the breast is the more wide reaching should be the excision on the above lines. That is to say, there is in such cases a fair prospect of complete eradication of the disease by a wide-reaching operation, and therefore it is justifiable to run some risk of shock. The converse rule appears also to have much to recommend it—viz., that the more wide reaching the disease the more clearly should the operator keep mere palliation in view and by limiting his operation avoid the risk of extreme shock.

These considerations at all events have materially influenced my own practice of late years and I should now like to place before you the results of 100 consecutive excisions of the breast which I have done. They have been carefully analysed by a brilliant former student, Mr. J. E. Simpson, in his Liston Prize Essay for 1898, and I have only for your benefit to-day brought the record down to date which he had hoped to do had he lived. He spared no pains to make the analysis accurate by looking up the patients and examining the documents in the Registrar-General's office at Somerset House, and his industry and ability are known to us all. The first point he examined into was the nature of the disease for which excision was performed. The following were his results:—

| Nature of tumour. | Number of cases. | Nature of tumour. | Number of cases. |
|---|---|---|---|
| Scirrhus ... ... ... ... | 82 | Cystic adenoma... ... | 1 |
| Colloid cancer ... ... | 2 | Duct papilloma ... ... | 1 |
| Scirrho-encephaloid ... | 2 | Chronic fibrosis ... ... | 1 |
| Duct cancer ... ... ... | 4 | Doubtful ... ... ... | 1 |
| Cystic degeneration ... | 4 | | |
| Fibro-adenoma ... ... | 2 | Total ... ... ... | 100 |

This gives us a proportion of 90 malignant cases to nine of non-malignant and one doubtful.

The next point studied was the gross mortality in 100 excisions. This comes out as follows, and you will notice that the deaths fall mostly to the earlier years when procedures were far less perfect than of late.

| No. of cases. | Cause of death. | Date of death. |
|---|---|---|
| 1 | Pyæmia. | 1878—3 months after operation. |
| 1 | Septicæmia. | 1880—1 month ,, ,, |
| 1 | Cellulitis. | 1888—8 days ,, ,, |
| 1 | Syncope. | 1894—9 ,, ,, ,, |
| 1 | Pleurisy. | 1895—4 ,, ,, ,, |

The first three of this group of deaths from operation would probably not appear in any subsequent series of cases so much has been the improvement in wound treatment since 1888. The mortality, therefore, to-day is probably far below this 5 per cent. But such cases as that of syncope occurring in an old lady on the eighth day when the wound was perfectly healed per primam belong to the accidents of our experience against which we cannot be shielded by any amount of care. In the case of pleurisy there was no injury of the pleura so that the cause was probably the exposure in a feeble woman. Leaving out the cases of so-called duct cancer as perhaps not strictly carcinoma there remain 86 cases of undoubtedly malignant character, including scirrhus (82), colloid (2), and scirrho-encephaloid (2). These I have grouped in the following tables in a way which gives us some idea as to the "expectancy of life in cancer of the breast."

TABLE I.—*Cases known to have Died long after Excision, presumably from Recurrence, though one case certainly died from Calculous Pyelitis without Recurrence, and possibly others.*

| | | | |
|---|---|---|---|
| Lived over 7 years ... | 1 | Lived over 2 years ... ... ... | 14 |
| ,, ,, 6 ,, ... | 3 | ,, ,, 1 ,, ... ... ... | 14 |
| ,, ,, 5 ,, ... | 1 | ,, under 1 ,, ... ... ... | 10 |
| ,, ,, 4 ,, ... | 2 | | |
| ,, ,, 3 ,, ... | 7 | Total ... ... ... ... ... | 52 |

(Lived over 7 years to over 3 years: 14 = 26·9 per cent.)

It is evident from this that 26·9 per cent. have lived over three years and yet succumbed to cancer. Mr. Simpson traced a further nine cases for over three years, but found no record of death in any.

Here we see that 52 cases have died within intervals ranging from two months to over seven years. In Table II. you have 20 cases known to be alive at the intervals given; and of these 15 are or were alive over three years.

TABLE II.—*Cases of Excision of the Breast known to be Alive at the Intervals given in July, 1900, grouped with those Alive and without Recurrence respectively 10 years and one month, one year and seven months, and one year and two months when last heard of more than a year ago.*

| | | | |
|---|---|---|---|
| Living after 14 years ... ... | 1 | Living after 2 years ... ... ... | 3 |
| ,, ,, 10 ,, ... ... | 1 | ,, ,, 1 ,, ... ... ... | 2 |
| ,, ,, 8 ,, ... ... | 2 | | |
| ,, ,, 7 ,, ... ... | 1 | Total ... ... ... ... ... | 20 |
| ,, ,, ,, ... ... | 3 | | |
| ,, ,, ,, ... ... | 1 | | |
| ,, ,, 4 ,, ... ... | 3 | | |
| ,, ,, ,, ... ... | 3 | | |

(Living after 14 years to over 3 years: 15)

TABLE III.—*Cases known to have Died taken together with those still Alive and Examined as to Duration of Life.*

| | | | |
|---|---|---|---|
| Lived over 13 years | 1 | | |
| ,, ,, 10 ,, | 1 | | |
| ,, ,, 8 ,, | 2 | | |
| ,, ,, 7 ,, | 2 | = 14 = 16·2 per cent. | |
| ,, ,, 6 ,, | 6 | | |
| ,, ,, 5 ,, | 2 | | |
| ,, ,, 4 ,, | 5 | = 29 = 33·7 per cent. | |
| ,, ,, 3 ,, | 10 | | |
| ,, ,, 2 ,, | 1 | | |
| Lived over 1 year | 16 | | |
| | 62 | | |
| ,, ,, 1 month | 10 | | |
| | 72 | | |
| Untraced | 9 | | |
| | 81 | | |
| Died from operation | 5 | | |
| | 86 | | |

From this it will be seen that 16 per cent. lived over five years and 33·7 per cent. over three years. These figures appear to justify the hope that the expectancy of life is improving as time goes on. It is clear that over 33 per cent. live more than three years after the operation, which has suggested to some surgeons that such cases should be regarded as permanent cures. But some of the cases (26·9 per cent.) have died most likely from recurrence in all but one after an interval of immunity of over three years, so that such a presumption is unwarranted.

Another interesting point comes out from this analysis—namely, that only seven suffered from *local* recurrence. Those in whom the disease has returned have shown it in internal parts. This is another good feature of the modern operations, local recurrence being most depressing and painful, while internal generalisation is often not so.

These cases have been accurately recorded and in almost every case the diagnosis with the naked eye has been confirmed by microscopical examination by various competent observers, mostly the hospital registrars. In the oldest case in the list the glands were extensively invaded as well as the breast, and a bad prognosis was given at the end of the operation, and yet at the end of 14 years the patient is well and free from any trace of cancer. This and some of the other cases seem to justify the hope that this disease can be eradicated by the knife. And it is not too much to hope that with still further improvement in early diagnosis and treatment a far larger proportion of cases may be saved. If the four cases of duct cancer were included the figures would be still more favourable.

## ON THE PATHOLOGY AND THERAPY OF ANGINA PECTORIS.

BY PROFESSOR THEODOR SCHOTT, M.D.

AMONG chronic diseases of the heart angina pectoris has in the passing century attracted the interest of the medical profession in a remarkable manner. Ever since the first excellent description by Heberden appeared more than 100 years ago the various theories advanced as to the nature and the causes of stenocardiac accesses have been in sharp opposition. This may be explained in great part by the fact that, as Latham justly remarks, angina pectoris must be regarded not as a disease *sui generis* but as a series of symptoms. Even, however, in regard to angina pectoris vera—to which the following observations are exclusively directed—opinions still remain unsettled and divided. The hypothesis of Heberden and of Latham that the anginal fit is to be regarded as a real tetanic contraction of the cardiac muscle has found at different times a varying number of adherents. A tetanic cramp of the whole cardiac wall would, if it prevailed but a short time, certainly destroy human life; but a tetanic contraction of a part of the heart might take place without deadly result, as has been demonstrated latterly by experiments of Basch and Grossmann. In direct opposition, however, is the theory of Parry which has been effectively supported by the celebrated Stokes. According to this opinion angina pectoris must be attributed, not to an increase but to a further reduction of the muscular energy of a heart already enfeebled. According to Parry the stenocardia is a sort of syncope with a preceding strong oppression or pain in or near the heart, the consequence of an organic lesion the effects of which are brought into evidence by a lowering of heart power. Thus Parry opines that the symptoms are caused by an accumulation of blood in the cardiac cavities. This explanation has been powerfully supported in Germany by the well-known Professor Traube, an authority on the subject of heart diseases. Traube also believes that there is loss of power of the heart muscle, but he thinks that the access results from a rapidly increasing tension of the walls of the ventricles under the influence of an accelerated over-filling of the cardiac cavities, in consequence of which the motor as well as the sensor nerves of the heart respectively are subjected to a degree of pressure or tension sufficient to account for the sudden pain. Samuelson, whose experiments are founded upon an artificial constriction of the coronary vessels, differs from Traube only in that he supposes the over-filling of the heart to take place, not in the left ventricle but in the right auricle. French physicians, such as Potain, Germain Sée, and others, attribute the attack to an ischæmic state of the cardiac muscle, attributing the pains to causes similar to those observed when there is a blocking of the arteries as in endarteritis obliterans and in similar processes. But the ischaemic state of the cardiac muscle may be taken to induce a weakness of the organ, so that this theory agrees in the main with that of Parry and Stokes. Although the latter view commands a majority of adherents—as may be gathered, for example, from the opinion expressed at the meetings of the London medical societies—it has always found opponents as at the Congress of Internal Medicine at Wiesbaden (1891) where Vierordt, one of those who opened the discussion, revived the question whether the stenocardiac fit is really dependent on debility of the heart. The principal argument for that doubt is that the pulse does not of necessity show any corresponding change—that there may be no diminution of volume—that in some cases, indeed, it becomes stronger. Another argument is that manifest signs of weakness of the heart are not invariably discoverable.

Before we discuss these theories let us consider what processes are found to be associated with angina pectoris vera. They are, in the first place, sclerosis of the coronary vessels, alterations of the aortic valves, and aortitis, especially that form which causes an ectasia of the ascending portion. (In a case of angina pectoris combined with insufficiency of the mitral valve which has been under my treatment these three years I observed latterly the development of an aortic stenosis; so that also in this case, though there are no signs of rigidity of the vessels, the sclerotic process at the heart cannot be regarded as doubtful. I may add that latterly I have seen several similar cases.) It is known, however, that the sclerotic change in just this part of the aorta is not without an influence on that spot from which the coronary vessels take their origin, and not seldom it may be noted post mortem that, though the other parts of the coronary arteries still show a sufficient lumen it is reduced at the point referred to in such a degree that a bristle can scarcely be introduced. The next consequence of such an arterial change must be that as a result of decreased circulation the muscles of the heart are no longer adequately nourished. Weakening of the heart and defect of energy follow of necessity. Moreover in the stenocardia of angina pectoris vasomotoria—the pseudo angina resulting from so many different causes may be left aside—the heart is called on to exert itself against a contracted arterial system, so that in such cases, also, there is a sufficient cause for a sudden relative weakness of the heart. The conditions calculated to induce a weakening of the heart are apparently present in both instances, and it is easy to understand that every demand for additional effort is likely to be followed by an additional, as well as sudden, failure of energy. The suddenness of the paroxysm may be also directly attributable to the retardation of the circulation within the coronary vessels. A moderate distension of the cardiac muscle may easily lead to a temporary occlusion of one or more coronary vessels at the seat of an already existing constriction. In other cases a thrombus or an embolus are the cause of the block, and we know that such vascular conditions give rise to violent as well as sudden pain in other parts of the muscular system. The experiments of Samuelson, of Cohnheim, of Schultess-Reihberg, and of many others have furnished sufficient evidence of this.

Let us now inquire whether clinical observation lends confirmation to what has been suggested. I restrict myself to my own experience, and I would in the first place

emphasise the fact that I never could observe any absolutely characteristic or invariable condition of the circulatory system before, during, or after the accesses. Let us look first to the state of the pulse. For that purpose we must not entirely depend on digital examination—we must have recourse to the sphygmograph and the sphygmomanometer. How often do we recognise by means of these instruments that, for instance, a bradycardia, which actually exists in some instances, is in a number of others only apparent, and that the sphygmograph discloses a number of pulsations which are not appreciable by the finger so that the apparent bradycardia may be an actual tachycardia. In other cases we meet with a real tachycardia or an intermittent or arhythmic pulse. That the volume of the pulse very often appears reduced is well known. With a large number of patients I have noted reduction of the pressure of the pulse during the attacks. The latter observation is especially applicable to the pulsus celer, the tension of which is frequently apt to lead to mistakes.

We will now proceed to the examination of the heart itself. In the earliest stages of this cardiac disease it is frequently very difficult to certify to difference in the strength and character of the heart's sounds in the intervals between the attacks as compared with those of unimpaired health. There are other cases in which the contrast becomes rapidly apparent. It will not, however, escape the attention of a practitioner who has occasion to observe such patients for a long period that heart-sounds become feebler during the fits; in other cases the sounds become dull or impure and distinct murmurs are observable, and not rarely I have convinced myself that the rhythm assumes the character of a gallop. Less frequently the beatings of the heart become fœtal or fluttering.

Evidence still more demonstrable may be obtained by percussion.[1] The limits of dulness have been accurately traced with a solution of nitrate of silver. The following may be observed more or less definitely according to the progress of the disease. In the beginning there is a moderate dilatation which affects especially the left side. For a time the left auricle may be more distended than the corresponding ventricle. If the malady advances the heart becomes more and more distended; the right side becomes involved, but the left ventricle remains more permanently dilated until finally the whole heart is and remains enlarged. In such cases—that is, those in which the limits of the heart fail to recede to a normal state—we note that with the stenocardia there co-exist the other indications of a cardiac dilatation with consequent incompetence, such as breathlessness, &c., but the characteristic feature which is attested by percussion at the beginning of the disease is debility of the left heart. It has been a satisfaction to me to be able to confirm these results of percussion by means of the x-rays, which supply an important additional resource for physical examination. I had an opportunity last year when I made a number of experiments with Roentgen rays in cases of cardiac muscular diseases, not only to examine with the fluorescent screen but to take a radiogram of a man 40 years of age at the very moment in which he became subject to an anginal fit. This patient had in former years consumed quantities of beer and of effervescent waters. Seven years ago he was visited by his first attack of gout. Since that time he has had frequent attacks of podagra and gonagra. The last one took place a fortnight before the examination in question. At the left elbow, for some weeks, a tophus had been apparent. The first attacks of oppression were felt while bicycling; later, palpitations and breathlessness were induced by over-exertion. Within the last few months the oppression in the chest increased and was accompanied by radiating pains in the left arm and fingers. The stenocardiac fits were most observable in cold weather, especially during the prevalence of cold winds and fogs, so much so that he was brought to a standstill in the streets. Latterly his medical adviser was able distinctly to note a cardiac dilatation. The urine had a specific gravity of 1015 and showed a trace of albumin but no casts.

In a former paper[2] I drew attention to the fact that with the help of leaden discs fixed to both the nipples, we are able to ascertain whether the patient has maintained under examination the same distance from the photographic plate (as well as from the fluorescent screen) to the Roentgen tube. It must be especially noted that the anginal attacks are readily excited by bodily exertion and by mental excitement. A somewhat accelerated pace, the ascent of even a slight incline, even the act of turning round in bed or breathing in cold wind or fog may suffice to cause a stenocardiac fit, acts which, however insignificant they may be, require a somewhat increased effort on the part of the heart. Under favourable conditions and especially in a state of absolute rest these accesses generally soon subside. The etiology of the affection is too well known to need special description, but it must not be forgotten that inheritance plays a prominent part in the causation of this disease. I myself have observed a good number of cases in which several individual members of one family have suffered from angina pectoris.

It now remains to consider the therapy of this disease, and in doing so we shall, I think, discover from further evidence the correctness of the Parry-Stokes theory. Setting aside prophylaxis the treatment may be considered under two heads—viz.: (1) the therapy of the anginal fit itself; and (2) the treatment of the heart in the intervals between attacks. The actual paroxysms are most efficaciously relieved by the nitrites, and on that subject the publications of Sir William Broadbent, Sir T. Lauder Brunton, &c., are so well known that I scarcely need to enter into further details. Nitro-glycerine is in most cases superior to the nitrite of amyl, as its effect is mostly more prompt and intense. I decidedly prefer the liquid form to the tabloids on account of the more rapid effect and the facility of accurate dosage, but we know that inhalations of the nitrite of amyl prove successful in some cases in which nitro glycerine fails to relieve. My experience of the use and value of the tetranitrate of erythrol is not sufficiently extensive to justify the expression of a decided opinion. Nitro-glycerine in suitable cases frequently produces striking effects, but without doubt its application requires much caution and experience and constant medical supervision, as, in default of these safeguards, collapse is only too likely to occur. Antipyrin, formerly much used by the French and especially by Germain Sée, has more and more lost its advocates, not only because of its more or less questionable efficiency, but also on account of its being a source of some danger to the patient. The paroxysm of pain may also be relieved by the application of external measures such as friction with spirit of wine (I prefer hot spirit of wine with an addition of salt), mustard spirit, or the application of mustard leaves, &c. But most efficacious have I found the application of heat, and for that purpose I have designed a special india-rubber bag provided with a thermometer in such a manner that the temperature of the water may be measured and regulated at any moment. Moving the bag at a temperature of from 140° to 170° F. with light touches over the whole chest effects, in a good number of cases, either marked relief or the absolute suppression of the pains.

In a number of cases, however, we must expect to be disappointed by the above-mentioned remedies and be prepared for the pains to become so intense that we shall be forced to have recourse to narcotics. Before all others stands morphine, but even where it becomes indispensable it is advisable not to bring it into continuous use. It is preferable to give single considerable doses and, if necessary, to administer it subcutaneously. The injurious effect on the heart of the prolonged use of morphine may be regarded as generally admitted. In iodine we have a medicament which is to be used as well during the fits as during their intervals. As all salts of potassium are more or less detrimental to the heart, and as in cases of angina pectoris vera we have to apprehend a failure of power, I always prescribe the iodide of sodium, which in view of the irritating effects of salts of iodine on the mucous membranes, including that of the digestive organs, is best exhibited in milk. In a series of cases it has proved very useful even where no antecedent syphilitic taint existed; in others it was not followed by good effect, but this remedy also ought not to be given for a long-continued period and particularly not if given in increasing doses. Especially will it be necessary carefully to watch the weight of the body, as all the salts of iodine are apt to destroy the molecules of albumin and thereby to cause more injury than any benefit that can accrue.

In the intervals of the attacks and indeed often in the course of the attacks we must take measures to stimulate the heart and to strengthen it. As stimulants we especially

[1] I avail myself of the method of my late brother, August Schott—that is, a percussion with limitation, by which we are enabled to percuss the anatomical limits of the heart. This is a fact which amongst others I have often demonstrated before several medical officers of the Maison de Santé at Berlin.

[2] Deutsche Medicinische Wochenschrift, 1897.

commend ether or camphor and the salts of caffeine. Among the latter I desire to express a caution as to the use of iodio-salicylate, because I have observed that marked relapse is apt to follow the use of that remedy, whereas the sodio-benzoate and the citrate appear to be exempt from that drawback. It is a well-known fact that digitalis fails to relieve much more frequently in cases of angina pectoris vera than in many other diseases of the heart. This applies as much to the uncomplicated forms caused by the sclerosis of the coronary vessels as to those which are combined with aortic valvular lesions or aortitis. We must not, however, undervalue its usefulness to such an extent as has been done latterly in different directions, for, though the pains be little or not at all influenced by its use, we often succeed in obtaining a beneficial effect from this important drug in cases of heart disease. Still less must we rely upon strophanthus which too often is ineffectual; and still less can we trust to inferior remedies such as convallaria majalis, adonis, and such like remedies which need scarcely be mentioned.

In such cases as we are now considering physical therapy proves its value in a most satisfactory way, and the tonic effect of the balneological and gymnastic treatment as described by my late brother and myself becomes most evident. I abstain from recurring to the details of our system and only lay stress upon the importance of much caution in the application of the baths as well as the therapeutic exercises. I would especially express a warning against hurrying on to strong effervescent baths and especially to the strongest form of the effervescent running baths. Besides, more harm than benefit would be derived from baths either too cool or too warm. Very rarely are we allowed to go below 85° or to rise above 93° F., nay, even from a temperature of 95° I have now and then observed unfavourable effects. Moreover a long immersion is not advisable. I mostly limit it to the space of 15 minutes and rarely extend it to 20 minutes. Similar precautionary measures are to be observed with regard to exercises. The resistance must not be very strong, the pauses between the exercises must not be too short, and the patient must never be suffered to exert himself till fatigued. A sufficient interval of rest after the exercises is under all circumstances important.

In a series of articles I have shown in past years the results of the balneological and gymnastic treatment especially in cases in which rest as well as pharmaceutic remedies proved useless. Recently their efficacy has been attested by many authorities. In response to inquiries lately addressed to me I should be glad to state that the treatment by baths and exercises has proved to be of signal success even in cases in which the nitrites, and principally nitro-glycerine, had more or less failed. I would especially refer to a treatise by Rives.[3] Rives had the opportunity of observing at Nauheim a patient who was under my treatment and had been sent to me by Sir T. Lauder Brunton. He came from Karachi, was aged 53 years, and was subject to so many stenocardiac fits that in the first few days of his stay at Nauheim he was obliged to have recourse to as many as 20 tabloids of nitro-glycerine a day. A treatment of 13 weeks caused all symptoms not only to disappear but resulted in a general state of well-being. It deserves to be remarked that this patient continued to enjoy good health until great mental strain induced by the ravages of the plague in his town subjected him again to slight attacks. A renewed treatment in Nauheim of seven weeks in the spring and of five weeks in autumn again had the effect of removing his troubles so that Sir T. Lauder Brunton, on the return of the patient, was able to certify a perfectly normal condition of the heart. I must not omit to mention that with such patients it is necessary to adhere to the same precautionary measures as to diet, exercise in fresh air, dress, &c., as are to be observed with other patients with heart diseases, such as failure of compensation in consequence of valvular lesions, and in myocarditis, &c.

It must, however, be clearly stated that not all cases without exception are suitable for balneological and gymnastic treatment. When arterio-sclerosis has made such progress that the danger of embolism or apoplexy may be apprehended, or where there is reason to believe that there already exists even a small aneurysm of the wall of the heart or the aorta which might favour rupture, it is well known that every increase of the blood-pressure, which is a natural consequence of the above treatment, might lead to the fatal consequences. Rigidity of the vessels or early stages of arterio-sclerosis may be treated by these methods and usually yield satisfactory results, but I must lay stress again upon the fact that advanced sclerosis is a contra-indication for this treatment. As regards the latter state I have raised a note of warning years ago,[4] and my later experience has only strengthened my view on the subject. In such cases strict enforcement of rest is certainly preferable.

Looking, in conclusion, once more at the actual state of our therapeutic experience we are brought to the conclusion that the results which we obtain by the application of the above-mentioned more prominent medicaments is to be explained by the lowering of the pressure of the blood and the moderation of the heart's action consequent upon it. Differing therefrom are the causes which ensure success in the balneological and gymnastic treatment because it is obtained by the exercise of a tonic influence. By strengthening the heart's muscle, as well as by acting on the cardiac nerves, the distressing symptoms of the angina pectoris are either removed or reduced; in other worde, *ex juvantibus*, it is shown that the Parry-Stokes theory is based on a real and solid foundation.

Bad-Nauheim.

[3] New York Medical Journal, 1896.

## SOME REMARKS UPON THE TREATMENT OF HEART DISEASE, WITH SPECIAL REFERENCE TO THE "HILL HEART."[1]

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IN the treatment of most forms of heart disease the difficult problem of how to relieve an organ which has such constant demands made upon it, and which is obliged to rest and recuperate in the brief intervals allowed between its active contractions, is met in one of two ways, the one being the stimulation of the heart, so that by working harder and more efficiently, it may compensate for its own defectiveness, and the other the lessening of the work that the organ has to perform, so that the balance of demand and supply of force may be restored and maintained. In most cases of valvular disease with failing compensation, we of course adopt the two methods of excitation and compensation both at once, combining the exhibition of cardiac stimulants, such as digitalis, strophanthus, convalaria, sparteine, or caffeine, with the diminishing of cardiac work by ordering rest in bed, and the lowering of blood-pressure by the judicious use of purgatives, diuretics, &c.

In the special methods adopted at Nauheim, the same combination of stimulation with alternate lessening of work, explains the marked success of this form of treatment in suitable cases. The effect of the Sprüdel water at a temperature of 95° and charged with carbonic acid, is to cause the peripheral vessels to contract and the blood-pressure consequently to rise, as evidenced by the slowing of the pulse. The result is that the heart has more work to do and therefore has its muscle stimulated to more forcible and complete contraction, with the consequent more thorough emptying of its cavities. After leaving the bath the peripheral vessels dilate, the blood-pressure is lowered, and the resulting diminution of the work the heart has to perform, enables the muscle to maintain its increased state of efficiency. Exactly the same sequence of events occurs with the resisted movements, for here again the first effect is to cause a rise of blood-pressure, shown by the slowing of the pulse, while the second effect of dilatation of the vessels of the muscle lowers blood-pressure and therefore lessens the strain upon the labouring heart. In this respect it is interesting to note that Dr. Schott has demonstrated by the use of the Roentgen rays that the more complete emptying of the heart and the consequent reduction of dilatation under this treatment, is an actual fact and is

[4] THE LANCET, May 23rd, p. 1143, and May 30th, 1891, p. 1199.

[1] A paper read before the Yorkshire Branch of the British Medical Association on March 28th, 1900, at Huddersfield.

not to be explained by better filling of the lungs and consequent diminution of the area of cardiac dulness. The good results of Oertel's method of graduated walking exercises by slow movements, first on the flat and then up inclined planes, are capable of a similar explanation.

All these methods, however, to be successful must have a heart to work upon which has muscle substance capable of either exerting more force under increased stimulation, of increasing its power of contraction as the result of its hypertrophy if the conditions are favourable, or at least of recovering itself if nutrition is abundant, and partial rest gives it time for recuperation. The cases which, from the point of view of treatment, present the most difficulty are those in which, from whatever cause, the muscle substance is degenerated to such an extent that it is unable to react to the means employed for its relief. In such cases, whether the condition is the last stage of disease of the aortic valves, of failure of the right ventricle in old emphysema and bronchitis, or of the left ventricle in granular kidney, all that can be done is to acknowledge that the heart is no longer able to maintain an efficient circulation of the blood in the adverse circumstances in which it is placed, and to endeavour permanently to lessen the work it has to do—that is to say, to alter as far as possible the relationship between the general system and the heart in such a way that the patient may, for a longer or shorter period, enjoy an impaired but still tolerable degree of comfort and health.

There is another class of case, however, and one which is especially common in hilly districts, where there is also no valvular disease, but where the heart muscle is degenerated to an extent which, though not sufficient to incapacitate the patient from following his ordinary avocations or, as a rule, to produce any backward pressure effects, yet, when any sudden strain is thrown upon it, or any interference with its free movements is encountered by it, is apt to give rise to alarming and dangerous attacks. These may only cause distress, dyspnœa, or anginal pain, or they may induce syncope, or even lead to seizures of an epileptiform or apoplectiform character, and may, and not infrequently do, terminate in almost sudden death. The following brief extracts from my notes will serve to point out the main features met with in these cases.

CASE 1.—The patient was a bachelor, aged about 70 years, who had always enjoyed good health, but for the last few years had been unable to walk upstairs so well as formerly and had often had to stop and rest on going up hill. His appetite was good and sleep was not disturbed. During the week before his medical attendant asked me to see him he had had repeated attacks of acute cardiac distress with faintness and a feeling of impending dissolution. He had only been under treatment since these attacks commenced. There was no valvular lesion; the heart beat was fairly forcible and the pulse was regular and not of high tension. All the other organs were healthy. There was no albumin in the urine. During the previous week the patient had suffered from a great deal of flatulence. For two days after seeing the patient there was no attack, then one came on which proved immediately fatal.

CASE 2.—The patient was a man, aged 58 years, who was first seen in May, 1896, and who for several years had had flatulent dyspepsia. On two occasions he had had severe fainting attacks followed by a feeling of great exhaustion necessitating rest in bed and treatment for some weeks. The bowels were confined. The patient looked older than his years and had an anxious expression. He was fairly well nourished, though he stated that lately he had been eating very little in the hope of diminishing the flatulence. On going up hill he often had to stop, not from dyspnœa, but from a feeling of oppression on the chest associated with what he described as a "beating" in the stomach. The heart was considerably enlarged, the apex beat was feeble and somewhat diffused, and the pulse was of low tension and very irregular; no bruits were to be heard and all the other organs were healthy, except the stomach, which was dilated. On a light but nourishing diet and general tonic treatment the patient improved and two months later was put upon sparteine sulphate and nitro-glycerine. The next time I heard about him was nearly two years later when, after a long period of comparative comfort, during which he had not required treatment, he had become careless as to his food and mode of life with the result that all his old symptoms returned. On this occasion it was decided, since the condition was of much shorter duration than on the former one, at once to make use of cardiac tonics and he was given a pill of sparteine sulphate, digitalis, and extract of hyoscyamus once a day. Creasote in mixture was ordered to be taken immediately before meals and he was again put upon a strict diet and directed to move about slowly. 18 months later when seeing another member of the family I casually saw the patient who looked well and said that as long as he was careful he got on all right, a statement that his medical adviser confirmed, but that any small indiscretion upset him.

CASE 3.—For purposes of comparison I may briefly mention the following case. The patient was a man, aged 25 years. Until recently he had been accustomed to be in constant training and to spend most of his time in athletic sports; lately, however, he had given up athletics and had very little exercise. In the course of the previous two weeks he had had three syncopal attacks. He was a healthy-looking, well-developed, well-nourished man. All organs were normal except the heart which was enlarged, with a feeble diffused impulse, a prolonged first and a somewhat accentuated second sound. The pulse was 75 and was feeble. In this case the condition was evidently one of a "soft" heart—that is to say, of a heart in which the muscle, which during training had become hypertrophied to meet the increased strain put upon it, had when the strain was relaxed become flabby. I have not heard from this patient's medical man what the further history of the case was, but I have no doubt that the condition proved to be a purely temporary one.

CASE 4.—In the last case that I propose to mention the patient was a man, about 65 years of age, who had had a similar attack to the one for which I first saw him, some months before. He was a stout, florid man, had always been temperate, and had had remarkably good health all his life. One night he went to bed in his usual health, but early on the following morning he had an attack which was of a convulsive nature but of short duration. When his medical attendant saw him shortly after the attack he had a bounding pulse and was only semi-conscious, with suffused head and face. His medical attendant performed venesection to ten ounces, after which he improved rapidly. At 2 P.M. on the same day, when we saw him together, there were no localising symptoms, he had completely recovered consciousness, and except for headache did not feel as though there were much the matter with him. The treatment consisted in dieting and the administration of nitro-glycerine, under which he soon got about again, but almost every week he had a slight attack which his medical adviser said was not unlike minor epilepsy, but he, however, never lost consciousness. These attacks were specially apt to come on after any excitement or after a full meal. The heart was enlarged and the first sound was thick, but there was no valvular disease. The patient continued in much the same condition until December last, when he had a rather more severe attack, though still without loss of consciousness. The pulse was lower in tension but otherwise the condition was unchanged. Shortly afterwards he had a similar attack which proved fatal.

I have introduced the third case because it explains, I think, why in hilly districts one so frequently meets with the condition illustrated by the other three cases. The history of these cases, I take it, is as follows. A healthy man who is constantly having to go up and down hills, working hard, eating probably somewhat largely, the food, moreover, not always being very easy of digestion, develops cardiac hypertrophy and slight gastric dilatation. As time goes on he probably becomes wealthier and hence most likely takes less exercise, whilst at the same time his food is liable to be richer, although in quantity not materially diminished. If at the same time alcohol be at all freely indulged in, all the circumstances are present which tend to produce dilatation of the stomach and degeneration of the heart walls, the hypertrophied muscle becoming soft and fatty changes occurring in the cells. The stomach, too, which has bravely battled for years with the somewhat large supplies which it has been made to hold, now begins to lose tone and stretch. At the same time the peptic and especially the oxyntic cells become less active and fermentative changes are apt to occur in the food owing to its lying too long in the atonic organ, with the result that gases are evolved which still further tend to increase the distension. There is probably, too, less room for the stomach to expand downwards than was previously the case, and it therefore when distended pushes up against the heart, which, degenerated as it is, can but ill cope with any more difficulties than it already constantly has to

surmount. The whole result is that the heart's action becomes tumultuous, irregular, or imperfect, according to the degree of degeneration which is present in its walls, and the patient experiences a feeling of distress which may proceed no farther or which may lead to so-called lipo-cardiac asthma, or syncope, or to epileptiform or apoplectiform attacks, any one of which may be more or less suddenly fatal. In cases where the heart muscle, though degenerating, is still able, for at any rate a short time, to respond to the increased excitation, the beats become very forcible and laboured, whilst the intravascular tension is raised and the return of the blood to the heart is interfered with. Under such circumstances there may be increased intracranial pressure, and epileptiform or even apoplectiform attacks with more or less profound unconsciousness may occur. In the latter case the breathing may become stertorous and the whole appearance may be strongly suggestive of cerebral hæmorrhage, but if the patient survives a few hours will generally suffice to show the true character of the seizure, for as a rule the attack is of but short duration and there are either no localising symptoms or if there be any muscular weakness it very soon passes off.

As regards treatment, if the disease be in an early stage cure may probably be effected by the absorption of fat and the hypertrophy of the muscle cells, but if the condition be more advanced the treatment presents much difficulty, for whilst almost every case needs its own special line of treatment it is frequently by no means easy to determine what will be beneficial in any individual case. The first requirement always seems to me to be, that the stomach should be treated by strict dieting as well as by gastric antiseptics, such as sulpho-carbolate of soda, creasote in mixture, or salicylate of bismuth, or if necessary by lavage. Further, it should be insisted on that the meals should be taken practically dry, the necessary quantity of fluid being drunk when the stomach is empty. In addition, some saline aperient such as Hunyadi Janos or Apenta water should be taken with a glass of hot water before breakfast. Later artificial digestants, mineral acids, gentian, strychnine, capsicum, &c., are of service, but it always seems to me that the first need is to clear the stomach and to attempt by preventing distension to reduce its size. As regards the heart itself, the most important thing is to diminish its work, and this may often be accomplished by making the patient rest in bed with a restricted diet, and by the regular exhibition of trinitrin or in rare cases erythrol tetranitrate. The milder cases do not, I think, need to be kept in bed if they can be trusted to move about slowly and to obey directions as to diet. Where the attacks are epileptiform or apoplectiform in character a more marked lowering of blood-pressure by diuretics and free purgation by salines and even sometimes by venesection is advisable. Alcohol, except for sudden emergencies, is, I think, better withheld, or if it be allowed it should only be taken in small quantities with meals. As regards the direct stimulation of the heart I have had, I think, the best results with sparteine sulphate combined with citrate of caffeine. In cases where the heart is rapidly failing beneficial results may sometimes be induced by administering full doses of strophanthus every hour for from 12 to 24 hours and by the inhalation of oxygen over the same period; but unfortunately in most of these cases where once the left ventricle has dilated to any considerable extent it is a sign that the unequal contest will soon be given up for good. When the seizure is over, however, the most important part of the systematic treatment must undoubtedly be directed to the stomach if future attacks are to be prevented. In most, or at any rate in a large number of cases, when they come under observation the stomach is found to be markedly dilated, and without question the onset of an attack, whether simply of distress, of dyspnœa, or of a more serious nature, is in the large majority of cases associated with flatulent distension of that organ.

"Hill heart," as this condition may be named, differs from fatty degeneration of the heart as generally described in that there is in the "hill heart" antecedent hypertrophy and consequently a greater liability to the apoplectiform and epileptiform kind of attack, both being associated with a temporary increase in the blood-pressure. The resulting high tension is thus due to a conservative constriction of the peripheral arteries and a resulting more forcible action of the heart when its movements are interfered with by a distended stomach or other cause. This, of course, to a considerable extent modifies the treatment and necessitates a variation in the methods to be employed according to the stage to which the disease has advanced.

With regard to the reflexly excited tumultuous movements it must be remembered that Gaskell, Morison, and others have shown that, contrary to what used to be taught, the whole of the heart substance is abundantly supplied with nerves. Further, as Morison has suggested, it is not improbable that simple hypertrophy with consequent stretching of the intermuscular nerves may, when only slight extra work is thrown upon the heart, cause slight increase of the tension on the nerves sufficient in itself to cause excitation of them, and so the origination of irregular contractions of the muscle, and thus the production of anginal pain.

I have only attempted to deal in some detail with fatty degeneration of the heart, with special reference to degeneration following hypertrophy but without valvular lesion. With such difficult subjects as the treatment of mitral stenosis, of uncomplicated aortic disease, of the sleeplessness of both aortic and mitral disease, and of the vomiting of mitral and tricuspid disease, I have made no attempt to contend, for each one would need a separate paper of its own if justice were to be done to it. Nor have I discussed the value of opium, of iodide, of arsenic, and of mercury in certain heart states, the heart conditions associated with septic disease, the toxic effects of alcohol and tobacco, syphilis, or the fatty degenerations resulting from too large or too long-continued doses of such drugs as phosphorus and arsenic. Finally, if I have perhaps insisted too much upon the danger of overloading the stomach when the heart is diseased I have only copied Shakespeare, who truly realised the importance of the matter when he made Macbeth say to the doctor who was treating Lady Macbeth:—

> "Cure her of that;
> Canst thou not minister to a mind diseased,
> Pluck from the memory a rooted sorrow,
> Raze out the written troubles of the brain,
> And with some sweet oblivious antidote
> Cleanse the stuff'd bosom of that perilous stuff
> Which weighs upon the heart?"

Bradford.

## TRACHEOTOMY WITH ANTITOXIN IN LARYNGEAL DIPHTHERIA.

BY W. BLAIR BELL, M.B. LOND., M.R.C.S. ENG.

IN spite of all the personal evidence and in spite of statistics there is still a lurking suspicion in the minds of some medical men and an absolute assuredness on the part of the laity who are of the anti-vivisection persuasion that the antitoxin serum has not fulfilled expectations. Those medical men who are still in doubt must have used it injudiciously—that is, too late or in too small doses, or only in the severest cases, or possibly not at all. Those of the laity who are waging a wordy war against its efficacy cannot have had the opportunity of being grateful to it for its curative action on themselves or those near and dear to them. I have used it continuously in all cases for the last four years and in my limited experience in my own practice I can say that I have not lost a single case directly from the disease. One patient died suddenly from heart failure associated with pneumonia nine weeks after tracheotomy had been performed, but beyond the cardiac weakness following the diphtheria one could hardly attribute the result to that disease. I had also to be personally thankful to it during a recent attack of diphtheria. It is not my intention to dilate on the use of the antitoxin beyond stating that the ordinary dose of 1500 units is quite inadequate for severe cases; and I now never give less than 3000 units for an initial dose, and do not hesitate at 8000 units for any patient over 12 years of age.

The following are notes of three consecutive cases of severe laryngeal diphtheria in which I performed tracheotomy last year. They were the only cases which required the operation, for others which I had during that period yielded to the antitoxin alone. I am convinced that the success attending the operations was due to the antitoxin given. A few years ago they would all probably have proved fatal. It would seem that the antitoxin loosens the existing membrane and prevents fresh membrane from forming, and

so in the severe cases tracheotomy will tide over the urgent dyspnœa while this is taking place.

CASE 1.—A fine fat infant, a boy, aged 16 months, was seen first on the afternoon of Feb. 20th, 1899. It was stated by his mother that he had had a sore-throat since the 14th and that he had begun to have a croupy cough on the 16th. The child was very blue, his pulse was 116 and feeble, and his respirations were 40 and very difficult. There were noisy râles all over the chest. The temperature was 97·4°F. The soft palate and tonsils were slightly congested, but there was no definite membrane to be seen (a swab taken at the time giving a negative result as regards the bacillus diphtheriæ). The glands in the neck were not much enlarged. A diagnosis of laryngeal diphtheria was made and, as the dyspnœa was obviously getting worse and the sucking-in of the supra-clavicular fossæ, intercostal spaces, and epigastrium was great, immediate tracheotomy was decided upon before the child should get worse, which seemed well-nigh impossible. 3000 units of antitoxin were injected and the operation was carried out, the child being anæsthetised with a small quantity of chloroform. Much membrane was obtained from the trachea and it seemed to have spread down to the bifurcation; this membrane subsequently gave a positive result when examined bacteriologically. A small silver tube was inserted. At the completion of the operation artificial respiration had to be performed for some time and three minims of ether were injected with one-sixtieth of a grain of strychnine before the child could be resuscitated. The patient's temperature rose during the night to 101°. At 10 P.M. 2000 more units of antitoxin were injected. Next day the child was very ill and restless with plentiful signs of broncho-pneumonia, and his temperature kept high. At 6.30 P.M. he had 1000 more units of antitoxin, and again the next day at 4 P.M. 1500 units more. The pneumonia gradually subsided and the child continued to improve steadily. On the 24th the silver tube was replaced by a soft rubber one, with which he was more comfortable. By March 2nd nothing but a little mucus was coughed through the tube. He had had a slight antitoxin rash and albuminuria, both of which had gone by this date. The child was so nervous that it was impossible to remove the tube permanently until the fifty-seventh day. Two days later he had an attack of lobar pneumonia in the upper lobe of the right lung with a rapid rise of temperature and he died suddenly the next day from cardiac failure. At the necropsy the larynx and trachea were found to be quite clear and the tracheotomy wound in the trachea was sealed up. The whole of the upper lobe of the right lung was engorged, and the heart was pale, flabby, and dilated.

CASE 2.—A well-nourished boy, aged four and a half years, was first seen at 2.15 P.M. on August 28th, 1899. He was lying very still. His respiration was 32 and difficult, he had a croupy cough, and in his chest were a few scattered râles; his temperature was 99° F. His mother said that he had had a sore-throat since the 25th and "croup" since the following day. 5000 units of antitoxin were injected as soon as possible. A swab was taken from his throat, which was very foul with much membrane, and this gave a positive result. In spite of the injection he got worse, so at 6.45 P.M. another injection of 3000 units was given. He still continued to go from bad to worse, his breathing getting very difficult and his colour blue, and there was great sucking-in above and below the thorax and in the intercostal spaces. At 10.45 P.M., therefore, tracheotomy was performed and a silver tube was inserted. Very little membrane was obtained from the larynx or the trachea. He passed a good night and his pulse-rate decreased, but his respirations stood at 36. He had slight albuminuria. I ordered one-sixtieth of a grain of strychnine to be injected daily. On the next day he seemed comfortable, but there was very little discharge through the tube, so he was given another 1500 units. Later he seemed very collapsed and he vomited a great deal, but got rid of much membrane through the tube and mouth. From this time he rapidly improved. The silver tube was replaced by a rubber one on Sept. 4th. On the 6th there was no albuminuria and the tube was permanently removed on the 11th. On the 25th the child was quite well and the wound was sound. He still remains in excellent health.

CASE 3.—On Nov. 17th, 1899, at 10 P.M., I was called in, in consultation with Mr. H. W. Lloyd, to see a boy, aged four years who, the mother said, had had a sore-throat for eight days and a croupy cough for six days. Mr. Lloyd had seen the patient for the first time two days previously and the swab he had then taken from the throat gave a positive result as regarded diphtheria, and consequently on the morning of the 17th he had injected 500 units of antitoxin. When I saw him the child had great difficulty in respiration, but as his general condition, colour, pulse, &c., were good, and as there was no marked sucking-in of the chest spaces I did not consider that tracheotomy was immediately called for, especially as he had had practically no antitoxin—for I do not consider 500 units of any use. Mr. Lloyd, therefore, at my suggestion, gave him 4000 units that night. I saw the child again on the next morning at 11.15 with Mr. Lloyd, when we found him much worse, his colour being dusky and the sucking-in of the thoracic spaces very marked. His pulse was 120, his respiration was 36, and there were râles all over his chest; he was very excited and restless. In the firm belief that one should always have a "bit in hand" as regards the condition of the patient in these cases and not leave tracheotomy to be used as a last resort, and as the child was getting worse and more rapidly so in the last hour or two, we decided that this operation should be done at once. Mr. Lloyd administered chloroform and I performed the operation with no difficulty beyond some extensive venous hæmorrhage from the very much engorged veins. At 12.15 P.M. the patient had another injection of 4000 units and again at 7.30 P.M. he had a further injection of 2000 units. I saw him on the two following days when he was rapidly recovering. He had an injection of one-sixtieth of a grain of strychnine daily. This I always think excellent as a cardiac stimulant. I did not see the child again as I contracted diphtheria myself from the case which developed four days after the operation, but Mr. Lloyd tells me that he removed the tube on the eleventh day and that the child made an uneventful recovery and is now well.

Since the danger of contracting diphtheria is mainly from the way in which the membrane is shot through the tube on to the operator when the tube is put in for the first time or when it is being cleaned daily, I have had made for me a small screen consisting of a circular glass plate (of the best thin plate-glass) which is one foot in diameter; this is fitted on to a Y-shaped handle of ebony and fixed by two pins which perforate the prongs of the Y, in which are slits for the glass plate, and holes bored in the glass. This allows the screen to be taken to pieces and cleaned. It is light and can easily be held by a nurse or assistant between the face of the person who is inserting the tube and the child's neck. It is only required at the moment of insertion.

Wallasey.

## A NOTE ON THE PATHOLOGY AND TREATMENT OF GASTRIC ULCER.

BY WILLIAM STUART-LOW, F.R.C.S. ENG.

THERE are few affections around which medical and surgical controversy has more strenuously striven than that of the pathology and treatment of gastric ulcer and with less profit either to the suffering patient or the puzzled and perplexed practitioner. Here pathology has failed to point the way to a proper treatment and therefore the therapeutics of gastric ulcer is still so much groping in the dark. A series of theories have been propounded, but each in its turn has failed to explain the malady or to serve as a foundation of a successful therapy. The clean, red, and sometimes angry or dry tongue, the clear, hyper-acid, non-mucous, and scanty vomit, and the constant constipation with the frequently dry scybalous stools certainly point to deficient secretion of the normal juices of the alimentary canal, but more especially to a deficiency of the mucous secretion—the natural protector and lubricator of the entire passage. Noting these and other features in the semeiology and the fact that many of my cases of gastric ulcer have been in patients suffering from the accompanying diseases of atrophic pharyngitis and rhinitis and amenorrhœa—conditions in which the pathology is admittedly clear and the dominating feature is that of a deficiency of mucous secretion—I have for some time been treating my cases of irritable stomach, painful digestion, and gastric ulcer with mucin with most satisfactory and gratifying results. I have had prepared for me through the offices of Messrs. Burroughs and Wellcome the mucin in powder form; they manufacture it from animal bile which contains it in large amount. It is

dark brown powder and almost tasteless and odourless and is therefore quite unobjectionable to swallow. This I give just before meals or rather as *hors d'œuvre* at the beginning of the meal in cachet form with an equal quantity (10 grains) of bicarbonate of soda. The good effects of this are markedly evident in the immediate alleviation of all painful sensations in the gastric region and in the establishment of regularity in the action of the bowels. That the constipation is relieved is a most important fact, and the value of mucin as an aperient is a great point in its favour as a therapeutic agent and of much interest physiologically. The diet of the patient is also carefully regulated and certain substances having a specially soothing and protecting action, such as animal jellies, calf's foot, mutton, and chicken jelly and thin cornflour, and the frequent use of a jujube of freshly prepared marsh-mallow, are allowed. I direct the feeding to take place every two or three hours, according to the severity of the symptoms. The *rationale* of this method of treatment is to protect the irritable gastric surface, and especially the ulcerated part, from attrition by the food and constant worry by the hyper-acid gastric juice—therefore the mucin is given first to form a gluey coating over the lining membrane, a kind of Unna's dressing is applied, and the surface is thus soothed and protected. If there is still any pain or uneasiness after nourishment then another cachet is given and thus the increased acidity is counteracted. The ulcerated surface on the stomach wall is treated just as an ulcerated surface on the body would be—it is protected from friction and by rest given a chance to heal.

Mucin is a compound substance, being composed of a proteid and a carbohydrate called "animal gum"; it is the principal constituent of mucus and is very widely distributed in the body, occurring in epithelial cells, goblet cells, and mucous glands. There are probably several mucins and they are all viscid and tenacious and precipitated by acetic acid and are dissolved by dilute alkalies. The contents of one cachet—10 grains each of mucin and bicarbonate of soda mixed in a glass with a little water and gradually heated to the temperature of the body—readily change into a sticky glue and this is the viscid solution that effectually protects the ulcer and the sensitive and inflamed gastric wall and regulates the bowels. The functions of mucin in the animal economy may be various, but one most certainly is that of the protection of the delicate membrane it pours over, not only from influences from without, but from the effects of other secretions as seen in the urinary and alimentary mucous tracts. We know that any injury to the healthy gastric mucous lining heals with marvellous ease and quickness because the wounded part is protected by the mucous present in the healthy state from the irritating influence of the gastric juice. And we also know that the gastric ulcers that bleed, as evidenced by melæna and hæmatemesis, are those that do not perforate but generally get well, as the effused blood no doubt takes the place of the deficient mucus and thus shields the ulcerated part and allows it time to heal over effectually.

Welbeck-street, W.

# A CASE OF DIFFUSE SUPPURATIVE PERITONITIS FROM GANGRENE OF THE APPENDIX; LAPAROTOMY; RECOVERY;

## WITH NOTES ON THE FREQUENCY AND MORTALITY OF PERITONITIS.

BY HENRY A. DUFFETT, F.R.C.S. ENG.

THAT disease of the vermiform appendix might be the cause of suppurative peritonitis was first recognised in 1827 by Louyer and Villermay,[1] but it was not till 1885 that Kronlein[2] performed the first successful median laparotomy for what was probably appendicular peritonitis. For though the perforation in the appendix was not itself found, fœtid and fæcal pus was found coming "mostly from the right side." This was followed in 1888 by two successful cases by Sands[3] and McMurty[4] by lateral laparotomy. Since then with modern methods of treatment, and recognition of the fact that laparotomy holds out the only hope for an otherwise hopeless condition, a considerable number of recoveries after operation have been recorded, though the mortality is still a terribly high one. In the causation of suppurative peritonitis the appendix holds a prominent place. Out of 47 cases due to all causes reported by Treves[5] 22 were appendicular in origin. The frequency of peritonitis occurring from disease of the appendix is estimated by Halliday[6] and Ryerson Fowler[7] at 14 per cent., and by Talamon[8] and Armstrong[9] at 8 per cent. It may occur either in the primary attack or in relapsing cases, and Fitz,[10] who has collected 256 cases of appendicular peritonitis, states that 11 per cent. of these occurred in course of recurrent attacks. Kraft[11] puts the frequency still higher at 25 per cent.

In a considerable number of cases (probably 25 per cent.) appendicitis is complicated by the formation of an abscess, and its rupture, flooding as it does the general peritoneal cavity with intensely infective material, is the most dangerous and fatal complication that can occur. In 30 cases of abscess reported by With[12] six burst into the general peritoneal cavity. Bull[13] has collected 67 cases in eight of which peritonitis was caused by rupture. The estimation of the mortality of "general suppurative peritonitis" is of considerable difficulty in consequence of the vagueness of the term "general" used in this connexion. Many of the cases reported are not so in reality, as Deanesley[14] has pointed out, but are merely large intra-peritoneal abscesses, and he thinks that the term cannot be fairly used unless (1) the pus extends as high as the umbilicus; unless (2) it occupies both flanks; and unless (3) it is limited by no firm adhesions. Barling[15] goes still further in thinking that the term should be restricted to those cases in which the subphrenic spaces are involved, as the pus is often limited by the transverse colon. If, however, we take it in its widest sense and include those cases of even limited intra-peritoneal suppuration apart from localised abscess, the mortality is still very high. Armstrong, Demoulin,[16] and MacDougal[17] estimate it at 60 per cent., Chauncy Puzey[18] and Hawkins[19] at from 75 to 80 per cent., whilst Barling[20] in his latest series of cases had the far better results of 35 cases and 21 recoveries, an average mortality of but 40 per cent. From the journals of the last five years I have collected 103 cases of general suppurative peritonitis in England treated by laparotomy with a mortality of 48 per cent. There can be no doubt that the early recognition of the presence of peritonitis is of the greatest importance. Every day's delay decreases the slender chances of recovery. Fitz out of 176 fatal cases found that death occurred in 56 per cent. in the first week and in 34 per cent. in the second, though probably the larger number of these and all that survived longer were but cases of intra-peritoneal suppuration well shut off. Of those that died in the first week 34 per cent. died within the first five days, and to save some of these it would have been necessary to operate within the first two or three days; but the difficulty of positive diagnosis and the hope that the peritonitis may become limited by adhesions will far too often prove an obstacle to early operation. The following case that has recently been under my care in the Seamen's Hospital, Greenwich, during the temporary absence of Mr. W. Johnson Smith, is of interest from the widespread distribution of the infection and the recuperative power that is so prominent in children. The history of the case is as follows.

A lad, aged 14 years, a boy at the Royal Naval School, Greenwich, was admitted to the Seamen's Hospital

[1] Archives Générales de Médecine, 1827.
[2] Archiv für Klinische Chirurgie, 1886.
[3] New York Medical Journal, February, 1888.
[4] Journal of the American Medical Association, July, 1888.
[5] System of Surgery, vol. ii., p. 612.
[6] Brit. Med. Jour. May 7th, 1898.
[7] Annals of Surgery, 1894.
[8] Appendicitis.
[9] Brit. Med. Jour., Oct. 9th, 1897.
[10] Talamon's Appendicitis.
[11] Ibid.
[12] Perit. Append. eller den ved Ulcern. og. Perf. af. Append Fremkaldte, Kjöbenhaven, 1879.
[13] Treves's Perityphlitis, 1898 ed.
[14] Brit. Med. Jour., Feb. 12th, 1898.
[15] Edinburgh Medical Journal, December, 1899.
[16] Archives Générales de Médecine, 1894.
[17] Edinburgh Royal Infirmary Reports.
[18] Herrold, Deutsche Medicinische Wochenschrift, 1894.
[19] Diseases of the Vermiform Appendix.
[20] Loc. cit.

on Oct. 2nd, 1899, for acute pain and distension of the abdomen. Up to this time he had been a robust and healthy boy and his previous history disclosed no features of interest. He had had no attacks of pain at all resembling appendicitis and no attacks of colic or diarrhœa. For two or three days previously to the acute onset of the disease he had been feeling out of sorts but with no definite pain. On Sept. 29th he was lying on one of the seats in the playground and some of his companions in play sat upon his abdomen. He was at once attacked with acute pain in the abdomen, chiefly, according to his description, about the umbilicus, and was taken to the sick ward in connexion with the school. On the following day, the 30th, he vomited frequently and could retain neither milk nor other food. The bowels were confined. The pain continued severe but with exacerbations. On Oct. 1st the vomiting still continued, the bowels were confined, and he was given castor oil which was at once rejected. Subsequently an enema was given, but with a negative result. During the day it was first noticed that the lower part of the abdomen was rigid and did not move on respiration. I saw him first on Oct. 2nd with Mr. G. W. Armstrong and with his consent he was removed with all care to the Seamen's Hospital. On admission at 1 P.M. he was somewhat collapsed but soon rallied. His face was pale and drawn and the conjunctiva were slightly icteric. The temperature was 104° F., the pulse was 130, weak and compressible, and the respirations were 30. He complained of great abdominal pain, but largely localised to the left iliac fossa. There was extreme tenderness all over the abdomen, which was rigid in its lower part. The tenderness was specially marked on the left side. Both legs were drawn up and any attempt to straighten them much increased the pain. There was no abdominal distension and no swelling or tumefaction. The lower half of the abdomen did not move on respiration. He was ordered frequent hot fomentations and peptonised milk in small quantities. The milk, however, was at once returned and the vomiting then continued at frequent intervals. The vomit was bilious in character and by no means feculent in odour. An enema was given but without result, but on repetition brought away some scybala and then nutrient enemata were given every four hours. During the night he slept at intervals, but was often awakened by the pain. He vomited at 2 A.M. and again at 6 A.M. when the vomit had a distinctly feculent odour. On the morning of the 3rd he was obviously much worse. The temperature was 101° and the pulse was 120, weak and running. The abdomen was distended and hard and rigid. Palpation showed extreme abdominal tenderness specially acute in the left iliac fossa, the patient flinching at the slightest touch. The right iliac fossa was not more tender than the rest of the abdomen. There was absolutely no abdominal movement on respiration. As there was no doubt that general peritonitis was present, though the exact cause was doubtful, I decided to open the abdomen. From 8 A.M. the vomiting had been most persistent, and about 10 A.M. became stercoraceous. He was also troubled with frequent hiccough.

All precautions against shock having been taken and Dr. R. W. Mayston having given chloroform I opened the abdomen in the middle line by a four-inch incision below the umbilicus. On incising the peritoneum about half a pint of most foul and fœtid pus at once escaped. I increased the incision slightly upwards, and on introducing my hand found no adhesions in any direction. The intestines were lying free and bathed in pus which extended over the whole abdominal cavity, above the transverse colon as high as the liver and behind the stomach. There was a large collection of pus in the pelvis. In the right iliac fossa there was, however, some matting of the parts, and from this mass pus could be seen coming from an aperture through which I could pass my finger. It seemed now certain that it was the appendix that was at fault. I thoroughly flushed out the abdominal cavity with large quantities of boiled water, clearing it as much as possible from the pools of pus that were lying amongst the intestines and passing the nozzle of the irrigator well up to the liver and behind the stomach where the pus had collected somewhat abundantly, and washing out from above downwards so that the fluid should run as much as possible into the pelvis. As I found that it would be very difficult to reach the appendix through the median incision I placed a large flat sponge over it and made a second incision parallel to and above the outer half of Poupart's ligament on the right side, and on opening the peritoneum a further quantity of foul pus escaped. The appendix was now easily seen lying free in an abscess cavity, and on introducing my finger the opening leading into the peritoneal cavity was at once apparent. The appendix itself was gangrenous with a ragged opening at its extremity. No concretion was seen, but it might have escaped with the pus. After ligaturing its mesentery I tied off the appendix as close as possible to the cæcum by a single ligature. The abscess cavity was then flushed out and the abdomen was again thoroughly cleaned with boiled water which flowed freely out from the iliac incision. The excess of fluid was mopped up and a glass Keith's drainage-tube passed at the lower angle of the median wound into the pelvis. The remainder of the incision was closed in layers with gut sutures. The iliac incision was drained by a strip of gauze and the remainder of the incision was closed. Both wounds were dressed with cyanide gauze.

The patient stood the operation well. The fluid that had collected was drawn off every hour and in this way about an ounce was removed, and on the following morning, as no more had collected, the tube was removed. On Oct. 3rd he was given small quantities of peptonised milk. There had been no return of the vomiting. Both wounds were dressed and lightly packed with gauze. There was some discharge from the iliac wound which was feculent in odour. From this time to the 11th the patient made most satisfactory progress. He had no pain in the abdomen which was supple and moved freely. The bowels were well moved on the 4th, 7th, and 9th, and the temperature never reached above 99° or the pulse above 80. He was given milk, beef-tea, and cocoa, and on the 7th a small piece of thin bread-and-butter. On the 11th, however, his temperature rose to 101° and on the 12th and 13th to 102°. The abdomen became much distended and the abdominal wound which had entirely healed gaped. The iliac incision which had healed all but a small sinus also gaped, and the discharge which had hitherto been slight and odourless became exceedingly foul. The patient complained of acute pain in the abdomen and vomited immediately on taking nourishment. The pulse became rapid (110) and he passed a motion in the bed. The abdomen was acutely tender to the touch, and again this was specially marked in the left iliac fossa. On the 14th he was again obviously very ill, the temperature reaching 102° and the vomiting continuing. As a copious enema did not relieve him I thought that there was probably some recrudescence of the peritonitis, so he was again anæsthetised and the original median incision was reopened. Though numerous small adhesions were present there was no sign of pus or lymph, but some matting was now found in the left iliac fossa, which had all through the case been the site of the most acute tenderness. I thought, perhaps, that there might be some localised collection of pus in this situation, and fearing to reinfect the abdominal cavity I made a fresh incision on the left side identical in position with the one on the right. Adhesions were plentiful here also, but no pus was discovered. The median and left incisions were completely closed. The sinus in the right iliac fossa was explored and carefully enlarged and a small quantity of pus was found here. This was packed with gauze. This second operation also was well borne. The following day the temperature dropped to 99° and remained between this and 100° till the 20th when it reached the normal. The wound in the left iliac region healed by primary union, but the median incision again broke down, healing rapidly, however, by granulation. The sinus in the right iliac fossa closed gradually. The patient rapidly improved in strength, was out of bed on a couch on the 31st, and was sent to a convalescent home on Nov. 29th with all three wounds soundly healed.

What the exact origin of the peritonitis was in this case is doubtful, I think, but I believe that it was due to the sudden flooding of the peritoneal cavity with foul pus from the rupture of an appendicular abscess. If this is the correct explanation it is extraordinary that the abscess produced no symptoms previously to its rupture. Another solution of the case might be that the appendix had been inflamed for some time, for as Matterstock[21] states, the prodromal symptoms in children may last for a long time with but such slight inconvenience that a boy would take no notice of them. A somewhat similar case has been reported by Cushing[22] in

[21] Gerhard's Handbuch der Kinderkrankheiten, 1880.
[22] Boston Medical and Surgical Journal, No. 24, 1886.

which the appendix was ruptured in an apparently healthy boy by slight injury, fatal peritonitis resulting. If this was so in my case the abscess could be explained by the fact that the appendix was the origin of the mischief and that the more intense inflammation was going on in its vicinity.

The complete absence of special tenderness over the region of the appendix was most marked in my case, the pain being transferred to the opposite side. Fitz mentions this as occurring in but 1 per cent. of his collected cases. The mass in the right iliac fossa I did not discover before the operation on account of the extreme pain that any palpation produced, or by palpation under the anæsthetic as the abdomen was distended. I very much regret that I did not examine the patient per rectum which I am satisfied should be an invariable rule, but my only excuse is that he was so ill that I did not wish to put him to further pain. I cannot but mention the devoted care and attention that Mr. H. H. Cotman, the house surgeon, and the sister in charge of the case bestowed on the boy, and it was very largely due to their skill that a successful termination can be recorded.

Sidcup.

## THE REMOVAL OF SEPTIC EFFUSIONS FROM THE CAVITIES OF THE HUMAN BODY.

BY EDWARD ARMITAGE, M.R.C.S. ENG., L.R.C.P. LOND., D.P.H. CANTAB.

THE writing of the following article was suggested to me by the perusal of an abstract of a clinical lecture on the Joint Affections of Gonorrhœa delivered at the Leeds General Infirmary on July 17th, 1899, by Mr. B. G. A. Moynihan and published in THE LANCET of Nov. 18th (p. 1349). It was with great interest that I read the above article, but I must confess to a feeling of disappointment on finding that, as the lecturer observes, "so far as treatment is concerned there is little that is new to be said." I had hoped to see a description of the technique of incision of the joint, particularly since the successful results published by Dr. J. O'Conor, of the British Hospital, Buenos Ayres, in THE LANCET of July 8th, 1899 (p. 93). To us general practitioners who practise our profession in the outer corners of the earth,—

> "Islands of the Southern Run
> And cities of Cathaia,"

the subject of gonorrhœa and its complications is one of overwhelming interest, for it is one of the diseases which is most persistently forced upon our attention and possibly that disorder which we find most difficult to treat satisfactorily, and this for two main reasons: firstly, the indifference and almost criminal carelessness with which the disease is regarded by those who acquire it; and secondly, the difficulty or impossibility of persuading one's patients to observe that amount of rest and freedom from disturbing influences which is so necessary a factor in the treatment of the disease in its early stages as well as for the prevention of the fearful complications which so often prolong its course. Almost does one feel constrained to agree with that eminent surgeon who was inclined to consider gonorrhœa as a more appalling disorder than syphilis, and certainly I have often recalled to mind during the course of my practice the despairing serio-comic exclamation of the great Frenchman, Ricord: "Si je dois aller en enfer, je sais le supplice qui m'attend; c'est de me voir entouré de blennorrhéens m'obsédant de leurs lamentations, de leurs instances, de leur geste significatif pour obtenir guérison."

Any contribution, however modest, which may suggest an alleviation of gonorrhœal or other septic affections of the body-cavities may therefore be considered worthy of a hearing, which is my apology for the introduction of the following cases from my note-books. With respect to the treatment of gonorrhœa and its complications I have no doubt that my medical brethren will agree with me when I say that amidst the shower of new remedies with which we are overwhelmed in these latter days of the nineteenth century—remedies principally distinguished by their termination in one of the suffixes, "ine," "in," or "ol," as also by their costliness—we are occasionally obliged to hark back to first principles and to cure our patient with some time-honoured remedy; it is, in fact, with such a one (one of our most highly valued drugs—namely, mercury) that I am particularly concerned in this article. Now whilst I fully believe that the ideal treatment of these cases of gonorrhœal arthritis is incision of the joint under strictly aseptic precautions, removal if necessary of altered synovial membrane, irrigation with sterilised solutions, and closing of the joint under aseptic dressings without drainage—still I know that in the majority of cases this is a course of treatment which for various reasons we are unable to carry out and therefore we are compelled to treat our patients by medical measures.

CASE 1.—The patient, a young white man, came to see me from the island of Hawaii on Dec. 21st, 1897. He had been suffering from gonorrhœa followed by cystitis to which had succeeded infective arthritis of the metacarpo-phalangeal joint of one of his fingers. He had been treated, according to his own statement, by hypodermic injections of morphia, *usque ad nauseam*, and having been under my care during the early part of the year for another complaint had taken ship to come to consult me. The treatment which I employed was as follows: for the cystitis a mixture containing sulphate of magnesia and soda with tincture of belladonna, also hot sitz baths; and for the gonorrhœa emulsion of salol, five grains of the drug three times a day. The affected joint was painted with a liniment of green extract of belladonna and glycerine and covered with medicated wool. On Jan. 2nd an application of unguentum hydrargyri compositum was made to the affected joint which was compressed by strapping, and this application, together with warm bathing of the joints and massage, was continued until recovery ensued. During the same month he left the island of Maui permanently cured.

In connexion with the above case I should like to observe *en passant* that to judge from my personal observation there are still a considerable number of practitioners who have failed to appreciate the value of that golden maxim, which I believe we owe to the Birmingham School, "Opium masks symptoms." Since in 1891 it was particularly brought to my attention by an eminent teacher of that school in connexion with a case of "volvulus" it has always been impressed on my memory, and frequently, particularly in cases in which the peritoneum has been involved, have I had to recognise its extreme value.

CASE 2.—The patient, a young white man, came under my care from Honolulu on July 14th, 1898; he had been undergoing treatment for a considerable time. Here the infective arthritis involved the right knee-joint, which was much swollen and very painful. The treatment, as in the previous case, was by emulsion of salol (from five to seven and a half grains) internally every four hours. The patient was confined to his bed and the pain was relieved by sedative applications. Later in the course of his illness the joint was treated with applications of unguentum hydrargyri compositum and a tonic mixture of iron, arsenic, quinine, and citrate of potash was prescribed in addition to the salol. On August 27th he returned to Honolulu, the result being a permanent cure after a somewhat prolonged convalescence.

CASE 3.—This patient, also a white man, came under my treatment on Sept. 7th, 1899. He had according to his own statement been treated by hypodermic injections of morphine to relieve his pain which during the acute stages of the disease had been intense. The arthritis in this case affected the left wrist-joint and at the time when the patient first consulted me had assumed the chronic form; but, to judge from his statement, the disease whilst in the acute stage must have been of a very severe nature. The whole of the great synovial sac of the wrist-joint was filled with exudation, the contour of the joint was obscured, the surrounding tendon sheaths were enlarged, the hand was flail-like and painful on movement, the fingers could not be flexed on the palm, nor could movements of pronation or supination be performed without the aid of the other hand. No case could appear more suitable for incision and irrigation; in fact, I proposed the operation to the patient, but he preferred to wait and observe the effects of medicinal treatment, and being of a particularly active and robust physique he continued his work, which entailed a great deal of exercise on horse-back during the time he was under my care, with the exception of one or two days, when on my advice he had some defective teeth filled by a dentist in order to avoid buccal trouble during the mercurial treatment. Medicinally he was treated at various times with salicylate of sodium, salol, urotropine, and iodide of potassium. But the most marked effect was obtained by

the application of unguentum hydrargyri compositum spread on lint, enveloping the enlarged synovial bursa and tendon-sheaths, and surrounded by a strong compress of adhesive plaster. Occasionally the application was intermitted for a few days whilst the affected part was massaged, after which the tendon-sheaths were painted with tincture of iodine and the hand enveloped in cotton wool. By Dec. 20th the patient's hand, formerly in such a desperate condition, was almost entirely cured, the swelling of the tendon-sheaths in the neighbourhood of the joint was very slight, movements were freely performed, and although, owing to the length of time during which the hand had been confined, the muscles were somewhat atrophied it was a useful member.

I gave the above title to this paper in order that I might introduce a case of effusion into the cranial cavity of bacterial origin which was treated on somewhat similar lines as the cases already mentioned. On Oct. 24th, 1898, I was summoned to a sugar plantation, Spreckelsville, on the island of Maui, to see a sick child. The patient, a half-caste girl, aged about three years, proved to be suffering from bronchitis. The usual remedies were prescribed. Two or three days later further examination revealed consolidation of the apex of the left lung and the case assumed a more serious aspect. On Oct. 29th signs of basic meningitis appeared. Fortunately, owing to the kindness of neighbours, I was able at this time to have the child removed to more comfortable quarters, whilst satisfactory arrangements for nursing were made. The child presented the symptoms of acute meningitis: high fever, retraction of the head, hydrocephalic cry, and slight squinting; the tache cérébrale was not marked, however. During three days the patient was unconscious of her surroundings. The treatment adopted was the administration of an effervescing mixture, containing sulphate of quinine, bicarbonate of potash, and citric acid every two hours, according to the recommendation of Dr. I. Burney Yeo.[1] Cold applications were applied to the head, and, in addition, I ordered that one teaspoonful of mercurial ointment should be rubbed into the shaven scalp for a quarter of an hour each day. On Nov. 4th the child was convalescent and made an uninterrupted recovery.

In his "Practice of Medicine" (third edition, July, 1898, p. 956) Professor William Osler says: "There are no remedies which in any way control the course of acute meningitis"; he makes no reference to mercurial inunction. As to other applications, whether hot or cold, it seems to me unreasonable to suppose that they can exercise any influence whatever on a septic process which is taking place at so great a distance from the surface. But in the case of mercury we have a drug which admittedly penetrates the tissues underlying the skin, whilst in many morbid conditions its detergent power has long been a matter of common observation. That the cerebral disorder in the case just narrated was due to direct infection ascending by way of the blood- or lymph-paths from the diseased left apex appears to me to be an undeniable fact only requiring bacteriological evidence, unfortunately unattainable, for its final proof. Such being granted, surely it must be acknowledged that we have in mercury locally applied a most powerful agent against morbid processes of bacterial origin, and such being the case is it not surprising that it should not be more frequently employed?

I may add, in conclusion, that in the case of a Japanese suffering from "idiopathic" (?) meningitis and treated in a like manner in 1895 I had a similar happy result.

Wailuku, Island of Maui, Hawaiian Islands.

## NOTE ON A CASE OF ACUTE GLAUCOMA THE RESULT OF AN OPERATION FOR SECONDARY CATARACT.

BY CHARLES BELL TAYLOR, M.D., F.R.C.S.EDIN.,
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THE patient came under my care in his eighty-sixth year, suffering from asthma, chronic bronchitis, and constant cough. He had been blind for some years from senile cataract in the right eye and latterly the left eye had become similarly affected. Operation had not been recommended by an ophthalmic surgeon who had been previously consulted on account of the patient's numerous infirmities, and there seemed to be little chance of ameliorating his condition. Nevertheless, as the patient was very anxious to see and as he could not well be worse off than he was, I determined to extract the cataract on the right eye.

The operation was performed under cocaine without misadventure and without iridectomy, and although the eyeball collapsed completely on extraction of the lens—assuming the form of a tiny bird's nest—the patient made a good recovery and there was no subsequent prolapse of the iris. 12 days later, as the pupil of the operated eye was central and freely dilatable, I ventured to divide a piece of the capsule with the needle-knife and he returned to his home in a northern county with every prospect of good vision. I was disappointed, however, when on a visit in his neighbourhood four months later to find that he could see very little and that the slit in the capsule had closed. I was consequently compelled to remove the peccant membrane *en masse*, which I did with iris forceps through a small incision in the corneo-sclerotic junction. All went well for three days, but on the night of the fourth I was sent for as he was suffering from intense pain which had not been mitigated by the instillation of atropine. The eyeball was as hard as stone and I therefore incised the sclerotic and punctured the hyaloid fossa, letting out a few drops of vitreous. Agony was at once changed to perfect ease. There was no further trouble, and although he has suffered severely from repeated bronchitic attacks he now has a good-looking eye with a central pupil and excellent sight.

It has seemed to me desirable to record this case not only on account of the success of simple extraction under most trying conditions, not only on account of the failure of discission of the capsule and the advent of acute glaucoma when that membrane was removed in its entirety, but also because of the instant arrest of the glaucomatous process by an operation which did not involve excision of the iris.

The occurrence of glaucoma, both in its simple and acute forms, though rare after operation for secondary cataract, is a contingency that has to be reckoned with and it is noteworthy that although its progress may be at once arrested by excision of the iris or puncture of the hyaloid fossa it is not inhibited or prevented by iridectomy, either as a preliminary or when performed as a part of the operation of extraction for cataract. One would think that if it were possible to cut open the eyeball and to remove so important a portion of its contents as the lens itself without misadventure or serious consequences that any subsequent dealing with a mere shred of capsule would be almost, if not quite, danger free. It is not so, however. Many surgeons consider that a second operation is as serious or even more serious than an extraction. Professor Nuel of Liège says that "a simple discission of capsule is quite as dangerous as an extraction for cataract"; Professor Gayet of Lyons says, "There is no operation I dread more"; Professor Kalt of Paris says, "Secondary cataracts always give me great anxiety"; and Dr. Valude (editor of the *Annales d'Oculistique*) says, "C'est la vraiment le gros avator de l'operation de la cataract, la vrai complication plus redoutable que les prolapsus iriens qui guerissent bien et que la panopthalmie si rare." Trosseau, Eperon, Bribosa, and Critchett warn us against the disastrous consequences that occasionally follow operations for secondary cataract and, although my experience of some thousands of cases of extraction of cataract has on the whole been favourable, I have still seen quite enough to warrant me in insisting that we cannot be too careful when dealing with secondary membranous formations.

The late Alexander Pagenstecher and, more recently, Delgardo of Madrid, have sought to solve the problem by scooping out the lens capsule and all at the time of extraction, but this operation does not always attain the end in view and involves loss of vitreous, deep anæsthesia, and conspicuous deformation of the pupil. The late Professor Hansen used habitually to puncture the hyaloid fossa at the time of extraction in order to secure a clear pupil, a practice which I see has been recently revived by Mr. Work Dodd. Other surgeons, by cross-hatching the capsule (Swanzy), or by removing as large a portion as possible with forceps at the time of extraction, have sought to avoid the necessity for subsequent interference. These operations, however, are neither quite

[1] Manual of Medical Treatment and Clinical Therapeutics, vol. i., p. 563, fifth edition.

so safe nor so feasible as they seem to be and are apt to be followed by wrinkling of the capsule cell proliferation or more or less obscuration of the pupil. Besides, the breaking up of the capsule sets free particles of lenticular cortex which are not easily seen at the time of extraction and which although comparatively harmless when retained within the capsule become a formidable source of irritation if set free in the anterior chamber or when brought into contact with recently cut surfaces. It is best, therefore, I think, as a rule, to follow Professor Knapp's advice and to incise the capsule in its periphery only on a level with the upper border of the lens, to get rid of as much cortex as possible, and to take the chance of a second operation should that become necessary. If it does become necessary then we must above all be careful to avoid any manipulation that will involve drag on the ciliary processes. The late Sir W. Bowman endeavoured to avoid this risk by breaking up the capsule with two needles, one in either hand. With these he penetrated the cornea at an angle of 60° or thereabouts, pierced the capsule, and then, by revolving the points of the needles round each other and separating the handles, tore the opaque film asunder without any drag on the tissues with which the capsule is connected. The needles, however, are apt to dig into the vitreous humour, manipulation of the doubly impaled eyeball is difficult, and the operation is not always successful; hence Professor Noyes of New York has suggested that we should transfix the eyeball with a Graefe's knife, and then with two blunt hooks passed through each of the external wounds and pulling one hook against the other, establish a sufficient aperture without drag on the ciliary region. The hooks, however, can only be withdrawn with their concavities upwards, and the double manipulation of the eyeball on the stretch and with a contracted pupil complicates matters sometimes to an embarrassing degree. I have, therefore, substituted sharp hooks so curved that they may be entered and withdrawn in any position. These operations, however, do not always attain the end in view, and we are at present practically limited to a choice of three methods when operating for secondary cataract: (1) simple discission through the cornea as practised by Professor Knapp and myself within a fortnight of extraction; (2) simple discission behind the iris and through the sclera, three millimetres from the limbus, as advocated by Gama Pinto and at present practised by Harry D. Noyes of New York; and (3) avulsion of the membrane, as adopted in the case which I have here recorded—an operation which is habitually practised by Professor Panas of Paris and which may be rendered comparatively safe by first separating the circumferential attachments of the capsule.

Nottingham.

## A CASE OF MALIGNANT DISEASE OF THE OVARIES.

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AND
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THE case here recorded is one of malignant disease of the ovaries which presents clinical and pathological features of considerable interest.

The patient, a single woman, was admitted into the London County Asylum, Hanwell, on Nov. 7th, 1897. At the time of her admission she was 56 years of age and was suffering from terminal dementia. She had been insane for over 17 years, was of German nationality, and was absolutely incoherent, and quite incapable of describing or complaining of any unusual sensation or symptom. Her bodily health was indifferent, but until October, 1898, this called for no particular note. Early in this month, however, she became obviously worse and was put to bed. On Nov. 3rd she was allowed to get up, but walked about with her body bent slightly forwards and with her hands placed over her abdomen as if in pain. She was therefore put back to bed and on examining her abdomen nothing abnormal was detected. The abdominal parietes were somewhat retracted but not more so than would have been expected from her partially emaciated condition. No vaginal examination was made at this time. She remained in bed and no further detailed examination was made until Nov. 17th, on which day she vomited. It was then found that there was a swelling occupying the lower part of the abdomen. It appeared to be rising out of the pelvis rather to the right of the middle line and extended to about halfway between the pubes and umbilicus. It was rounded in shape, fairly regular in outline, dull upon percussion, and firm but somewhat elastic to the touch. A catheter was passed upon which about an ounce of normal urine was withdrawn. Per vaginam it was found that the uterus was pushed over towards the left and against the posterior pelvic wall, the cervix being depressed and easily accessible. Her temperature on the evening of this day reached 99·6° F. and on the 18th at 8 P.M. it reached 100·6°, the highest recorded point. During the next few days her temperature generally rose to 100° at night, falling in the morning to 99°. On Nov. 27th she commenced to suffer from diarrhœa of a mild type. By this time the tumour had increased enormously in size, being, as far as one could judge, at least three times as large as when first observed on the 17th (10 days previously). Its character also had altered. It was no longer regular in outline but had become distinctly nodular and the percussion note over it was now not uniformly dull. Its highest limit had reached to above the level of the umbilicus, and about three inches to the right of the middle line the tumour was crossed in a nearly vertical direction by a line of resonance. This line of resonance ceased in the right iliac region about two inches above Poupart's ligament. On the left the tumour had now extended well towards the flank. The left upper corner of the growth was cut off from the remaining portion by a line of resonance almost semicircular in shape. With these two exceptions the whole of the tumour was dull on percussion and no evidence of the presence of any fluid could be made out. There was no ascites. The superficial abdominal veins were more evident than usual.

On Dec. 6th the patient was put under chloroform and an exploratory incision was made by Dr. M. Handfield-Jones. There were extensive adhesions and the tumour was found to be almost solid throughout. Death took place on the morning of Dec. 9th.

At the necropsy, which was held within 24 hours after death, a large tumour was revealed arising from the pelvis. The kidneys were quite free. Some coils of intestine were free in the upper part of the abdominal cavity, but the remainder were adherent to the tumour which to all appearances had infiltrated the mesentery. The tumour was in the middle line and was firmly adherent around the brim of the pelvis. It was slightly adherent to the posterior parietes, but had formed somewhat firmer adhesions with the lower part of the anterior abdominal wall. On removal it was found to be a growth from the region of the right broad ligament. The ovary on that side could not be found, but the Fallopian tube was intact. The tumour therefore in all probability grew from the right ovary. In doing so it pushed the uterus backwards and tilted it to the left side. It appeared to have infiltrated the sacral glands, making a firm union with the rectum and also the lumbar glands and the mesentery above. On its anterior surface were two coils of intestine which corresponded with the resonant areas found clinically. On the left it was adherent to the left ovary, which was also the seat of malignant disease and had become enlarged to the size of a small fist.

On section the central part of the tumour was white and had the appearance of loosely packed fibrous tissue. The peripheral parts had a red, fleshy appearance. These growths, together with the uterus, which was small and atrophic, weighed 3·63 kilogrammes (a little over 8 lb.). The larger tumour measured, taking its greatest diameters, 24 centimetres long by 18 centimetres broad and 14·5 centimetres thick.

Microscopical examination of the various parts of the tumour revealed a great diversity in the component elements. Some parts were composed almost entirely of cells, with an intercellular substance slightly fibrillar or granular; other parts were almost entirely composed of bundles of fine fibres, with here and there a small round cell; and other parts had a striking lymphatic structure. There were extensive hæmorrhages into the substance of the tumour generally, every field containing scattered blood corpuscles and many

of them altered in shape. The blood-vessels were for the most part not clearly defined, or were defined by rows of spindle-cells. A correct description of the cell elements of ovarian tumours is of extreme value from many considerations which cannot be entered into here. The normal structure contains many cells of a very elementary type, which makes it conceivable almost for any kind of tumour to be developed, and also renders it possible for great metaplasia to occur in any one growth. Some parts one could classify as being fibro-sarcomatous, others as small round-celled sarcoma, and others as lympho-sarcoma. Oval cells did occur, but were isolated and few in number.

The following were some of the commoner cell elements: (1) extremely small, darkly-stained, round cells, about two-thirds the size of a red blood corpuscle, which may have been nuclei of broken-down cells (?); (2) cells a little larger than a red blood corpuscle, staining poorly with a small nucleus or nucleolus; (3) still larger cells staining deeply and containing many granules; (4) cells similar to No. 3 but oval; (5) cells like large leucocytes with two or three nuclei present; (6) large flat cells, oval or irregular, sometimes containing a nucleus; (7) small branching cells; and (8) red blood corpuscles, some showing a degree of poikilocytosis (?).

*Remarks.*—Pathologically, malignant ovarian tumours are of interest because of the obscurity which surrounds the actual tissue from which they develop, particularly when they occur after the climacteric period. In the normal ovary the cell elements are mainly of two kinds: (*a*) the germ epithelium of Waldeyer with the various cells forming a Graafian follicle; and (*b*) connective tissue elements, condensed in the cortex but everywhere of an elementary type. The rapid growth and extensive infiltration in this case point to sarcoma. The age, however, is somewhat over the time at which the commoner forms of sarcomata commonly develop. According to Cohnheim, tumours grow from unutilised embryonic tissue, and it is extremely probable that in this case the growth took its origin in the elementary form of connective tissue mentioned. A malignant growth having its origin in the epithelial coverings of the ovary was possible. The age of the patient was one at which there is a proneness to malignant disease, and the most likely part of the ovary to take on this character was this elementary form of connective tissue. The growth was rapid, a little over two months being taken to produce a tumour of great size. A noticeable clinical feature was the absence of ascites, the presence of which is so usual in ovarian growths.

## PRUSSIC ACID IN SWEET CASSAVA.

BY PROFESSOR CARMODY, F.I.C., F.C.S.

FRANCIS, one of my predecessors in the Trinidad Government Laboratory, was the first[1] to point out that prussic acid was present in sweet cassava to a considerable extent. Francis's results have not received the attention which they deserved, probably because they were a direct but unconfirmed denial of statements repeatedly made by recognised authorities. There are very few recent editions of toxicological handbooks that make any reference to the results published by Francis. Even in standard reference works like that of Dr. Thorpe's "Dictionary of Applied Chemistry" it is stated that "the milky juice in the sweet variety is innocuous, whilst that in the bitter is highly poisonous."

The question is of importance from a toxicological point of view in those places in the tropics where cassava is used extensively as a food. For poisonous symptoms are not infrequently reported after a meal of sweet cassava; and as the two kinds of cassava—the sweet and the bitter—are so much alike as to be almost indistinguishable, the conclusion usually arrived at is that the bitter variety has been cooked in error.

My results fully confirm those of Francis as to the presence of hydrocyanic acid, although his average figures are somewhat higher than mine. This year has been an unusually dry one for Trinidad and a diminished supply of rain does affect the character of plant juices.

[1] Analyst, April, 1877.

The method of analysis adopted by me differs somewhat from that of Francis. He grated 500 grammes of cassava into 500 cubic centimetres of water which was left for two hours in a well-closed vessel. It was next strained through a linen cloth into a flask which was then corked and allowed to stand until the starch subsided. 200 cubic centimetres of the clear liquid were decanted and distilled and the results obtained were multiplied by four for the total in 500 grammes. This calculation was based on the assumption that the original 500 grammes contributed 300 cubic centimetres of water—an assumption which is not far from the truth if the cassava is quite fresh. Francis also remarks that a slight loss occurred during the process of grating, and in a tropical laboratory this loss might be appreciable. I endeavoured to avoid this loss on the one hand, and the possibility of error through assuming that all cassavas contained 60 per cent. of water on the other, by taking the whole root, slicing it quickly, and allowing it to stand in water all night in a well-corked flask. The liquid was decanted in the morning and the whole distilled. The extraction with water was repeated a second and a third time. The slices effectually prevented the great disadvantages arising from the starch finding its way into the distilling flask, which Francis prevented by subsidence but which necessitated his distilling an aliquot part, this aliquot part being a *definite* volume of 200 cubic centimetres taken from an *approximate* total volume of 800 cubic centimetres.

Francis does not appear to have made more than one extraction with water. I have made three in all cases and in some as many as five. I have found that with slices the second extraction yields as much, and sometimes more, than the first. I have repeated Francis's method of grating and find that a second extraction yields about half as much prussic acid as the first. It would appear from this, therefore, that Francis's results are not as high as they would have been had he made a second extraction. The figures obtained by Francis and myself are:—

| | HCN per cent. | |
|---|---|---|
| | Francis. | Carmody. |
| Mean ... ... ... ... ... | 0·0168 | 0·010 |
| Highest ... ... ... ... | 0·0238 | 0·019 |
| Lowest ... ... ... ... ... | 0·0113 | 0·005 |

It will be seen from this that while my "lowest" percentage is much below that of Francis my "highest" is nearly the same as his. This establishes the truth of the statement made by Francis, "that the so-called *sweet* or harmless cassava not only yielded prussic acid, but the quantity obtained from it so nearly equalled that from the *bitter* that no line of distinction could be drawn between them," so far as it relates to the amount of prussic acid in the cassava; but I have discovered an analytical difference between the two kinds by means of which they can be satisfactorily distinguished.

This discovery arose in trying to avoid the difficulties caused by the presence of starch in the distilling flask. At first I placed the slices in the distilling flask, added water in one set of experiments, and passed steam through in another and collected the distillates. This failed in each case through the gelatinising action of the boiling water or steam on the starch. This starch being chiefly confined to the inner portions, in my next experiments I soaked the inner slices in water at ordinary temperature, decanted and distilled. The quantity of starch thus admitted into the flask was so small as not to interfere with the distillation. The skin and outer cortical layer, which together constitute about one-fifth of the total weight of the sweet cassava, could be placed direct in the distilling flask, and the distillation carried on satisfactorily. It was this separation of the parts for convenience in distillation that led to the discovery that in sweet cassava the prussic acid is located chiefly in the skin and outer cortical layer.

The following are some of the results obtained from fairly representative samples of sweet cassava.

| Inner part. HCN per cent. | Skin and outer cortical layer. HCN per cent. | Inner part. HCN per cent. | Skin and outer cortical layer. HCN per cent. |
|---|---|---|---|
| 0·006 | 0·033 | 0·004 | 0·024 |
| 0·003 | 0·014 | 0·010 | 0·030 |
| 0·015 | 0·033 | 0·004 | 0·042 |
| 0·002 | 0·031 | 0·005 | 0·038 |
| 0·011 | 0·020 | 0·003 | 0·034 |
| 0·008 | 0·032 | | |

With bitter cassava the following results were obtained from representative samples :—

| Inner part. HCN. per cent. | Skin and outer cortical layer. HCN. per cent. | Inner part. HCN. per cent. | Skin and outer cortical layer. HCN. per cent. |
|---|---|---|---|
| 0·031 | 0·024 | 0·017 | 0·019 |
| 0·034 | 0·012* | 0·019 | 0·020 |
| 0·021 | 0·025 | 0·016 | 0·024 |
| 0·037 | 0·014* | 0·017 | 0·020 |
| 0·030 | 0·025 | 0·013 | 0·016 |
| 0·014 | 0·013 | 0·032 | 0·035 |

* Exceptional.

The general conclusions to be drawn from these results are: (1) that in sweet cassava the prussic acid is not uniformly distributed throughout the tuber and that in bitter cassava it is uniformly distributed, or nearly so; and (2) that this affords an analytical means of distinguishing between *sweet* and *bitter* cassava.

An important observation in connexion with local methods of eating cassava is that the skin of the sweet kind is removed before boiling, the inner portion alone being cooked and eaten. This custom is no doubt the result of experience and accords with what science would now teach as a wise precaution. But notwithstanding this removal of the skin ill-effects are said to follow from the use of the inner portion if water is drunk some time after a meal. This may now be accounted for in this way. It is shown in my experiments that whilst a first boiling removes a certain amount of hydrocyanic acid—all, in fact, that exists ready formed in the tuber—that a second addition of water and subsequent boiling removes a further portion. It would appear from this that cassava in a person's stomach would also develop an amount of prussic acid equivalent to that obtained in a second distillation and that the drinking of water would dissolve this and cause it to act more readily on the system. The total quantity would, however, be far below the minimum fatal dose and would only be expected to produce those unpleasant results occasionally reported. The question next arises—Is this second portion of hydrocyanic acid produced by fermentative changes, as is known to happen in the case of bitter almonds; or is it part of that originally existing in the tuber and in some way protected from the solvent action of the first treatment with boiling water? It is possible that, with slices, the water would penetrate slowly to their interior, and thus produce a second yield of prussic acid; and that if the cassava had been grated, as was done by Francis, the water would within Francis's limit, dissolve the whole of the acid. I have not found this to be the case, as the following experiment shows :—

*Sweet Cassava.*

| Duration. | Half (408 grammes) sliced. n/10 $AgNO_3$. | Half (427 grammes) grated. n/10 $AgNO_3$. |
|---|---|---|
| First extract 2 hours ... | 3·0 c.c. | 2·2 c.c. |
| Second ,, 2 ,, ... | 1·3 ,, | 1·4 ,, |
| Third ,, 20 ,, ... | 3·5 ,, | 1·4 ,, |
| Fourth ,, 2 ,, ... | 1·0 ,, | 0·7 ,, |
| Fifth ,, 2 ,, ... | 1·0 ,, | 0·9 ,, |
| Sixth ,, 17 ,, ... | 1·1 ,, | ·5 ,, |
| Seventh ,, 2 ,, ... | 0·4 ,, | 0·7 ,, |
| Eighth ,, 2 ,, ... | 0·5 ,, | 0·9 ,, |
| Ninth ,, 2 ,, ... | 0·2 ,, | 1·3 ,, |
| Total ... ... ... ... | 12·0 c.c. | 10·0 c.c. |

It would appear from this and similar experiments that the whole of the hydrocyanic acid cannot be removed from grated cassava by a two hours' extraction with water and that there is apparently a loss of acid even when the grating is done under water. And, notwithstanding that my yield from slices is the higher of the two, Francis's results from a two hours' extraction are appreciably above mine. As already stated, this may be due to the exceptionally dry season. Next year I shall continue the experiments in order to clear up this difficulty. At present I am inclined to believe that part of the acid may be formed by fermentative change. If this be so cassava starch on keeping would be likely to be more poisonous than when freshly prepared. Fermentation beyond a certain limit entirely decomposes the hydrocyanic acid. Cassava is also cooked by roasting the entire tuber. This removes all the HCN.

There appear to be no grounds for the common belief that sweet cassava contains more HCN the older it is. In all the samples examined during a period of nine months from the time cassava was first brought to market the proportion of HCN showed no increase that could be traced to age. Nor is there any ground for the belief that the locally grown sweet cassava is but a degenerate growth resulting from many years' association with the bitter variety. A selected sample imported from Jamaica and grown at the Local Government gardens contained the same amount, and the same relative proportions in skin and inner part, of HCN as the ordinary product of Trinidad.

The subject is not yet exhausted, and I hope to be in a position to publish further results next year.

Trinidad.

# A Mirror
## OF
# HOSPITAL PRACTICE,
## BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.**

## YORK COUNTY HOSPITAL.

### FOUR SURGICAL CASES.

(Under the care of Mr. W. H. JALLAND.)

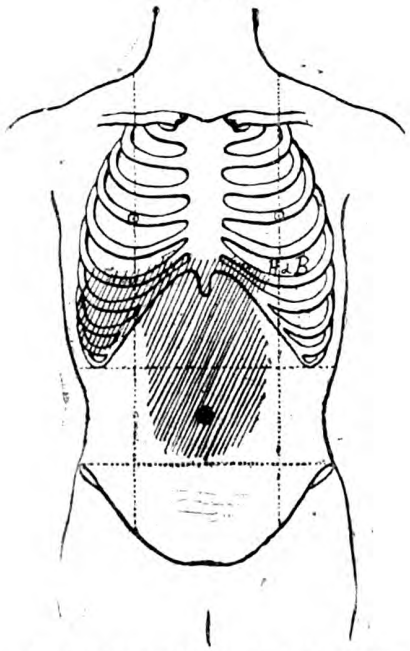
THE first of the following series of cases is an illustration of the occasional beneficial effects of an operation, even though no lesion is discovered. This result is probably most frequently seen in operations for suspected renal calculi, when although no stone can be found relief of all the symptoms follows. Various explanations have been offered, that some slight adhesion has been broken down, that some local congestion has been relieved, that some nerve has been divided, and lastly, that the result is entirely the effect of the operation on the patient's mind. Whichever explanation may be true—and probably each is true in some cases—there can be no doubt as to the reality of the improvement which follows. The third case shows the benefit of early operation in intussusception, especially in very young children.

CASE 1. *Exploratory laparotomy for severe abdominal pain; no disease detected; recovery.*—A married woman, aged 39 years, was admitted into the York County Hospital on August 3rd, 1898, under the care of Mr. W. H. Jalland. For some time previously to her admission she had been suffering from severe gastric pain which it was thought might possibly be due to passing gall-stones, though this was doubtful. She never was jaundiced. She had violent sickness and the pain was so severe that she had had frequent injections of morphia. On admission she was somewhat wasted in appearance, with an anxious expression, and was evidently suffering at times considerable pain, although the region of the pain was somewhat indefinite, being described as above the abdomen. Her weight on admission was 5 st. 7 lb. She was put upon small quantities of peptonised milk and beef-tea, with drachm doses of bromidia when the pain was very severe. As she was not much better on the 26th the stomach was washed out and this was repeated on the 29th. As she was somewhat relieved after this food was gradually increased. There was no necessity to give her any more sedative. She had been kept in bed previously to this, but got up on Sept. 15th and left the hospital considerably relieved on the 24th. She was admitted again on Feb. 16th, 1899, all her symptoms having returned. The same plan of treatment was adopted; the stomach was washed out frequently, small quantities of food gradually increased were given, and she left the hospital much relieved on March 23rd. She was admitted again on July 13th, 1899, the symptoms having returned in a much aggravated form. She

had wasted very considerably and really looked very seriously ill. She begged that some operation might be performed to relieve her pain and trouble; so, at the woman's urgent request, it was decided to perform an exploratory laparotomy which was accordingly done on July 18th under ether. The incision was made in the median line in the usual way above the umbilicus. The stomach was first examined and nothing wrong with it could be detected. It was brought out of the incision and examined thoroughly all over. There were no adhesions nor was there any thickening of the pylorus. The gall-bladder was next examined and found to be perfectly healthy in every way, nor was there anything to be detected in the cystic or common duct. Under these circumstances it was thought advisable to examine no further but to close the wound. After the operation the patient expressed herself as feeling most comfortable. Her temperature never rose above 99° F., and reached that height on only two occasions. The wound was dressed and the stitches were removed on July 26th and she went out of the hospital perfectly well on August 14th. Since then she has been almost entirely free from pain and has increased in weight over a stone. The patient was seen on Oct. 26th and was then perfectly well and had put on 3½ st. in weight.

CASE 2. *Large cyst in the liver (? hydatid or simple cyst); laparotomy; drainage of the cyst; recovery.*—A married woman, aged 28 years, was admitted into the York County Hospital on Sept. 7th, 1899, under the care of Mr. Jalland. She had had three children, the youngest being seven years old. She had had no miscarriages, nor was there any specific history, and her confinements had all been normal. She had had some ulceration of the palate in 1896 and she had on admission some necrosis of bone and a discharge of the sinus in the left lacrymal duct region which preceded the ulceration of the palate. In September, 1898, she had complained of great pain in the left lumbar region and was in bed for about five weeks, during which time she lost weight and flesh. She had first noticed that her abdomen was enlarging about May, 1899. The abdomen had greatly enlarged since, especially during the previous two months. On admission she was found to have a large fluctuating swelling in the upper part of the abdomen in the median line, extending from the upper ribs to some two or three inches below the umbilicus, which was apparently connected with the liver (Fig. 1). It was not tender on pressure, but

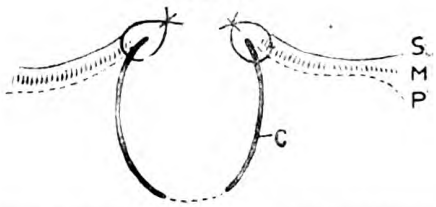
FIG. 1.



The shaded portion shows the extent of the cyst.

was elastic to touch and evidently contained fluid. She had noticed this now for over a year and it was gradually increasing in size. She had not menstruated for a year and she had some impression that the swelling had grown since menstruation had stopped. The girth of the abdomen at the umbilicus was 35½ inches; the largest girth, one and a half inches below the umbilicus, was 36¼ inches. On Sept. 19th, under ether, a free incision was made in the median line over the tumour from the umbilicus to within half an inch of the ensiform cartilage. The abdominal cavity was opened in the usual manner, and a bluish-black tumour presented itself in the wound. On investigation it was found to be firmly adherent to the transverse colon by well-organised fleshy adhesions and also above to the liver. The cyst was tapped with a dagger trocar and the contents, which were of a brownish-black liquid character, were evacuated. Further investigation showed the tumour to proceed from the right lobe of the liver, and the adhesions to the colon were of too firm a character to be separated, so it was decided to drain the cyst thoroughly and to suture it to the opening in the abdominal wall. The opening in the cyst made by the trocar had been closed with a large clamp forceps. The edges of the opening of the cyst were now carefully sutured to the peritoneal surface, as explained in Fig. 2, and a large number of silk sutures were placed

FIG. 2.




C, cyst wall adapted to P, peritoneum; M, muscular abdominal wall; S, skin.

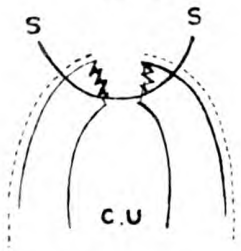
evenly at intervals of one and a quarter inches round the opening. When the cyst cavity had thus been completely shut off from the peritoneal cavity the silkworm-gut sutures were passed through the skin and muscle at the upper and lower ends of the wound, so as to reduce the size of the external opening, and, finally, the edges of the skin were carefully approximated by horse-hair, a large Keith's drainage tube was placed in the cyst, and the wound was dressed as usual. The abdominal cavity had previously been washed out with sterilised water. The patient passed a good night after the operation and on the following day (the 20th) about two drachms of brown fluid were drawn off through the drainage tube. On the 21st it was noted that the patient had wheezed considerably during the night. About a drachm of fluid was removed. On the 22nd, the patient's temperature rose to 101·8° F., with a slight cough. There was a small patch of pneumonia on the right base posteriorly of about the size of a two-shilling piece. On the 23rd the diet was increased to three pints of milk in the 24 hours with tea and beef-tea. The pneumonia had increased in extent, but the patient was expectorating more freely. The wound was perfectly healthy; the respirations were 46 per minute. On the 24th the temperature had gone down with a run from 101·8° to 98°. The pneumonia had not differed much from the previous days; the respiration was much easier, being 33 per minute. The sutures were removed on the 27th day and from this time the patient made an uninterrupted recovery. On Oct. 1st she was practically well.

CASE 3. *Intussusception; laparotomy; recovery.*—A male infant, aged 11 months, was admitted into the York County Hospital on March 31st, 1899, under the care of Mr. Jalland, with the following history. He had had vomiting for 12 hours with mucous and bloody discharge from the anus. On admission there was a distinct tumour to be made out situated in the left hypochondriac region. It was moveable and could be shifted about in most directions, but freely to the right side of the abdomen. Under chloroform the bowel was thoroughly inflated by air, but this made no alteration in the size or condition of the tumour, so the abdomen was immediately opened in the median line two inches above and two inches below the umbilicus. The tumour was discovered in the left hypochondriac region. This was pulled outside and found to be the lower part of the ileum which was invaginated into the cæcum. The top of

the appendix only just appeared. This was reduced by pressure, being squeezed out, and the gut was returned into the abdominal cavity. The bowels were opened by an enema on April 2nd, and naturally every day afterwards. The wound was dressed on the 3rd and the stitches were taken out on the 6th, when the wound was found to be healed in the greater portion of its length. The child's temperature kept up for some time, but that was entirely due to the fact that he was teething. With that exception he had no bad symptoms and he was discharged from hospital perfectly well on May 13th. This shows the advantage of operating on these cases early, as the symptoms had apparently been in existence only 12 hours before admission.

CASE 4. *Cæsarean section; recovery.*—A woman, aged 21 years, was admitted into the York County Hospital on Sept. 25th, 1899, under the care of Mr. Jalland. Labour had commenced on the previous day, when she was seen by Dr. J. G. E. Colby of Malton, who found that her pelvis was extremely distorted and that the conjugate diameter was only two inches and sent her at once into the hospital, where she arrived at about 9 A.M. on Sept. 25th. Upon examination, finding there was no prospect of the child being delivered in the natural way, it was decided to perform Cæsarean section at once. Nitrous-oxide gas, ether, and chloroform were administered and an incision four and three-quarter inches in length was made in the median line, commencing about half an inch below the umbilicus, all the bleeding being stopped by pressure of the forceps. The abdominal wall was very thin and the uterus was almost immediately exposed. The wound was carefully packed round with sterilised pads and the uterus was opened by a vertical incision about three and a half inches long. The placenta was found immediately underlying it and some sharp bleeding occurred. The membranes were quickly separated by passing the fingers downwards and the liquor amnii was allowed to escape. The child was then delivered by drawing on the right leg. Some little difficulty was found in delivering the head. After ligaturing the cord the placenta and membranes were removed. The wound in the uterus was then sutured by four deep sutures, passed so as to include the muscular walls of the uterus (Fig. 3). Between these deep sutures

FIG. 3.




C U, cavity of uterus; S, S, line of suture.

several fine silk sutures were placed, carefully approximating the edges of the cut peritoneum. The abdominal cavity and pelvis were then washed out with sterilised water at a temperature of 110° F., some of which was left in. The abdominal wall was then sutured with half a dozen deep silkworm-gut sutures, including the whole of the constituents of the abdominal wall. A few horse-hair sutures were necessary to bring the edges of the skin together. The time of the actual operation was about 40 minutes. The child (a male) was alive and was delivered in 13 minutes. A hot vaginal douche was given before leaving the theatre. The patient made an uninterrupted recovery. The sutures were removed on Oct. 3rd, and on the 24th she and the child were both perfectly well.

*Remarks by* Mr. JALLAND.—I am a little uncertain as to whether the cyst in Case 2 was hydatid or not. There were no supplementary cysts discovered in it, nor apparently any cyst wall. Unfortunately the fluid was not examined, so the absolute nature of it was not determined. It may have been an old degenerated hydatid cyst or one of those simple cysts which are occasionally met with in the liver. In any case the result of the treatment was most satisfactory.

## GOVERNMENT CIVIL HOSPITAL, HONG-KONG.

A CASE OF TYPHOID FEVER; TWO RELAPSES; RECOVERY.

(Under the care of Dr. J. M. ATKINSON, Principal Civil Medical Officer, and Dr. J. A. LOWSON, Acting Principal Civil Medical Officer.)

A RELAPSE is very common in typhoid fever, and is often thought to be due to incorrect dieting, but this is probably not the case. Every rise of temperature after the fall to the normal in typhoid fever is not a relapse, but in a true relapse all the phenomena reappear. Two relapses are more rare, but three and even four[1] have been seen. For the notes of the case we are indebted to Mr. J. Bell, resident medical officer.

A young German, aged 25 years, was admitted into the Government Civil Hospital, Hong-Kong, on Jan. 7th with a history of five days' continued fever, headache, pain in the limbs, &c. The tongue was furred in the centre but was clean at the tip and edges. Gurgling was heard in the right iliac fossa. The temperature was 104° F. The continued fever lasted for 30 days, the temperature ranging mostly between 101° and 104°. There were crops of roseolar spots, splenic enlargement, and tenderness on pressure over the spleen, epistaxis occasionally, and delirium on the twenty-first day, with a feeble pulse of 144 and constipation. This last was most troublesome throughout the illness. From the thirtieth to the forty-first day the temperature was of the intermittent type, was normal or 99° in the morning and 100° or 103° (105° once) in the evening. From the forty-first to the fifty-fourth day (13 days) it remained normal, and on this day he had a dose of castor-oil followed by great pain in the abdomen with an evening temperature of 102°. The relapse lasted for 20 days, the temperature ranging between 100° and 104°, with dry furred tongue, retention of urine, a dry "rub" at the left base, and a bad pulse throughout. The temperature remained normal for 14 days (up to the eighty-seventh day), when the patient had a dose of two grains of cascara sagrada, followed by much abdominal pain and distress and an evening temperature of 101·8°. This (the second) relapse lasted for 13 days, the temperature varying between 100° and 103°, with low delirium, feeble quick pulse, and great depression. He slowly convalesced and was up for the first time on the one-hundred-and-twentieth day and was sent home to Europe after having been 149 days in the hospital.

*Remarks by* Mr. BELL.—Two relapses in typhoid fever being rare this case is reported as an instance of the amount of vitality possessed by some patients. He was not a robust young man, having been rejected, I believe, for the German army, and only weighing 108 lb. on the day of admission. The fact that throughout this long illness on an ordinary mattress there were never any signs of bed-sores speaks for the nursing, and the greatest credit is due to Sister Hope (Miss Franklin) and Sister Edith (Miss Maker) for the keen and intelligent interest which they took in the case throughout.

# Reviews and Notices of Books.

*Lectures on Clinical Medicine.* By JOHN LINDSAY STEVEN, M.D. Glasg. Glasgow: Alex. MacDougall. 1900. 8vo, pp. 195, with 37 Illustrations. Price 6*s*.

THIS book contains a series of 15 lectures delivered by Dr. Steven in the Glasgow Royal Infirmary. In the first lecture a full account is given of that rare and interesting disease known as Landry's paralysis, based upon two cases in one of which there was a post-mortem examination. No lesion was found in the central nervous system, but unfortunately the peripheral nerves were not examined. Lesions, as the author says, have undoubtedly been found by competent observers in the peripheral nerves. Changes have also occasionally been noted in the central nervous system. Thus it has been suggested, and not at all improbably, that

[1] Broadbent: Quain's Dictionary of

Landry's paralysis has been made to include more than one disease. Dr. Steven looks upon his cases as lending support so far as they go to the toxæmic theory of the complaint. Some attention is given here to the resemblances between Landry's paralysis and diphtheritic paralysis, but obviously the analogy must not be pushed too far.

Lecture II., on a Mediastinal Tumour Involving the Root of the Left Lung, illustrates the extreme difficulty which is sometimes experienced in the diagnosis of this affection, at least in its earlier stages. The author very properly emphasises the diagnostic importance of recognising any fulness or nodular projections beneath the clavicles or in the neck. A further case of malignant tumour about the root of the lung is described in Lecture VII. Here there were multiple tumours of the integument.

The Schott Treatment of Heart Disease comes under discussion in the third lecture. The author obviously thinks that this method of treatment has been over-estimated, but three cases however carefully studied will not allow of any wide-reaching conclusions being drawn.

Lecture IV., which is undoubtedly one of the most interesting of the series, contains a record of four cases illustrating the influence of syphilis in the production of alarming disorders of the nervous system. The first case was one of syphilitic hemiplegia with Jacksonian epilepsy in a man, aged 46 years, probably due to a gummatous affection involving the motor cortex. There were also present gummatous tumours of the scalp. Rapid recovery took place under mercury and iodide of potassium. This case reminds the reviewer of a similar case under his care which pursued a very varying course under anti-syphilitic treatment. Trephining was eventually had recourse to but unfortunately this patient succumbed and a localised gummatous affection of the meninges and cortex of one Rolandic area was found. The second case was one in which several of the eye muscles were involved and there was severe hemicrania. Complete recovery ensued under treatment with iodide of potassium and mercury. In the third case, of a man, aged 40 years, there were motor aphasia and marked paresis and rigidity of the right arm and hand, preceded by severe headache. There was reason to believe the disease to be of syphilitic origin but no improvement followed anti-syphilitic treatment. The last case occurred in a man, aged 37 years, who had severe and protracted headache with alarming convulsions and mental derangement of undoubted syphilitic origin. The headache and fits were relieved by prolonged mercurial treatment.

In Lecture V., on Infantile Jaundice, the mild form is carefully distinguished from the grave form, which latter is usually associated with serious organic lesions. The author relates in Lecture VI. an interesting case of a spastic hemiplegia following upon enteric fever and terminating in insanity. The patient had thrombosis of the veins in the leg and Dr. Steven thinks that the cerebral lesion was probably of a similar nature.

In Lecture VIII. a case of Marie's osteo-arthropathy, but without any pulmonary lesion, is related. Four cases of muscular atrophy are detailed in Lecture IX.; two are of the kind generally described as progressive muscular atrophy, the other two being of a still more doubtful nature.

In Lecture X. the author describes in detail a case, long under observation, of sclerodermia with hemiatrophy. In an appendix the post-mortem examination is related. Lesions were found in the right anterior horn of the cord and included changes in the multipolar cells and the formation of cavities about the vessels. The author thinks these lesions of the greatest importance in connexion with sclerodemia and hemiatrophy. Cases of multiple cerebral tumour and spastic paralysis, probably of myopathic origin, are related in Lectures XI. and XII. respectively.

The treatment of pleurisy with effusion by tapping is fully described and illustrated by cases in Lecture XIII. A valuable and practical summary of the subject will be found here. In Lecture XIV. a case of splenic leukæmia with a description of the characters of the blood in this disease is given. The last lecture deals with the subject of profuse hæmatemesis due to pore-like erosions of the gastric arteries. Two cases are recorded, in one of which the patient recovered under rectal feeding and saline infusion, but ultimately succumbed to an uncontrollable diarrhœa. In the other case death occurred notwithstanding that a laparotomy was performed. The abrasions in which the minute opening into the vessels are found may be readily overlooked because they are very superficial.

This series of clinical lectures provides some very interesting and instructive reading. The lectures are well written and are very practical. Collected together in this compact form they reflect, as Dr. Steven very rightly says in his preface, the varied nature of the work which falls to the physician in a large general hospital.

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*The Principles of Bacteriology*. By A. C. ABBOTT, M.D., Professor of Hygiene and Director of the Laboratory of Hygiene, University of Pennsylvania. Fifth Edition. London: H. K. Lewis. 1899. Pp. xi.—590. Price 12*s.* 6*d.*

*The Hygiene of Transmissible Diseases: their Causation, Modes of Dissemination, and Methods of Prevention.* By A. C. ABBOTT, M.D., Professor of Hygiene and Director of the Laboratory of Hygiene, University of Pennsylvania. London: Rebman, Limited. 1899. Pp. 311. Price 14*s.*

OF these two books by Professor Abbott the first is a fresh edition of a work which we have had several occasions to review very favourably in these columns. The fact that a fifth edition of the "Principles of Bacteriology" should be called for within eight years of its first publication is a sufficient proof that our verdict has coincided with that of students and teachers of the subject generally. The character of the book has not been in any way altered in the present edition; it is somewhat increased in size owing to the introduction of some new illustrations and of a certain amount of new matter necessary in a rapidly growing subject where a book must be kept up to date. No alteration has been made in its price. Amongst other changes we may note that the chapter on Immunity has been largely rewritten and an account of Ehrlich's recent speculations on the subject introduced. Throughout the book there is evidence of careful revision, and its thorough and excellent character has been well maintained. It is a pleasure to us again to recommend it as a valuable and suggestive text-book both for students and teachers.

The second book, "The Hygiene of Transmissible Diseases," is not only a new departure for Professor Abbott, but to some extent a novelty in the literature of medicine. We cannot recall any one book which attempts to cover quite the same ground, though T. W. Thompson's section on "The Natural History of Infectious Diseases" in Stevenson and Murphy's "Treatise on Hygiene and Public Health" does so very nearly. The book is stated to reproduce in substance a certain portion of the lectures delivered by the author in his capacity of professor of hygiene in the University of Pennsylvania. It is universally admitted that "public health" has developed into so important a branch of medicine that it demands separate text-books and lectures. It is further becoming apparent that the "transmissible" diseases bulk so largely in public health and form so compact a subject that there is nothing inappropriate in their treatment in a separate book. If any justification for so doing were required it is, we think, to be found in the present volume. A vast amount of time and trouble is saved to the student by the collection in one small

volume of some 300 pages of the principal facts concerning the nature of infective diseases, their causation and prophylaxis, which otherwise must be sought laboriously in scattered medical literature. There are no novel facts brought forward—indeed, the writer has deliberately excluded all that is not well established. The merit of the book lies in the compact but lucid treatment of a mass of accurate and well-arranged detail on a definite branch of hygiene. The subject gains in interest by this collective treatment and the tables and diagrams which are freely introduced serve to enforce the lessons taught.

The general plan of the book is as follows. After some general introductory remarks, Section I. deals with the causation of disease and naturally of infective disease in particular. The writer adopts the usual terminology, speaking of the microbe as the direct or exciting cause and the various other factors (insanitary surroundings, sex, age, &c.) as predisposing causes. The different factors are discussed in detail and illustrative charts are introduced. We would suggest that in introducing "comparative mortality" tables it would have been well to state explicitly what such tables mean and how they are constructed. Section II., forming the larger part of the book, deals with the transmissible diseases in detail, that is, with the specific fevers and all other infective diseases, including the animal ento-parasites, such as tapeworms. There is no attempt to deal with the ordinary medical aspects of these affections. They are shortly defined, a brief account is given of the specific micro-organism where such is known, illustrated by a drawing or photograph, and then the distribution, modes of infection and dissemination, and details of prophylaxis are in each case discussed in full. Section III. deals with general prophylactic measures, commencing with a short and excellent critique of the theories of natural and acquired immunity. The various chemical and physical means of disinfection are then described in detail, and the book concludes with an account of the management of the sick-room in infectious cases and a short chapter on quarantine.

There is little room for criticism as to the care with which Professor Abbott has marshalled and arranged his facts. In his desire to avoid contentious matter he has abstained from mentioning in any detail the facts which have been collected in this country as to the conveyance of scarlet fever and diphtheria by the milk of cows believed to be suffering from analogous infectious disease, and which perhaps deserve more than the passing allusion which he makes to them. But he has included nothing which the student of hygiene ought not to be well acquainted with, and the style and manner in which the information is conveyed leave nothing to be desired. We heartily commend the book as a concise and trustworthy guide in the subject with which it deals and we sincerely congratulate Professor Abbott on having written so valuable a work.

## LIBRARY TABLE.

*Mock Nurses of the Latest Fashion.* By F. J. GANT, F.R.C.S. Eng. London: Baillière, Tindall, and Cox. 1900.—This little book is mainly a reprint of papers which appeared during 1899 in the *Medical Press and Circular*, but some additional chapters have been added to the original papers. Mr. Gant pleads strongly for the State registration of nurses, arguing that the uncertificated nurse may be an infamous and designing woman. That of late the term "nurse" has been made to cover those belonging to the oldest profession in the world there can be no doubt, and Mr. Gant's picture of masseuses is not overdrawn, but this masquerading of bagnios as adjuncts to medical treatment has now been suppressed by the police. Although there are some private nurses who are not all that they should be, yet Mr. Gant's pictures of the wicked private nurse are overdrawn. The book calls attention to an evil which doubtless does exist to a certain extent, but its message would have been far more forcible if it had been far less exaggerated.

*Silex Scintillans.* By HENRY VAUGHAN. London: J. M. Dent. Pp. 238. Price 1*s.* 6*d.* net.—This edition of a too little known work forms one of the volumes of the Temple Classics which Mr. Israel Gollancs is editing for Messrs. Dent. Vaughan was born in 1622 in the parish of Llansaintfraed, Brecon, being a twin with his brother Thomas. Henry went to Oxford and also studied law in London, but eventually turned his attention to medicine. Where he obtained his diploma is not known, but he commenced to practise as a medical man in 1645. His poems, although marked at times by the love of conceits so characteristic of the times in which he wrote, are generally of very high order. Few English or indeed any poets have written a more majestic passage than the opening of the poem called "The World":—

> "I saw Eternity the other night
> Like a great Ring of pure and endless light,
> All calm, as it was bright;
> And round beneath it Time, in hours, days, years,
> Driven by the spheres,
> Like a vast shadow moved, in which the world
> And all her train were hurled."

He was a good scholar and probably acquainted with the writings of the Neo-Platonists, and in the poem called "The Night" there is a curious echo of Dionysius the Areopagite. The last stanza of "The Night" begins:—

> "There is in God, some say,
> A deep but dazzling darkness ....."

and so Dionysius, "The divine darkness is that light inaccessible wherein God is said to dwell." Messrs. Dent are much to be congratulated for having afforded the opportunity of becoming acquainted with such a writer as Vaughan to many whose purses are not overburdened. The type and paper are all that could be desired.

# New Inventions.

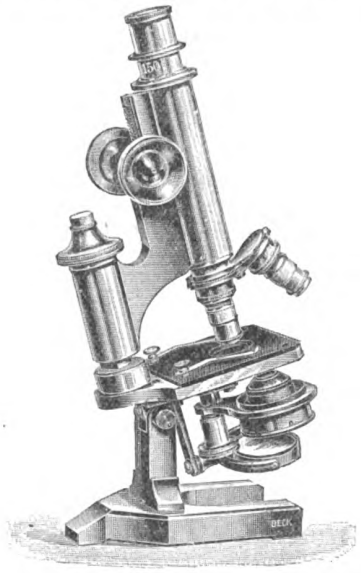
## A SANITARY DUSTBIN.

THE aim to make a dustbin strictly speaking a sanitary receptacle is admirable, and he who succeeded would indeed be recognised as a benefactor, since disease has often been traced to this unsatisfactory method of storing our dust and garbage until it can be taken away. Mr. George Olliver, of 21, Elder-place, Brighton, has made a definite attempt to construct a dustbin on sanitary principles. He has done this by constructing the bin with a base larger than the top with sides converging towards the upper ends but diverging towards the base. The front of the bin is inclined in a rearward direction from the lower to the upper end. The bin is also fitted with a sliding removable bottom, a removable sifter, and a removable lid turning on detachable hinges. The essential points in the construction of this bin would undoubtedly help towards a better state of things in regard to the condition of the refuse contained in it and its removal may be effected with the least possible nuisance arising. But whether it will serve as an improved means of storing and removing house refuse will depend entirely, as is the case with many another excellent appliance however well it may be designed, upon the way in which it is handled and upon what is put into it. Is there any conceivable thing which the ordinary domestic servant does not consider a fit object for the dustbin?

## THE "LONDON" MICROSCOPE.

A GOOD microscope is an essential part of a student's outfit, but makers have found it very difficult to produce microscopes with powers and definition strong enough to be useful at prices suitable to the student's purse. Certain continental makers have, moreover, been able to produce

microscopes for students at lower figures than the English makers have cared to attempt. Messrs. Beck of Cornhill have recently submitted a microscope to us which would seem to be a thoroughly practical instrument for students' purposes. We found it to give good definition and a flat field. The mirror in the cheaper microscope, which has no sub-



stage, works rather too close to the stand to be convenient, otherwise we have nothing but praise for the instrument. The illustration shows its appearance. The price of the instrument in a case, including stand, two objectives of two-thirds and one-sixth of an inch respectively, one eye-piece, and a concave and plain mirror, is £5 12*s.* 6*d.* The addition of the focussing substage and of the double nosepiece increases the price.

## OPENING OF THE MEDICAL SCHOOLS:

### WINTER SESSION 1900–1901.

#### LONDON.

*St. Bartholomew's Hospital.*—The session will begin on Monday, Oct. 1st. The old students' dinner will be held on the same evening in the great hall of the hospital, Mr. H. J. Butlin, F.R.C.S., in the chair.

*Charing-cross Hospital.* — The session will begin on Tuesday, Oct. 2nd, when the Right Honourable Lord Lister, P.R.S., will deliver the third biennial Huxley Lecture, on Recent Advances in Science and their Bearing on Medicine and Surgery. This lecture will be delivered in the Anatomical Theatre of the Medical School at 4 P.M. A conversazione will be given by the students' societies in the school buildings on the evening of Oct. 1st, and the old students' dinner will take place at the Hotel Cecil on Tuesday, Oct. 2nd.

*Guy's Hospital.*—The session will begin on Monday, Oct. 1st, on the evening of which day a house dinner of the Students' Club will take place in the college dining hall. Application for tickets to the dinner should be made to Mr. A. W. Ormond, the secretary of the Students' Club, Guy's Hospital, S.E. The first meeting of the Physical Society will be held in the new Physiological Theatre at 8 P.M. on Saturday, Oct. 6th. Sir Samuel Wilks, Bart., F.R.S., will preside, and a paper will be read by Mr. F. Curtis, Notes from an Ornithological Cruise in the North Polar Seas. After the meeting a conversazione will be held in the new laboratories and class-rooms. All past and present students are cordially invited to the meeting.

*St. George's Hospital.*—The session will begin on Monday, Oct. 1st, with an introductory address by Dr. F. G. Penrose, physician to the hospital. The distribution of prizes will take place early in November, and will be made by Sir Michael Foster, M.P., F.R.S., &c.

*King's College Hospital.*—The session will begin on Monday, Oct. 1st.

*London Hospital.*—The session will begin on Monday, Oct. 1st. The old students' dinner will be held in the college library, Dr. Gilbart Smith in the chair.

*St. Mary's Hospital.*—The session will begin on Monday, Oct. 1st, at 3.30 P.M., with an introductory lecture by Mr. H. S. Collier, surgeon in charge of out-patients to the hospital, and lecturer on practical and operative surgery in the medical school. The annual dinner of past and present students will take place on Wednesday, Oct. 3rd, at the Whitehall Rooms, Hôtel Métropole, Dr. W. B. Cheadle, senior physician to the hospital, in the chair.

*Middlesex Hospital.*—The session will begin on Monday, Oct. 1st, at 3 P.M. Dr. T. Clifford Allbutt, regius professor of physic in the University of Cambridge, will distribute the prizes gained during the previous year and deliver an address. The annual dinner of the past and present students and their friends will take place at the Trocadero the same evening at 7 o'clock precisely, Mr. William Lang in the chair.

*St. Thomas's Hospital.*—The session will begin on Tuesday, Oct. 2nd. The prizes will be distributed by Sir William Mac Cormac, Bart., K.C.V.O., in the Governors' Hall on Tuesday, Oct. 2nd, at 3 P.M. During the afternoon the various departments of the hospital and school will be open for the inspection of visitors. The annual dinner, in which all former and present students are invited to join, will take place the same evening at the Whitehall Rooms, Hôtel Métropole, at 6 for 6.30 o'clock, Dr. C. Taylor Aveling in the chair.

*University College Hospital.*—The session will begin on Monday, Oct. 1st, at 4 P.M., when the Dean's report on the progress of the medical school will be read, after which an introductory lecture will be delivered by Professor G. Vivian Poore.

*Westminster Hospital.*—The session will begin on Monday, Oct. 1st. The annual dinner will take place on the opening day, Dr. William Henry Allchin in the chair. The secretary of the dinner is Mr. E. Canny Ryall. The annual distribution of prizes will take place during the session.

*London (Royal Free Hospital) School of Medicine for Women.*—The school will reopen on Monday, Oct. 1st, when the introductory address will be given by Miss L. B. Aldrich-Blake, M.D., M.S. Lond.

*London School of Tropical Medicine.*—The session will begin on Monday, Oct. 1st.

*Pharmaceutical Society of Great Britain.*—The inaugural address will be given on Oct. 1st, at 3 P.M., by Professor W. Ramsay, F.R.S., of University College, London.

#### PROVINCIAL.

*University of Birmingham.*—The session will begin on Monday, Oct. 1st.

*Yorkshire College, Leeds.*—The session will begin on Monday, Oct. 1st.

*University College, Bristol.*—The session will begin on Monday, Oct. 1st.

*University College, Cardiff.*—The session will begin on Monday, Oct. 8th. The introductory address will be delivered by Sir J. Williams on Wednesday, Oct. 10th.

*University College, Liverpool.*—The session will begin on Monday, Oct. 1st. The Lord Bishop of Liverpool will give the opening address and distribute the medals and prizes on Saturday, Oct. 13th, at 4 P.M.

*Owens College, Manchester.*—The session will begin on Monday, Oct. 1st.

*University of Durham.*—The session will begin on Monday, Oct. 1st.

*University College, Sheffield.*—The session will begin on Monday, Oct. 1st.

#### SCOTLAND.

*Anderson's College, Glasgow.*—The session will begin on Thursday, Oct. 18th.

*St. Mungo's College, Glasgow.*—The session will begin on Thursday, Oct. 18th.

*Queen Margaret College, Glasgow.*—The session will begin on Friday, Oct. 19th.

#### IRELAND.

*Queen's College, Belfast.*—The session will begin on Tuesday, Oct. 16th.

*Queen's College, Cork.*—The session will begin on Thursday, Oct. 18th. The lectures will commence on Monday, Oct. 22nd.

*University of Dublin.*—The session will begin on Monday, Oct. 1st.

# THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 8, 1900.*


IT would be difficult to exaggerate the credit due to the Bishops for their interest in the promotion of legislation for effecting temperance reform. The remarkable discussions in Parliament during the late session must have convinced the Government that both parties in the State are of opinion that Parliament has yet more duties to discharge in connexion with the "superfluous drinking" of the country. The reluctance of the Government to undertake such legislation has impressed both its supporters and its opponents. The preoccupation of the country in the present session has been so complete as to give some colour of excuse to this reluctance, but enough has happened even this year both in the House of Commons and in the House of Lords to show that the country is in no mood to allow the results of the work of the Royal Commission on the Liquor Laws to be regarded as waste-paper. It was inevitable that there should be some difference of opinion in the Commission, but the enormous pecuniary interests involved and the popular habits of the nation were a security that no free play would be given to intemperate teetotalism desiring to treat men as children and Englishmen as Mahomedans. On the other hand, various influences have come into play in the cause of true temperance which cannot be ignored. Some great physicians and surgeons have sounded a note of warning and made it clear to all intelligent people that the present scale of consumption of alcohol has no reason in sense or science, and that alcohol generates disease wholesale, physical and mental, and is responsible for 25 per cent. at least of our insanity and for a very large proportion of our vice and crime. One of the most remarkable facts in this discussion of late years has been the significant and ominous emphasis with which our military leaders have advocated temperance and have insisted on the partial or total exclusion of alcohol from the diet of their troops in time of war. The tone of their testimony could scarcely have been more earnest if they had seen some great catastrophe due to the careless use of alcohol. We all know how disastrous the habit of drink may become in the case, say, of a medical man charged with the care of an individual life at a crisis of accident or disease. *A fortiori* is the use of alcohol fraught with peril to men who are charged with great responsibilities as are soldiers and sailors. This has been now widely recognised, and above the enjoyment of alcohol which characterises us as a nation there has risen a public opinion—intelligent, moral, and religious—which demands that alcoholism shall be restrained, and must be restrained if sanitation and social happiness are to be advanced, and if the nation is to hold its own in the new era of responsibility and competition on which all living and dominant races are now entering.

Amongst the forces which will compel politicians and statesmen to deal with the vice of drunkenness, or as the majority of the Royal Commissioners euphemistically put it, "superfluous drinking," the Bishops have ranked themselves most creditably and they have been well supported by their own clergy and by the ministers of all denominations. They have not contented themselves with setting a good example, but in their elevated place in the legislature they have spoken with no uncertain sound and they have succeeded in showing that in the House of Lords there is a strong feeling in favour of legislation. Since that memorable debate, in which the Bishops nearly defeated the Government, they have occupied themselves in putting into the form of a Bill, or rather of three separate Bills, their legislative proposals, based on those recommendations which were practically assented to by both parties in the Royal Commission. These Bills do not by any means exhaust the recommendations so assented to, and we miss two or three in particular to which we are inclined to attach importance. One of these would very properly give to the licensing authority full control over all "off" wine and spirit licences, including those granted to grocers and restaurants. The demoralisation of women by the grocer's licence is a matter of general belief. Little is said about the demoralisation of the grocer's business by the introduction of the sale of alcoholic drinks, but it is very real. The groceries now play quite a secondary part in the business and tend to recede more and more into back premises. In any new Bill full authority over this kind of licence must be given to the licensing authority. It is vain to talk of curtailing the number of public-houses, perhaps at a great cost, and then to leave uncontrolled the enormous extension of the trade in alcohol which is involved in licences for its sale granted to grocers, confectioners, and druggists. Other points which are not, we think, included in the draft bills of the bishops are control of the licensing of old-fashioned beerhouses, the sale of drink to children under 16 years of age, and the employment by licensing authorities of persons of some social standing to visit and occasionally report on the condition of licensed premises. We attach great importance to this last recommendation, which is made both in the report of the majority and in that of the minority of the Commissioners. It is scarcely to be expected that the police, familiarised with the drunkenness of the street—which, by the way, all the Commissioners regard as an offence—should have a quick eye to the irregularities of publicans. It is highly desirable that there should be a certain number of men of higher position who should inspect the licensed houses of a district.

These are details and they do not touch the underlying question of compensation. This matter must be faced and settled by the Government of the day, fearlessly and on right principles. As a profession we medical men can and should help the Government and urge it to the discharge of this great duty. Every year adds to the difficulty of it. They are no friends of Parliament who advise it to remain with folded hands and cry "non possumus" on this subject. The enormous expenditure on drink—even if drink itself were innocuous—implies a corresponding abstraction of wealth from useful and beneficial uses. But drink is not innocuous. It is the most powerful and fascinating of al

means of degradation and disease which unfortunate human nature can find to debase itself. Every medical practitioner sees illustrations of this almost every day of his life. The drunkenness of women is increasing. Many think that this begins with the grocer, but it certainly does not stop there, for women enter the public-houses in great numbers everywhere. It would seem to us fitting that before the new Parliament begins its duties and even before it is elected the leaders of the medical profession should combine to convince the front-bench representatives of the great political parties that the alcohol question is above all party interests, and that in dealing with it they should act together and act with all their strength. The bishops have set us an example and we of the medical profession have also our religious duties.

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QUESTIONS have lately arisen (1) as to whether it would be legal to conduct occasional dissections of a part of a human body upon private premises not duly licensed for the practice of anatomy; and (2) if such dissections took place upon whom, if discovered and pronounced illegal, the penalty would fall. The Act regulating schools of anatomy is the Anatomy Act, 1832 (2 & 3 Will. IV., c. 75). The idea of the Act was to check the irregular practice of anatomy and the abuses to which such practice gave rise. The practice even led to murder in order to get an ample supply of bodies. Briefly summarised the Act gives to the Secretary of State for Home Affairs the power to grant licences to practise anatomy and to appoint inspectors for schools of anatomy, and it regulates the removal of dead bodies for the purpose of anatomical examination. It also permits (Section 10) "any Member or Fellow of any College of Physicians or Surgeons or any Graduate or Licentiate in Medicine, or any person lawfully qualified to practise medicine in any part of the United Kingdom, or any professor or teacher or student of anatomy, medicine, or surgery having a licence from the principal Secretary of State [in Great Britain] or Chief Secretary [in Ireland] to receive or possess for anatomical examination or to examine anatomically the body of any person deceased" if permitted by the person in lawful possession of such body, &c. But it forbids (Section 12) "any party to carry on or teach anatomy at any place, or at any place to receive or possess for anatomical examination, or examine anatomically, any deceased person's body after removal of the same, unless such party, or the owner or occupier of such place, or some party by the Act authorised to examine bodies anatomically, shall, at least one week before the first receipt or possession of a body for such purpose at such place, have given notice to the said Secretary of State or to the Chief Secretary of the place where it is intended to practise anatomy."

Throughout the Act the word "body" is alone used; and the question arises as to the application of the Act to parts of a body. Would it be lawful to dissect an arm or a leg or a brain on private premises unlicensed for the study of anatomy? In these days of private tutors and "coaches," and of the increasing numbers of students who enter for degrees in science as apart from degrees in medicine, but who want to do a course of practical anatomy, the question is one of some importance. On a literal reading of the law there does not appear to be any objection whatever to limited dissection on unlicensed premises. The Act deals with "bodies" and "bodies" alone. It assumes or expressly states all the way through that anatomists are concerned with "bodies" alone and not with parts thereof. It makes no provision to check the coöperative purchase of a body and the distribution of its component parts for dissection on premises other than those to which the body has been removed. Would the buyer and remover of a leg or a brain, or any other person concerned in buying or removing, come under the penalties set out in Section 18 of the Act? Would a student who conducted dissection of such parts in private be liable? Would the owner or occupier of such place become liable? It scarcely seems that he would be directly liable, but he might indirectly be brought within the grip of the law if, as would perhaps be the case, Section 12 (already quoted) were held to cover all practising or teaching of anatomy, whether the subject be a whole body or only a part. The exact words, as already quoted, refer only to "body"; but the words "it shall not be lawful for any party to carry on or teach anatomy at any place unless such party, &c., shall give notice, &c.," might be held to apply to a part of a body. The interpretation would be strained and scarcely justified at all if the words of the paragraph be read together, and if the words as to giving notice "at least one week before the first receipt or possession of a *body*" be borne in mind. But it is obvious that were such a course allowed as the removal of a portion of a body for the purposes of anatomical examination to any place other than that to which the body was originally consigned in accordance with the Act, the irregular practice of anatomy would become extremely difficult to prevent; and the practice of anatomy in any form in a private house must of necessity be objectionable for sanitary reasons, as well as for the sinister reasons that led to the passing of the Act.

A curious difficulty might arise under Section 13 of the Act even if it were held that no offence had been committed under Sec. 12 or any other section. Sec. 13 provides that every such body removed for anatomical purposes shall be placed "in a decent coffin or shell," and the party removing the same shall arrange for its decent interment in due course. Now if "such body" were deprived of an arm or any portion for private dissection elsewhere would the body to be buried be such body as was removed? Apparently on a strict reading of the law it would be necessary to reconstitute "such body" by bringing together again any part removed for dissection elsewhere before the burial of "such body" could take place as contemplated by the Act. It would be a terrible strain on the words of the Act to maintain that any *portion* carried about must be in a decent coffin or shell, as the use of the term "body" is so explicit. What after all is a body within the law? How many of its members may be lost or removed before it ceases to be a body or a corpse? No legal decisions are traceable on these points. On the whole it would be safer for "coaches" in anatomy and for students who desire to dissect in their homes to apply for a licence before practising anatomy on unlicensed premises, or permitting or conniving in any way whatever at such dissecting. Licences can be obtained by any of the persons enumerated in Section 10 "on

application from such party for such purpose countersigned by two justices of the peace acting for the county, city, borough, or place wherein such party resides, certifying that to their knowledge or belief such party so applying is about to carry on the practice of anatomy." The fee payable to the Exchequer on the grant of a licence is only £2 2*s*., but offences against the Act are misdemeanours and on conviction are punishable by imprisonment for a term not exceeding three months or by a fine not exceeding £50, at the discretion of the court.

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ONE of the most interesting discussions at the recent meeting of the British Medical Association was that on "The Pathology of Cirrhosis of the Liver in Adults and Young Children." The discussion was opened by Dr. ARTHUR VOELCKER, who commenced by giving an interesting historical survey of the views held by various authorities from the time of LAENNEC, who was the first to employ the term "cirrhosis" as applied to the liver. Dr. VOELCKER naturally laid stress upon the efforts that had been made to establish satisfactory classification of the varieties of hepatic cirrhosis. The usual classification adopted was to divide the cases into two main divisions—namely, atrophic and hypertrophic. Some observers were of the opinion that there was no essential distinction between these two forms. An examination of a number of sections of cirrhotic livers had left Dr. VOELCKER with the impression that there was a very distinct difference between the peripheral and the intercellular forms. He considered that while it was true that in the peripheral forms (the multilobular and monolobular forms) a slight degree of intercellular sclerosis existed and while in the intercellular form a slight degree of peripheral sclerosis was met with, yet there was never any difficulty in determining to which category the chief change should be referred; though he did not think that a microscopical section would enable the physician to form an accurate idea of the naked-eye appearances of the organ. Much of the interest of the discussion was derived from the different views as to the origin of the connective tissue apart from the variety—that is to say, as to whether the primary change was in the liver cell and the cirrhosis secondary to this, or whether the fibrosis was primary and the changes in the liver-cells secondary. Dr. VOELCKER regarded cirrhosis as a widespread, recurrent, chronic, degenerative process associated with regeneration of the parenchyma. Opposed to this view was the one that the changes in the liver cells were secondary to the presence of the connective tissue. Although it is true that degeneration of the liver cells is found with cirrhosis, yet the speaker maintained that there was no relation between the amount of cirrhosis and the degree of degeneration. Dr. VOELCKER, after quoting other authorities, suggested that it seemed to be most reasonable to see in cirrhosis of the liver the effects of one or more poisons both in the liver cells and in the connective tissue, and the occurrence of degenerative or regenerative processes would depend on the nature of the poison and on the power possessed by the liver cell to resist it. Professor FLEXNER brought forward experimental evidence that lesions of the liver cells precede changes in the connective tissue, and demonstrated from his specimens the existence of a considerable amount of newly formed elastic tissue in addition to the connective tissue so universally recognised. Dr. LAZARUS-BARLOW from his observations drew the inference that in the case of hepatic cirrhosis there was first a destruction of the hepatic cells themselves, either as the result of the action on them of alcohol or of some form of bacterial poison, and that subsequently there occurred an over-growth of the normal fibrous tissue of the liver to fill up potential lacunæ. He further urged that in any microscopical picture these features would be found side by side; but since the destruction of hepatic cells must be a more or less gradual process—otherwise the onset of the disease would not be so insidious as it undoubtedly was—there was every reason to expect that signs of a rapidly forming and young fibrous tissue would be wanting, and this was found to be actually the case.

Another feature of the subject which occupied the attention of the meeting was the experimental production of hepatic cirrhosis. This aspect in the etiology of the condition has had great attractions for investigators, but a study of the work up to now accomplished by no means convinces us that the suggestion (first brought into prominence by Professor ADAMI) that cirrhosis of the liver is due to a specific micro-organism has been proved by experiment. It is true that localised patches of cirrhosis have been produced in certain lower animals by the injection of bacteria or their products, but no widespread increase of the fibrous tissue, as is seen in hepatic cirrhosis in man, has yet resulted. Mr. A. G. R. FOULERTON presented a contribution to the discussion from Professor LUDVIG HEKTOEN. His investigations showed that in guinea-pigs the subcutaneous injection of about one cubic centimetre of a bouillon culture produced in addition to local changes beneath the skin necrosis with cirrhosis of the liver. These results were, however, by no means constant and in other animals (dogs and mice) the condition of the liver was still less altered. The author of the paper himself went no further than to say that "the observations had seemed to him to be of some interest in their suggestiveness of a somewhat similar course of events in some instances of human cirrhosis." Dr. THEODORE FISHER argued that as some of the acute and sub-acute inflammations of the kidney were due to septic micro-organisms or their products, an interstitial hepatitis might arise in the same way, and he quoted cases which seemed to him to bear out the view suggested by the experiments of Professor HEKTOEN. It is undoubted that occasionally fibrous changes may be produced in the liver by the action of micro-organisms, but there seems to be no proof that the condition generally understood by the term "cirrhosis of the liver" is brought about in this manner. The remarks of Dr. VOELCKER on this point were forcible and even convincing. His experience in morbid anatomy has convinced him that in necropsies in patients who have died after diphtheria, typhoid fever, and other infectious diseases, cirrhosis of the liver is by no means common, and yet if that condition were due solely to bacillary infection these are precisely the cases in which it might be expected that such fibrous changes would be found. And he further pointed out that the chief ages at which cirrhotic livers were found were either in the first two or three years of life or between

the ages of eight and 10 years, and then not again until after 25 years; from this he concluded that the severe and frequent intestinal catarrh, undoubtedly of bacterial origin, to which children of all ages were so prone, could have little, if any, effect on the production of the cirrhosis.

The discussion was of genuine value, for it furnished an opportunity for taking stock of our knowledge of the pathology and etiology of hepatic cirrhosis. That observers are still not unanimous on the many points mentioned in the debate was quite evident; but it was also demonstrated that much useful work is being done in the direction of elucidating the true nature of a common affection. The pathology of cirrhosis of the liver must still be the subject of investigation probably for some time, but such debates do much to stimulate the work of the observer. New recruits are gained to pathology and workers are encouraged either to persevere upon their old lines or to adapt their methods to the methods of other workers—all of which things make for eventual knowledge.

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A CONSIDERABLE amount of interest has been excited by the case of alleged cruelty to a lunatic which was recently decided at Bow-street Police-court. We shall briefly review the facts of this case as revealed in the course of the magisterial examination. ROBERT EDWARD HUTTON, aged 36 years, was a congenital idiot and had resided with his brother, Mr. JOHN HUTTON, who is a medical man, since 1892. A sum of from £80 to £90 per annum was allowed for his maintenance. Until about six months ago he lived in his brother's house, but then his habits, it is alleged, having become objectionable, another arrangement was made. The manner in which this was carried out was as follows, the facts being elicited from witnesses under examination. A bed, bedding, and a few chairs were placed in a harness-room at the end of the stable-yard attached to the dwelling-house. This was the lunatic's sleeping apartment. Close at hand in the yard an area six feet by four feet was fenced off and partly roofed over. A seat was placed within it. This inclosure served as a kind of outside sitting-room for the imbecile. No regular attendance appears to have been provided beyond the services of the coachman attached to the establishment. It was asserted by some witnesses that actual cruelty was resorted to at times and that Mr. JOHN HUTTON had used a cane when his brother was refractory. The evidence on this point was somewhat conflicting, but it was admitted by the defence that a cane had been used chiefly to frighten but occasionally for the purpose of chastisement.

Legal and medical opinions on the case were not quite in accord. Dr. NICOLSON, C.B., one of the Lord Chancellor's visitors in Lunacy, who visited the house under an order of the Lord Chancellor, stated his view that the conditions of the imbecile's life there were prejudicial to him, since he did not receive that careful and constant attention which he required. Dr. HENRY MAUDSLEY, who also visited the house under instructions from the Lord Chancellor, gave similar evidence. Sir FRANKLIN LUSHINGTON, the chief police magistrate for London, who heard the case at Bow-street, himself paid a visit of inspection. His view was that every reasonable care had been taken for the personal comfort of the poor lunatic, and further that the allegations of actual cruelty rested upon no solid foundation. As regards the accusation of cruelty, which is in some ways the most important element in the case, we quite believe that the opinion of the learned magistrate was the right one. And we are glad to think that no grounds exist for suspecting a member of our profession of cruelty towards an unfortunate being who had the double claim on him of being an idiot and a brother. We are, however, convinced that the view taken by Dr. NICOLSON and Dr. MAUDSLEY on the question of adequate supervision and attention is the more correct. We cannot but think that a serious error of judgment was committed in the arrangement by which the lunatic was removed from the shelter of the house and allowed to spend his nights and much of his daily life by himself. Such unfortunate persons require more constant care than other people. For want of this care an accident may occur at any time, and it was by luck rather than through domestic or professional forethought that such an accident did not actually occur. The effect of isolation, moreover, is always more or less to aid a process of mental deterioration where this is present, and it would have been better in every way had this unfortunate sufferer been kept in contact with interesting surroundings. In the end the only offence proved in this case against Mr. JOHN HUTTON was the technical one of housing a lunatic for profit without the customary licence. Such an error might under the circumstances have been almost disregarded, and as a matter of fact very slight importance was attached to it. The position of the imbecile up to the time of his removal from his brother's house was practically that of a boarder among relations, and it was so in virtue of a family agreement conceived with the best intentions. This fact was recognised and only a nominal fine was imposed. The defendant's coachman, who was largely left in charge of the lunatic, was fined £5 for cruelty.

The well-being of lunatic patients, as is now generally admitted, is most surely guaranteed when they are committed to the care of strangers. Experience has abundantly proved that the influence of a relative, however well-intentioned, is not only not salutary, but is even prejudicial. There is a tendency on the part of relatives to be either too kind or too severe. Moreover, we must take into account the reliance which most invalids place on those with whom they are familiar. This reliance constantly opposes by its mere inertia that awakening of the curative power of will which it is the object of all mental treatment to encourage. Then, again, the watchfulness that must be maintained in view of the volcanic impulses of the insane person furnishes another strong reason for his removal to an establishment where it is the every-day rule of the place to anticipate mental explosions. Such a course argues no unkindness but the contrary, due regard being had, of course, to the character of those in whose care he is placed. In the present instance it has proved regrettable in more ways than one that the home system of treatment was preferred, though doubtless the primary motive which prompted this course was that of parental goodwill. Although Mr. HUTTON is himself cleared of the

accusations of cruelty the man whom he constituted his brother's attendant has been fined for cruelty. Again medical men will surely endorse the views of Dr. NICOLSON and Dr. MAUDSLEY that from a medical point of view Mr. HUTTON did not do the best possible for his brother. Granted that he did all that he could in the circumstances, it remains that the circumstances were wrong. The environment in which the lunatic was kept was entirely unsuitable to his condition, and the personal kindness of Mr. HUTTON did not counterbalance the disadvantages of the surroundings.

# Annotations.

"Ne quid nimis."

## THE WORK OF SIR JOHN BENNET LAWES.

IT is most satisfactory to learn that the magnificent work of research which the late Sir John Bennet Lawes commenced in 1837 is to be carried on in perpetuity, according to the provisions of a trust deed which Sir John Lawes executed in 1889. The world-famous Rothamsted experiments do not therefore cease with the death of the man who founded them. This is all the more fortunate since we are only just beginning to learn the nature of the rôle of bacteria in aiding certain plants directly to assimilate the nitrogen from the air. It is curious that the wonderful series of experiments which Sir John Lawes instituted should have led him to the positive belief that plants derived their nitrogen solely from the soil. Before, however, it became known with certainty that bacteria aided in the fixation of nitrogen directly from the air, Sir John Lawes, with his able partner in research Sir J. Henry Gilbert, observed that whilst the nitrogen in most crops can be accounted for by the combined nitrogen supplied to the land in the form of manures and in rain water, yet in the case of particular leguminous crops, such as peas and beans, there is a quantity of nitrogen acquired which cannot be accounted for as being derived from these sources. Chiefly by the conclusive experiments of two German investigators, Professor Hellriegel and Dr. Wilfarth, and of a Frenchman, M. Berthelot, we now know that this nitrogen is derived from the atmosphere, and further that this assimilation of free nitrogen is dependent upon the presence of certain bacteria flourishing in and around the roots of the plants. The greatest of all arguments in favour of this view is that when the soil is sterilised no such fixation of atmospheric nitrogen takes place. Some go so far as to say that microbes made our nitrate kings, the huge beds of Chili saltpetre being regarded as products of the nitrifying organism. Recent investigation has shown that each particular leguminous plant is provided with its own particular micro-organism which leads to the fixation of free nitrogen. Cultivations of these organisms are now prepared for inoculating the soil by means of which the availability of nitrogen is increased which benefits the particular crop. The cultures known as "nitragin" are supplied on a commercial scale to agriculturists, and so far the results have been promising. To Sir John Lawes we owe practically all our knowledge of the requirements of all kinds of growing crops. He showed when nitrogen was needed, when potash was indicated, and when phosphates were demanded. The fruitful observations which he made on these points led to the establishment of an enormous industry in which England still leads the way—namely, the manufacture of artificial fertilisers. He showed how phosphates could be made available for the building up of the plants by treating the insoluble lime salt with sulphuric acid, which results in the production of a soluble acid phosphate known commercially as super-phosphate. Again, Sir John Lawes pointed out the advantage of dressing the ground with ammonia and nitrates, and this discovery of how to minister to plant life has had an enormous influence on the industry and wealth of the world. Ever practical in carrying out his ideas, Sir John Lawes was not behind as a student and exponent of pure science, and the journals of the learned societies contain a wealth of scientific contributions from his pen. A great man has indeed passed away in the person of Sir John Bennet Lawes; but, more fortunate than many great men, the labour of his life will ever remain as a monument of his genius and of his devotion to the best interests of mankind.

## THE ART OF DIAGNOSIS.

THE best reason for cultivating the art of diagnosis is that it is at the root of all success in the practice of medicine. For good practitioners this reason will supersede all others, but there is another one that may be more efficient as a stimulus to some—viz., the fact that in regard to a large section of the cases of infectious disease there is a chance of errors of diagnosis being detected and even published. This fact is illustrated in every edition of the annual report of the Metropolitan Asylums Board Hospitals. In the last number of the report for the year 1899 a list of such errors is given. The principal of these have regard to scarlet fever, diphtheria, and enteric fever. In the case of scarlet fever the errors were 3·9 per cent.; of diphtheria, 7·4; of enteric fever, 17·3. Some error is almost unavoidable, but it should be reduced to a minimum. It is gratifying to know that in regard to all these the percentage of error is considerably less than in the previous year, which we may take as a sign that more care is taken by practitioners and that the provisions for instruction which the cases in the hospitals of the Board afford are appreciated by students. The improvement in the diagnosis of enteric fever is very marked. The great safeguard against error in this disease is not to be in too great a hurry in coming to a diagnosis. A variety of symptoms must be taken into account before other diseases can be excluded.

## TUBERCULOSIS IN A FRENCH NAVAL ARSENAL.

DR. AUFFRET, principal medical officer of the Maritime Arsenal at Brest, does not believe implicitly in statistics, because "the elements from which they are compiled are so seldom gathered under identical conditions." To be of use statistics should, he thinks, not only extend over a lengthened period and be pervaded by a single ruling idea, but, above all, it is necessary that throughout the entire series the same directing hand should control the helm. These three essentials are unfortunately rarely united. And when the prophylaxis of a grave affection like tuberculosis is in question something more than probabilities are needed if we would avoid the imparting of a false direction to our reforms and the throwing away of large sums of public money. Notwithstanding his cautious attitude, Dr. Auffret found it impossible to escape concluding from the records at his disposal that, in spite of modern sanitary discoveries and inventions, the mortality from tuberculous affections amongst the *personnel* under his charge instead of decreasing, as might have been expected, has increased steadily during the past 30 years, until at last very nearly 70 per cent. of the total loss from internal disease could be ascribed to it. The number of operatives and clerks employed in the arsenal being close on 8000—a

strength which has not been equalled, or even approached, since 1871, the year of the war with Germany—the matter is one of considerable importance and accordingly Dr. Auffret was led to institute a minute inquiry into the causes of the mortality with a view to suggesting remedies. The results are embodied in a report to the Minister for Marine Affairs, which was submitted last December, and an abstract of the document appears in the *Archives de Médecine Navale* for June where it occupies three-fourths of the entire space. Among the predisposing causes of the disease the writer mentions (*a*) complaisance or carelessness on the part of examining medical officers. When a candidate with incipient tubercle is allowed to pass he at once becomes a centre of infection. The prevalence of the disease is chiefly due to the personal transmission of germs. (*b*) Defective buildings, walls, and floors; (*c*) insufficient and excessive ventilation; (*d*) overcrowding; (*e*) certain occupations; (*f*) climatic vicissitudes. The mortality from tuberculosis invariably attains to its maximum during the two months that follow the period of greatest cold. (*g*) Home influences. A workmen passes more than half of his time out of the reach of official sanitation. (*h*) Improper food. 85 blacksmiths in consideration of their arduous work receive an extra allowance of wine. "Why should this be?" inquires Dr. Auffret. "It is contrary to the teaching of physiology dating back upwards of 50 years. Our neighbours, who are also our rivals, give additional meat when the work is hard in the form of 'rosbeef'—that is to say, of roasted beef." He proposes, therefore, the substitution of grilled meat in lieu of half the wine. In conclusion, Dr. Auffret says: "At Brest the damage caused by tuberculosis every year may be put down as equal to a sum of from 40,000 to 45,000 francs. I propose to utilise this money in pensioning off men the moment they begin to exhibit symptoms of tuberculosis. The elimination of the poison-carrying workman cannot but lead to a diminution in the number of fresh tuberculous cases and consequently to the progressive lessening of the sum to be distributed." In Dr. Auffret it is clear that France has a capable clear-headed official.

## CURARE IN TETANUS.

DR. B. SCHARLAN[1] states that curare had never met with general favour in the treatment of tetanus, Billroth in his great work on Surgical Pathology and Therapeutics (1871) remarking that it had been used occasionally but had not fulfilled expectations. The following record, however, of two cases of tetanus and trismus treated by curare with recovery in both is interesting. The first case was as follows. A boy, aged 11 years, was admitted to hospital on August 29th with marked trismus and tetanus lasting two days and following upon a wound in the foot inflicted by a splinter of wood four weeks previously. Two weeks after the wound there was pain in the right shoulder, soon after the entire trunk became rigid, and on the following day the neck and arms became involved. Attacks of trismus and tetanus followed later. There was very marked opisthotonos, the abdomen was rigid and tense, micturition was difficult, the temperature oscillating about 100° F. Treatment commenced with a hypodermic injection of one-twelfth of a grain of curare repeated in increasing doses as often as the physiological symptoms of a dose faded away. When a dose of one quarter of a grain was reached the opisthotonos disappeared and the patient was able to open the mouth sufficiently to separate the teeth and drink. To secure sleep at night chloral hydrate was given in the evening. The injections of one quarter of a grain of curare were repeated at first every six or eight hours, but after six days of such treatment the effect became more lasting and only two injections were required in the 24 hours. From Sept. 12th one injection daily was given until Sept. 20th, when it was discontinued. He was after this given a warm bath of 30 minutes' duration every morning. He improved, and on Oct. 5th he was discharged as cured. The second case was that of a boy, aged seven years, with tetanus and trismus, admitted to hospital on Oct. 31st. There was extreme opisthotonos, the superficial and deep reflexes were exaggerated, the temperature was 101·4°, the pulse was 132, and the respirations were 42. The pure alkaloid curarin was given, the dose being one-fiftieth of a grain hypodermically. About 30 minutes after the injection the mouth was somewhat opened and the arms became lax, but the legs remained as rigid as before. Five grains of chloral hydrate were given nightly. The injections of curarin were continued on the same principle as in the previous case. The patient continued to improve day by day. On Nov. 5th he slept six hours during the night, the muscles being quite relaxed. The next day he sat up in bed for the first time. Eventually the stiffness of the jaws and legs entirely passed away and he was discharged cured. In a third case, where the patient was a man, aged 25 years, the same good resulted from treatment by curare. It appeared that with every day the patients lived the prognosis became better, the tetanus poison gradually losing its strength. If no natural sleep set in a hypnotic (chloral hydrate) was given at night. Nourishment (liquid) was administered, and if the sixth day of the outbreak had passed a hopeful prognosis could be entertained.

[1] Jacobi's Festschrift, 1900.

## THE METROPOLITAN WATER-SUPPLY.

THE interest of the monthly report of the water examiner to the Local Government Board is somewhat impaired by the fact that it is always a belated document (for example, the report for the month of June was published in August) and because the greater part of the information supplied is given by the metropolitan water companies. This arrangement, it is to be hoped, will be soon altered, but until the water examiner has facilities for furnishing a perfectly independent report all that can be done is to learn what we can from the available information. It is of interest to note that the average amount of water supplied per head per day was less in the case of each company during the month of June, 1900, than it was during the corresponding month of last year. The greatest reduction in the amount supplied obtained in the case of the Lambeth Company which effected a "saving" of nearly four and a half gallons per individual per day. The report shows that the companies have not yet generally carried out their statutory duties to give a constant water service to all their customers. The Chelsea Company and the Grand Junction Company, however, both profess to give a constant supply to the whole of their districts. In the case of the Lambeth Company three-quarters only of their supplies are constantly given. It would be interesting to know what steps the company are taking to carry out their duties in this respect and an inquiry by the Water Examiner into the matter appears to be indicated. In regard to the quality of the water supplied, Dr. Thorpe, the analyst to the Local Government Board, reported that the Lambeth Company and the Southwark and Vauxhall Company contained the highest proportion of organic carbon and that the water supplied by the Lambeth Company exhibited the "deepest average tint of brown." Improvements have lately been made, we may remark, in the arrangements of the Southwark and Vauxhall Company, but the Battersea filtering station is still in use and both the reservoir capacity and the filtration area of the company are below the standard of the West Middlesex Company, which is by no means too high. In the case of the Lambeth Company the reservoir capacity, judged by the same standard, is less

than one-third of what it should be. In these circumstances the "tint of brown" in the water supplied by the Lambeth Company is not a matter of surprise. The month of June was fine and the state of the untreated Thames water was good throughout. We may, perhaps, with advantage call the special attention of Dr. Thorpe to the state of the water supplied by the Lambeth Company during the periods when the Thames is in flood, to the water pumped from the Battersea station of the Southwark and Vauxhall Company, and to the water filtered at the Thames station of the East London Company. At present the analyses made by Dr. Thorpe are by no means numerous if we may judge from his report of July 6th. The examination of one specimen of the water of each company is hardly sufficient, for the quality of the water, for reasons which we need not specify, is likely to vary from day to day.

## A PRELIMINARY INVESTIGATION INTO THE PREVALENCE OF THE ANOPHELES MOSQUITO AND MALARIA IN CALCUTTA.

THE report of the health officer of Calcutta for 1899 contains, in addition to the record of facts and figures which are commonly forthcoming in official documents of the same character, some interesting information as to what is being done in Calcutta in regard to the part played by the mosquito in the transmission of malaria. Being convinced that mosquitoes of the anopheles type form a link in the transmission of malaria from man to man, although the exact nature of the connexion may not yet be fully understood, the health officer, Mr. J. N. Cook, thought that the time had come for seeing whether any reduction could be made in the fever returns of Calcutta by giving some practical effect to what have hitherto been more or less theoretical considerations. For that purpose he applied for and obtained permission to engage the services of natives who had been trained under Major Ronald Ross, I.M.S., to hunt for anopheles mosquitoes for the prosecution of his scientific work whilst in Calcutta. The object was to discover the places where these mosquitoes bred within the area of the municipality and if possible to kill them in the larval or pupal stage of their existence. The stipend granted to the natives (two of whom were in reality employed in the work) was too small and the time has been too short to allow of much being done; still what has been effected is interesting and instructive. The first thing, of course, was to ascertain the breeding grounds of the anopheles mosquito and this was done. The method pursued was simple and business-like. The natives hunted out and brought the specimens and indicated the places where they were obtained. Their observations were verified by the health officer and others who marked off the exact sites on a map. There were 89 such places discovered in the course of three months and the report furnishes a list of them. Most of them were tanks, but not large well-made tanks containing fairly clean water—for in such the anopheles larva are not found—but small ones containing dirty water and some low forms of vegetation corresponding to the duck-ponds of English villages. There is some reason to believe, by the way, that fish and tadpoles feed on the anopheles larva and reduce their numbers. The anopheles frequents the leeward rather than the windward side of a tank as a rule. The most favourable breeding grounds appear to be shallow ground excavations containing but little water. Some experiments were tried for the extermination of anopheles larva. It was found that they could be quickly killed in pools with kerosine oil, but reappeared again in about a week, so if they were confined to small pools and the breeding-places were not too numerous their extermination would not be a very difficult matter. Most of them could be killed off by kerosining the pools every few days, and the pools could be filled up or drained. The tanks, however, present much greater difficulties, as it is difficult to cover the surface of even a small tank that contains much vegetation with kerosine. Experiments in this direction were by no means a success. Much good would probably be effected by filling up or improving the foul tanks in which anopheles breed. It is doubtful whether tanks of the better class contain enough pabulum for their sustenance, for it must be remembered that the male mosquito is not a blood-sucker and has to obtain sufficient sustenance in the larval state to last him his lifetime. Another important point is that mosquitoes do not generally travel far from their breeding-places but remain under shelter when the wind is strong, so that once exterminated in any locality it is doubtful whether other mosquitoes would come in from outside to any extent. The observations and experiments may be so far regarded as only a preliminary investigation into the prevalence of anopheles, but they are of great medical and public interest.

## HOSPITALS AND LOCAL RATES.

IN our issue of March 10th (p. 715) we referred in our leading columns to the deputation which was received by the President of the Local Government Board concerning the exemption of hospitals and infirmaries from local rates. On May 22nd a select committee of the House of Commons was appointed to consider the matter and its report has just been issued as a Blue Book. We are glad to see that the committee consider that hospitals do relieve the rates and that institutions which minister to the sick poor have claims to exemption from rates at least equal to those which may be urged in favour of any foundation already exempt. The committee recommend that the principle of exemption from rates should be applied to all medical hospitals, infirmaries, or other institutions for the care and treatment of persons suffering from sickness or injury, or afflicted in mind or body, not carried on for profit or gain, and supported wholly or in part by voluntary contributions or endowments, and directly benefiting the rates in the county or district in which they are located to a greater extent than they pay rates. And they further recommend that any Bill introduced to give effect to this principle should confer power upon the rating authorities to deal with the question either wholly or in part, and that where the rating authority does not act under this provision such institutions may appeal to the county council, or such body as is the central rating authority, and that these bodies shall exempt such hospitals or hospital from rates, provided that they come within the above-named definition. We trust that the next session of Parliament may see legislation in accordance with the recommendations of the select committee.

## EPILEPTIC COLONY FOR CHESHIRE.

THE Lewis trustees are to be congratulated on the choice of an object on which to bestow some of the funds at their disposal. They have recently, we understand, purchased an estate near Warford, and here it is proposed to erect extensive buildings for the employment and treatment of epileptics. We do not yet know the particulars of the scheme, but we have no doubt that the trustees will have obtained all the most modern knowledge as to the best method of dealing industrially and medically with large numbers of epileptics. In this country we have much to learn from other nations, especially Germany and America, on this question, and the trustees, we doubt not, will avail themselves of the best continental experience. There is little doubt that there are in every large town a considerable number of epileptics both able and willing to work who

by their unfortunate infirmity are precluded from earning a living, and if these men and women can be reached and transformed into useful citizens a great work will have been accomplished. One thing the projectors of such an undertaking must understand—viz., that the institution should have a considerable endowment. Whatever it may accomplish in the course of years an industrial colony of the character apparently contemplated cannot in its early days be self-supporting. We cordially wish the initiators of this most promising scheme, who are at the same time the donors of the munificent gift, the greatest success in their generous and philanthropic enterprise.

## THE CONCILIATION BOARD.

AT the conference held at Manchester upon Medical Organisation at the beginning of May Dr. J. G. Glover announced that a meeting was about to be held between a committee of the British Medical Association and the committee of the General Medical Council (of which he, the speaker, was chairman) with reference to a conciliation board. The British Medical Association appointed a conciliation board, but the said board has not lasted long, for the council of the Association has just resolved "that the conciliation board be not re-appointed." The subject does not seem even to have been referred to the Association itself, the resolution being the work of the council. Either the General Medical Council must have been wrong in devoting so much time to the proposal or the council of the British Medical Association in devoting so little. Time will perhaps show where the fault lies.

## CONDITIONS PRODUCED BY THE BACILLUS AEROGENES CAPSULATUS.

THE *Boston Medical and Surgical Journal* of July 26th contains an important paper by Dr. Welch of the Johns Hopkins University on the pathogenetic rôle of the "bacillus aerogenes capsulatus," an organism first described by him in 1891. Dr. Welch has collected 46 cases of emphysematous gangrene in which the bacillus aerogenes capsulatus was found.[1] In the great majority of cases the bacillus was evidently introduced through a wound from without. Those injuries in which there was much laceration and crushing of tissue, comminution of bone, and grinding of dirt or foreign bodies into the tissues, such as compound fractures and bullet wounds, were the most likely to be followed by emphysematous gangrene. Severe traumatism, however, was not essential. In five cases the gangrene followed hypodermic injection and infusion of saline solutions. We have recently referred to cases of gaseous abscesses following hypodermic injections described at the Société Médicale des Hôpitaux of Paris and attributed to an organism termed by Veillon and Zuber the "bacillus perfringens."[2] This bacillus Dr. Welch believes to be identical with the one described by him. In three of Dr. Welch's collected cases (one of removal of the appendix vermiformis, one of strangulated hernia, and one of rupture of the rectum) the infection came from the intestine. The prognosis of emphysematous gangrene is now more favourable than in the pre-antiseptic period; in Dr. Welch's series the mortality was 59 per cent. But when the disease is accessible to surgical treatment, is not complicated by other grave conditions, and is promptly treated the prognosis is not unfavourable. Prophylaxis is obvious. The cases were treated by free incisions, by amputation, or by both. The results were better after amputations than after incisions. In certain uterine infections the gas bacillus has been found, and the occurrence of emphysema in the dead fœtus has been known for centuries. In 1897 Dobbin published a paper in the Bulletin of the Johns Hopkins Hospital on Puerperal Sepsis due to Infection with the Bacillus Aerogenes Capsulatus. During the life of the patient, gas and the gas bacillus were recognised in the fœtus, placenta, and cavity of the uterus; and after death there was general gas formation throughout the body. In another case in which the patient made a good recovery without sepsis, crepitation of the caput succedaneum was recognised while the fœtus was in utero. The bacillus is the chief cause of physometra, which was present in Dobbin's first case and is often associated with emphysema of the dead fœtus, but which may occur without it, and even in the non-pregnant uterus. Emphysema of the uterine wall is another and far graver result. Physometra is a necessary accompaniment unless the cervical canal is open and permits escape of the gas. The urinary tract may be not only a portal of entry of the gas bacillus into the circulation but also the seat of infection. In a case of urethral stricture with cystitis treated by perineal section gas bacilli were found three-quarters of an hour after death in large numbers in the bladder, ureters, and renal pelves, and a few bubbles and bacilli were present in the blood of the right ventricle. Gas may be found free in the bladder, ureter, or renal pelvis. The intestine is the commonest source of the gas bacillus, and invasion from it may result in the production of gas in the peritoneal cavity. Submucous and subserous gas cysts may also be formed. In the pleura the bacillus may give rise to pneumothorax without perforation.

[1] THE LANCET, July 21st, 1900, p. 205.
[2] THE LANCET, April 7th, 1900, p. 1021.

## HOUSING OF THE WORKING CLASSES ACT, 1900.

THE Local Government Board has issued a digest of the provisions of the several parts of the Housing of the Working Classes Act, 1890, as amended by that somewhat meagre piece of legislation, the Housing of the Working Classes Act, 1900. The principal alterations effected by the latter are in respect of procedures under Part III. of the Act of 1890. This is the part which enables urban sanitary authorities with the sanction of the Local Government Board, and rural authorities with that of the county council, to purchase land and erect, or contract for the erection thereon, of "lodging-houses for the working-classes"—a phrase which includes "separate houses or cottages for the working-classes, whether containing one or several tenements." Part III. does not in any case come into force in a district until it has been adopted by the sanitary authority. The Act of 1900 makes adoption easier in rural districts by doing away with several of the obstacles created by the Act of 1890; moreover, in certain contingencies the county council will now have power themselves to adopt and enforce Part III. in any rural district in the county if they are satisfied that the district council concerned has been in default in "properly exercising their power of adopting and acting under" this part of the 1890 Act. In the event of land being purchased compulsorily, and in default of agreement, compensation is now to be settled by a single arbitrator appointed by the Local Government Board. Also it is made possible for district councils to lease land purchased by them under Part III. for the purpose of erection of working-class dwellings by private enterprise, subject to certain conditions being complied with. The new Act, it will be remembered, has now made it practicable for an urban authority to establish or acquire lodging-houses for the working-classes outside its district—a provision of great importance in the case of large towns. Whether these amendments will lead to more general use by sanitary authorities of their powers to provide working-class dwellings remains to be seen. At present no rural and very few urban districts have done anything in this direction. Lord Shaftesbury, some years after

he had been instrumental in obtaining three separate Acts relating to housing of the working classes, expressed in 1884 the opinion that there was no man living besides himself who knew of their existence. Now, however, public opinion is becoming more and more interested in the matter and there are many who, with some show of reason, regard existing legislation as giving inadequate opportunities of reform. But whether or not this is so cannot, after all, be satisfactorily determined until public health authorities in considerable number, both in urban and rural communities, have made serious effort to avail themselves of the considerable machinery which is at present at their command.

## GLASS IN THE STREETS.

THERE is one dangerous nuisance, specially annoying to cyclists but not without its serious aspects for other people and for animals, which should if possible be put a stop to—namely, the throwing of broken glass into the roadway. The quantity thrown out into the streets of our large cities is enormous. At a recent meeting of Manchester Cleansing Superintendents, Mr. Hamblett, of the Salford Cleansing Department, said that last year 97 tons of broken glass were taken from the refuse destructors and 224,742 unbroken bottles of various kinds. The *Manchester City News* estimates that the broken glass represents 650,000 bottles, worth about £3000 retail, and that the whole bottles would be worth another £1000. Children are said to be the chief offenders, but as shopkeepers and publicans generally require the deposit of 1*d*. per bottle the loss falls on the parents. The parents should, of course, teach their children better, but as the responsibility for their education and bringing up nowadays sits lightly on them perhaps the schools—board or voluntary—might come down occasionally from the "higher grades" to give some really useful lessons bearing on conduct. The same paper says that if the Salford average holds good for Manchester the bottle tax will be £10,000 a year and the glass would equal 2,200,000 bottles. Much broken glass gets carried with manure into gardens and fields, to the injury sometimes of the workers. What should be done with waste glass is a question, but if glass-works cannot re-melt it at a profit it might be sufficiently fused in the destructors to be rendered harmless and used in road-making.

## ACUTE POISONING BY TRIONAL.

DR. WARREN COLEMAN of New York records in the *Medical News* of July 28th, 1900, a rare and interesting case of acute poisoning by trional. The symptoms of poisoning by this drug have been said to consist of vertigo, loss of equilibration, ataxia, nausea and vomiting, diarrhœa, stertorous breathing and cyanosis, tinnitus aurium, hallucinations, and hæmatoporphyrinuria. The case recorded by Dr. Coleman is that of a woman, aged 35 years, who was suffering from a mild delirium brought on by an excessive indulgence in champagne and alcoholic drinks for several days. Six trional powders (of 15 grains each) were ordered to be taken, one every half hour for two hours. The patient became drowsy and sleepy and on the third day it was found difficult to rouse her. There were no disturbances of respiration or circulation to be detected by ordinary clinical examination. In answer to questions she replied that she was "dizzy and sleepy." Her speech was thick and she walked with difficulty, the gait being ataxic. She showed no sensory disturbances and the urine was free from hæmatoporphyrin. Upon inquiry it appeared that she had taken trional far in excess of the prescription and to the extent of nine drachms (540 grains) in 72 hours, the original prescription having been repeatedly made up at the stores. The patient was ordered a saline purge and she gradually recovered from her state of trional intoxication. The above case shows that trional is free from excessive depressing effects even when taken in maximal medicinal doses, and that even when by accident enormous doses are taken the result need not be necessarily fatal. The development of hæmatoporphyrinuria should always be looked upon as a danger-signal in cases of administration of trional or sulphonal, and the use of the drug should be discontinued until this symptom has passed away. Attention may be here recalled to a case of the sulphonal habit ending fatally which was recently recorded in these columns.[1]

## THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

WE publish in another column a correspondence between Sir James Crichton-Browne and Mr. B. Burford Rawlings, which sheds an interesting side-light upon the proceedings at the extraordinary general meeting of the governors and subscribers of the National Hospital for Paralysis and Epilepsy held on August 11th last. It appears that the extraordinary meeting was packed to this extent, that friends of the board of management received special notice of it which was not extended to friends of the medical staff. Can the people who thus divide the supporters of the hospital into two sharply defined classes be called friends of the hospital as a whole?

## SUBPHRENIC ABSCESS FOLLOWING APPENDICITIS.

IN the August number of the *Cleveland Journal of Medicine* Dr. J. F. Baldwin records two cases of subphrenic abscess following appendicitis. The first patient was a woman, 49 years of age, who suffered from appendicitis at intervals from 1894 to the end of 1898. In March, 1899, she complained of great pain and tenderness in the region of the appendix and along the ascending colon, with enlargement and tenderness of the liver, this enlargement being distinctly downwards. She lost considerable flesh and had constant elevation of temperature and pulse. On June 6th a greatly elongated and catarrhal appendix was removed. The right lobe of the liver could be easily palpated and was much enlarged; the enlargement seemed symmetrical and smooth, but owing to the patient's stoutness a thorough examination was not possible. Convalescence was satisfactory, but a little elevation of temperature persisted which could not be accounted for and the former pain and soreness recurred above the situation of the appendix. The liver was apparently greatly enlarged. There were no chills or sweats. On July 20th a chronic abscess was found pointing on the right side at about the tip of the twelfth rib, and when opened just below the twelfth rib it gave exit to an enormous amount of pus, leaving between the liver and the diaphragm a cavity the limits of which were beyond the reach of the fingers and which closed in about six weeks. The second patient was a female, aged 16 years, from whom a gangrenous and perforated appendix was removed on July 26th, 1899. A good recovery was made as regarded the operation, but from about August 10th she continued to have irregular fever, with rapid pulse and profuse perspirations. The liver became depressed below its proper position so that the lower border was some three fingers' breadth below the ribs. On August 28th an incision was made just below the border of the ribs and parallel with them. The liver was normal and a collection of pus of the size of a small orange was found between it and the

[1] THE LANCET, July 28th, 1900, p. 269.

diaphragm. Convalescence was prompt, the abscess and wound healing thoroughly in about two weeks. Dr. Baldwin has only been able to find records of 43 cases previous to his own, many of them having remained unrecognised until the necropsy. He says that the diagnosis must be based upon the continuance of the symptoms of infection after the removal of the appendix or after the subsidence of the inflammatory symptoms in the region of the appendix. There will also be some tenderness in the region of the liver, with a depression of its lower border owing to the accumulation of pus and exudate between its upper surface and the diaphragm. He recommends an infracostal incision made rather well back on the right side.

## LUNACY IN VICTORIA.

IN his annual report for 1899 Mr. J. V. McCreery, inspector of lunatic asylums in the colony of Victoria, states that the total number on the books of the asylums on Dec. 31st, 1899, was 4398, as against 4394 on Dec. 31st, 1898. The distribution of patients in the public lunatic asylums was as follows:—At Yarra Bend, 774; at Kew, 954; in the Kew Idiot Asylum, 231; at Ararat, 700; at Beechworth, 653; at Sunbury, 682; at Ballarat, 256; the remaining cases were either out on probation or boarded out. On page 13 of the report it is stated that the admissions during the year numbered 785 persons, 426 being males and 359 being females. This was the highest yearly number recorded since the asylums were opened. The general population of the colony at the end of the year was estimated at 1,180,878, and on this basis the ratio of the insane admitted during the year to the whole population would be 1 in 1504. In Victoria there was one lunatic in every 268 persons. Mr. McCreery considers that "there is strong reason to believe that a lesser percentage of our (i.e. the Victorian) population become insane now than 30 years ago." The patients discharged recovered were 352 in number, showing a percentage of recoveries of 44·44. The number of deaths was 348, the percentage of deaths on the average number resident being 8·27. The net weekly cost was 8*s.* 4*d.* Private asylums are not permitted in Victoria and Mr. McCreery recommends that the Lunacy Department should improve the existing accommodation for paying patients.

## HYSTERIA IN BOYS AND YOUTHS.

UNDER the above heading Dr. Arthur Hall of Sheffield gives in the August number of the *Quarterly Medical Journal* records of eight rather unusual cases, all of which had been diagnosed at some period or other as examples of organic nervous disease. One case was that of a boy, aged nine years, who walked with a staggering gait not unlike that of cerebellar disease. He could sit up in bed unsupported, but when he held his hands straight out in front of him there were some jerky movements as well as similar ones of the head and tongue. His walk was peculiar: when once set going he could walk in a fairly straight line, but directly he attempted to come to a standstill he reeled backwards with an inclination to one or the other side indiscriminately. He kept up this condition with great consistency until one day he was tired out and for a few moments he stood quite still. After this he staggered for some time badly, but a complete cure was effected by setting the magnetic interrupter of a faradaic battery in motion and warning him that it might have to be applied. Another case was also that of a boy, aged nine years, who was said to suffer from headache, squint, and diplopia. He alleged that he saw double anywhere within two feet of him, but not beyond that. Dr. Hall could not find any strabismus and had reason to doubt the diplopia, as although the boy saw two fingers when one was held up, yet when two were shown to him he said that he saw three. The symptoms all disappeared under treatment. Another case was that of a labourer, 21 years of age, whose symptoms simulated Jacksonian epilepsy. He had a somewhat unsteady gait and difficulty in coördinating his movements. While being questioned he complained of an attack of headache, then was suddenly seized with twitchings of the left arm and to a less extent of the left leg. He then gradually lost consciousness; his mouth and face also twitched. When he was examined in bed a large rounded pulsating swelling was felt on the left side of the head, under which the bone was absent, evidently a bulging of the cerebral membranes through an old trephine hole. After a few days Dr. Hall felt sure that the patient was shamming. The correctness of this view was proved by the patient on hearing it said that his case was one for an asylum or the police, recovering quickly and taking his discharge next day.

## THE SCHEDULING OF CARBOLIC ACID.

CARBOLIC acid is now a poison within the meaning of the Pharmacy Act, and in accordance with the provisions of the Privy Council Order it can only be sold by retail by registered persons. The vessel containing liquid preparations of carbolic acid above a minimum strength must now be distinctly labeled with the name of the article, with the word "poison," and with the name and address of the seller. The Order came into operation on Sept. 1st and the resolution of the council of the Pharmaceutical Society, in which carbolic acid was declared to be a poison within the meaning of the Pharmacy Act, 1868, was approved by the Privy Council on July 26th, 1900. There has, therefore, been some expedition exercised in getting this Order made law; and we are glad that this is so, considering the great number of lives that have been purposely as well as accidentally lost through the indiscriminate way in which the poison was hitherto sold in unrestricted quantity to the public. But the wording of the Order needs amendment. It states that "liquid preparations of carbolic acid and its homologues containing more than 3 per cent. of those substances" shall be deemed poison within the meaning of the Pharmacy Act, 1868, in accordance with the second part of Schedule A. Round the exact meaning of the word "homologues" much discussion is certain to turn, and, moreover, there are homologues of phenol which are non-poisonous. If we are not mistaken the word "homologues" will sooner or later have to be removed from the Order, and the precise substances which it is intended that the new Act shall include exactly specified.

## EPILEPTIFORM CEREBRAL DISTURBANCES ACCOMPANYING CONVALESCENCE FROM TYPHOID FEVER.

EPILEPTIFORM attacks during convalescence from typhoid and other acute fevers are decidedly uncommon. Professor F. Muhling of the German Hospital in Constantinople records in the *Münchener Medicinische Wochenschrift*, No. 7, 1900, an interesting phenomenon following typhoid fever in a patient, 23 years of age, a man of strong constitution, of good previous health, and with a good family history. In November, 1898, he became ill with typhoid fever, in the course of which he slept much and suffered from delirium at night. In the first week of the illness there was a sudden and marked fall of temperature the cause of which was not known. He gradually convalesced from the fever and on the twelfth day of convalescence, while in bed, he developed an epileptiform attack. The fingers of the left hand exhibited clonic spasms which then affected the left

eyelid and became generalised. The spasms lasted half an hour, during which time the pupils were widely dilated and did not react to light. After an interval of three hours there was a second attack which lasted 20 minutes, and five hours later there was a third attack lasting ten minutes. Both of these attacks had a course like the first. Six hours later a fourth and final attack supervened and this continued —with short intermissions lasting each from one to five minutes—for an hour. The patient was conscious and felt well between the epileptiform attacks, but after the last attack he suffered from symptoms of numbness and formication in the two outer fingers of the left hand. The urine was normal and there was no cardiac abnormality. The patient was put on bromides and made an uneventful recovery after this. The exact cause of the cerebral disturbances could not be traced, the question whether they were due to a small embolus or other cause of acute local cerebral anæmia being left open.

## THE PRESIDENTIAL ADDRESS AT THE BRITISH ASSOCIATION.

THE meetings of the British Association are a carnival of science. That is to say, we think that it may be taken without contradiction that the festival and the social side of science are more in evidence than the real work and toil of it. Excursions with an archæological or architectural substratum are much favoured, and were it not for these the meetings would probably be sparsely attended. This being so Sir William Turner is to be congratulated on the success of his bold attempt to lay before an audience composed in great part of men and women who take an intelligent interest in science without knowing very much about it an account of the processes of biology. But we fear that to many his account of the cell and its life, of karyokinesis and of cell cleavage, clearly expressed as it was, must have been somewhat unintelligible. Those who have watched the actual processes under the microscope will recognise how simply and plainly Sir William Turner, a master of his subject, has formulated the stages of karyokinesis; but to the average scientifically minded layman the terminology will seem as obscure as, for instance, an account of a bull fight with its references to the various feints and passes of the chulos and the matador is to the non-expert. We hope we do not wrong Sir William Turner's audience in believing him to have been above the heads of many of them. But if their technical knowledge enabled them to follow him we are sure that they must have been profoundly interested, for the study of the life processes in the cell is one of absorbing interest as a step on the journey towards that knowledge which at present seems unknowable. The evolution of the human race is perhaps the greatest problem with which we have to grapple and Sir William Turner well said: "Though from the nature of things the order of descent is, and without doubt will continue to be, ever a matter of speculation and not of demonstration, the study of the subject has been a valuable intellectual exercise and a powerful stimulant to research." When we consider how little we know we need not be downcast, for we can consider at the same time what enormous advances have been made in our exact knowledge even in the present century.

## THE ETIOLOGY OF "CANCER."

OF recent years many attempts have been made to discover the true cause of malignant growths, and one of the most valuable of these investigations was carried out by a committee appointed by the Birmingham and Midland Counties Branch of the British Medical Association. The committee was appointed in March, 1898, and their report was published in the *Birmingham Medical Review* in May, June, and July of this year. The investigation was limited to the counties of Warwick, Stafford, Salop, and Worcester, but it was found impracticable to obtain information with regard to every registration area. The committee drew up a circular mentioning the points on which information was desired and a schedule for tabulating the cases. The circular asked that the percentage of deaths from malignant disease in the whole district, and in each of the parishes comprised in it, might be ascertained, and that an accurate description should be given of the physical conditions of the districts where malignant disease appeared to be most prevalent. It was further requested that special attention should be paid to the situation and surroundings of any house or row of houses where malignant disease had occurred with marked frequency. Returns were obtained from more than 50 registration areas, with a population of more than 860,000, and 5300 cases of malignant disease were tabulated. The report deals at great length with the returns from every district, and these are of much value, but most interest will be felt in the conclusions at which the committee have arrived. The first point established by the returns is that there are certain areas in which the mortality from malignant disease is noticeably above, and others in which it is markedly below, 0·58 per 1000 per annum, the average for England and Wales. For instance, in the Shipston-on-Stour sub-district every parish except one has a mortality from "cancer" of over 1·15, while in the Foleshill registration area nearly every parish has a mortality from this cause below 0·47. The physical conditions which are found where "cancer" prevails are contamination of the soil with sewage and a general lack of drainage. There seems to be no definite connexion between the geological characters of the subsoil and the prevalence of "cancer." Evidence is also adduced that there is a special tendency to the occurrence of malignant disease in certain houses or groups of houses, and on the whole "cancer" is more common in old than in new houses and districts. The investigation has certainly accomplished all that could have been expected from it.

## CONSTIPATION FROM ATONY AS A FATAL DISEASE.

CONSTIPATION is one of the commonest ailments of civilised life and its relative frequency among people otherwise healthy leads us to regard it not so much as a disease but as the natural result of artificial conditions acting upon a healthy body. It may be due to either sluggishness of the peristaltic action of the intestines or to increased resistance to expulsion offered by the fæcal matters owing to hardness and dryness of fæcal masses. Mr. Robert Brummitt records a case of constipation as a fatal disease *per se* in the *Australasian Medical Gazette* for March, 1900. The story is very instructive and almost unique. The patient was a boy who since his birth in 1884 had suffered from chronic sluggishness of the bowels with constipation. Careful examination of the abdomen and of the rectum showed nothing abnormal save a few external hæmorrhoids. Every therapeutic means had been tried—unsuccessfully—to relieve his trouble. Laxatives and aperients, intestinal and general tonics, regulation of diet, massage, enemata of various kinds and irrigation, and faradaic electricity had been employed, but to no purpose. The relief occasionally obtained by a partial evacuation of the bowels aided by one of the above therapeutic means was only temporary. He continued to grow ill and to lose flesh, and eventually died in an emaciated condition at the age of 16 years, the immediate cause of death being peritonitis, his weight being only 60 lb. At the post-mortem examination it was found that the cæcum and the ascending and transverse colon were full of scybalous masses, which were

so hard that they could not be indented with the finger. Careful examination failed to disclose any constriction or obstruction in any part of the intestinal tract or any abnormality in its attachments to the abdominal and pelvic walls. "In the absence of marked organic lesions," says Mr. Brummitt, "I suppose this boy had congenital weakness of the intestinal walls probably due to defective innervation. This may have possibly conduced to abnormal dryness of fæces. He certainly had during the last few weeks fæcal obstruction and during the last few days peritonitis." If the causation was defective innervation of the intestinal walls, with consequent muscular atony, the various therapeutic means employed could give only temporary relief.

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RECOVERY in a case of true generalised septic peritonitis is exceedingly rare. It is almost impossible to imagine that it ever occurs without treatment by an operation, and even when a laparotomy has been performed it can hardly be thought that it is possible by any amount of sponging or flushing to disinfect so large and irregular a cavity as the peritoneum. Yet cases are recorded. We publish one this week, which was under Mr. H. A. Duffett's care, in which practically the whole peritoneum was affected, and yet flushing was followed by recovery. A possible explanation of the successful issue in some at least of these cases is to be found in the variety of septic organism present; if this should be one of the less virulent forms the peritoneum is capable of dealing with it provided that the germ is not present in overwhelming numbers. Mr. Duffett is to be congratulated on his result.

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A TELEGRAM from Earl Beauchamp, the Governor of New South Wales, to Mr. Chamberlain, received at the Colonial Office on August 29th, says, "I have to transmit subjoined bulletin of the incidence of the bubonic plague at Sydney up to August 25th, 1900—namely, remaining for treatment August 18th, seven; admitted during the week, none; discharged recovered during the week, four; died during the week, none; remaining for treatment, August 25th, three; total cases, 303; total deaths, 103; total discharged recovered, 197; total contacts isolated, 1707; total contacts remaining, none; total cases among contacts, seven; total Chinese attacked, ten; total deaths among Chinese patients, eight."

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A REUTER'S telegram from Buenos Ayres on Sept. 3rd states that a case of plague has been notified there.

## THE WAR IN SOUTH AFRICA.

GREAT, and on the whole successful, progress has been made since we last wrote about the war in South Africa and the military situation has greatly improved. Officially speaking the war is ostensibly over, notwithstanding that the Boers may retreat to the hills and fastnesses of the Lydenburg district and give us much trouble by maintaining a mountain or guerilla warfare. So long as the Transvaal Government were able to pay for the munitions of war and the Boers had control of the railway from Machadodorp to Koomati Poort it would have been impossible to stop them from obtaining supplies, but the continuance of the war all depends now upon the quantities of these they have stored up. General Buller's division has been vigorously pressing in their pursuit, and he is at the time we write close to Lydenburg. The columns and divisions under the command of the other generals are also making a concerted movement and converging in pursuit of a definite strategical object. It has to be borne in mind, however, that General Buller appears to be in front of an almost impregnable position in the Lydenburg district at the present time and that the garrison of Ladybrand has been relieved only just in time. The general tenour of Lord Roberts's latest despatches would imply that much still remains to be done and that an army of occupation may expect to have a good deal of trying work before it.

The fever season in the low-lying malarious districts about Lydenburg will soon be setting in and much sickness from malarious fever may be expected to follow the occupation of the bush veldt hereabouts by the Boers; or by the British troops, on the other hand, if they have to invade and attack them there. The country and the nature of the fever may be said to resemble very closely those met with in the Peshawar valley at the same season. The facts of the Boers having released their British prisoners and having exhausted their Mauser ammunition show that they are hard pressed for food and munitions of war. The redoubtable De Wet is still at large. Our future difficulty will mainly be the old difficulty—namely, an insufficient supply of horses, for the maintenance of mounted troops will be necessary to counteract raids and capture the raiders. For the rest, Lord Roberts's proclamation of the annexation of the Transvaal by bringing home to the Boers and burghers that they will henceforth be regarded and treated as rebels may be expected to convince them that they have everything to lose and nothing to gain by further resistance.

So far for our prospects as regards the military and medical position. As for the political situation, we think it must be patent to all that the policy of the present Government in respect of this war has been greatly strengthened by the publication of the private and confidential correspondence captured at Pretoria. Mr. Chamberlain could have desired nothing better in order to justify and indicate his position in regard to this rebellion (for rebellion it was) of the Republican States in South Africa than the publication of these documents. The letters of Sir Henry de Villiers, who is by birth, family connexions, and association an Afrikander, which were written before the war, and those of Mr. Merriman, a political partisan of the Dutch, are strongly condemnatory of the course and policy pursued by President Kruger and President Steyn, while warning them at the same time as to what the consequences must inevitably be. To all those who have regarded the war as an unjust one or who had any conscientious misgivings and doubts about the part which this country felt compelled to take in it, a perusal of these letters—written prior to the war by men of character and judgment who were most friendly to the South African Republics—must, we imagine, tend to dissipate any doubts they may have entertained on the subject. Turning, however, to matters coming more strictly within the purview of medical journalists we may say that we have read a great deal in lay papers on the hospitals and the medical administration of the war in South Africa. The statements will be followed by others of an equally voluminous, conflicting, and unsatisfactory character so far as forming any guide to a useful judgment is concerned. The whole matter is, as we know, being investigated by a Royal Commission on the spot. Those who are, after all, in the best position to know the facts and to speak about them are the medical officers, their subordinates, and their patients, together with the headquarter staff and those who have taken part in the campaign. These are prohibited from writing to newspapers; and the large majority of them, at any rate, have not done so. We must, therefore, be content to wait and suspend our judgment until the truth or otherwise of the allegations has been thoroughly investigated—until the grain has been sifted from the chaff. For our own part, we are not only content to wait but are compelled to do so owing to the impossibility, as well as obvious unfairness, of adopting any other course.

Touching the course taken by Mr. Burdett-Cout M.P., we see no reason for altering or modifying the position which we originally assumed. Considering the great gravity of the statements made by him in his initial communication to the *Times*, the deplorable condition under which he described the sick and wounded in our army hospitals to be labouring, and all the anxiety and pain which such statements must inevitably cause to their relatives and friends, we consider that it was his paramount duty to have insisted upon seeing Lord Roberts in the first instance and to have personally represented the facts to him and to those of his immediate staff who either had the power to remedy the alleged evils or to afford them, if that

were impossible, an opportunity of explaining the circumstances and of saying how soon they would be remedied. If Mr. Burdett-Coutts had any practical suggestions to make he should first of all have put them forward in the proper quarters. Moreover, he should, in our opinion, have spared no pains to see whether he could have obtained the requisite aid and any supplies, of which he considered there was such urgent need, from some one or other of the various aid societies in South Africa. We also think that, even if he had made any effort in his power and failed, he might still have forwarded a written statement of the case to Lord Roberts and requested an interview with him or with the Chief of the Staff before having recourse to the press for the publication of his harrowing details. Mr. Burdett-Coutts must, at any rate, have known that a forced march had for very pressing military reasons been made, that the army had altogether outmarched its supplies, and that there was an exceptional strain on the army and the transport when the troops reached Bloemfontein, and he must have been acquainted with all the conditions which had preceded and followed the capture of that place.

It is to be proved how far the calamitous amount of sickness—from enteric fever, for example—should have been foreseen and could have been prevented, and whether, under the circumstances, any better hospital provision could have been made than was made, and if so who was responsible? That is what the Royal Commission have to determine. Even allowing for the sake of argument that there was any amount of negligence and want of foresight on the part of the medical staff, it must be admitted that much of what has appeared in the public press in the shape of correspondence and otherwise in regard to the state of the hospitals and the medical arrangements of the campaign generally is either unfounded, exaggerated, or irrelevant, the evident result of wounded vanity, or founded upon ignorance or ridiculous assumption. Although some of the productions, on the other hand, are written by those well qualified to give an opinion and contain criticisms which are deserving of every consideration, this is far from being the case with many of them. No impartial person, we think, who has read Sir Redvers Buller's emphatic and indignant protest against the accusations which have been brought against the officers of the Royal Army Medical Corps and the hospitals of the British army in Natal can have any doubt on that point. To read some of the letters in the press it would seem as if the members of the Royal Army Medical Corps were not all professionally qualified men, that they had not been educated at universities or medical schools or passed examining boards like the other members of the profession, and afterwards competed for appointment into the army. One person, for example, considers that having himself gone through a six months' course of medicine and surgical dressing in one London hospital, and been a patient for three months in another, he is qualified to give an opinion on the merits (or rather demerits) of those who have spent as many years as he has months in the study of their profession in order to qualify for the practice of it. He passes an unhesitating judgment as to the proper methods to be pursued in certain surgical procedures. His confidence is not so remarkably as the fact that he has got into print. There is no finality about anything in this world and we make no doubt that there is much which army medical officers themselves deem susceptible of improvement in their service, but a good deal of the present criticism is both unjust and unwise. If the Royal Commission can make any practical suggestions and recommendations for its improvement and the increase of its efficiency in war we can answer for it that the medical profession and the army medical service will be only too glad.

## SIR REDVERS BULLER AND THE OFFICERS OF THE ROYAL ARMY MEDICAL CORPS.

We have much gratification in calling attention to the emphatic testimony which Sir Redvers Buller has given to the work which the officers of the Royal Army Medical Corps serving under him have performed. It is well known that Sir Redvers Buller enjoys a reputation for out-spoken honesty and for having invariably the courage of his opinions. He has never hesitated to impute blame where he considers it to be deserved, and what lends additional weight and force to his opinion on this occasion is the fact that he was always opposed to having purely military titles conferred upon medical officers, as his letter to THE LANCET at the time this was done made manifest. We leave his trenchant remarks to speak for themselves in the subjoined letter addressed by him to the editor of the *Times*:—

SIR,—The *Times* of the 5th of July contains a letter from Mr. Lees Knowles forwarding extracts from the letter of a correspondent who is stated to desire his name to be private, but who, so long as he cannot be made responsible, has apparently no objection to his letter being used to give pain to others.

It is true that about six months ago the military hospitals in Maritzburg were attacked by a writer in the *Times of Natal*. It is also true that the author of those letters, having been induced to give particulars of his allegations, was confronted before a court of inquiry, presided over by Sir William Stokes, with each patient concerned, when every tangible accusation was proved to be groundless. But this is ancient history; how can stupid assertions discredited months ago "allay the anxiety of some of us who have friends out there"?

At the moment when the attention of England is directed to the hospitals at the Cape, Mr. Lees Knowles publishes, and endorses as the utterance of a person in high position, the following words:—"I am given to understand that the senior officers Royal Army Medical Corps, with few exceptions, are so taken up with their own importance as combatant officers, and their rank as colonels and majors, that they leave much to be desired."

Was ever a more shameful accusation more shamelessly published? There were then but three colonels Royal Army Medical Corps in Natal, outside Ladysmith. Colonel Gallwey, principal medical officer, has procured for the Natal Field Force the most complete hospital system ever provided for an army in the field. He is, I believe, the first P.M.O. who has ever provided nurses in the hospitals receiving wounded on the battlefield. His organising power and untiring energy, with assistance from home, added 4700 improvised beds to our hospital accommodation, and provided nurses, doctors, and attendants, some of them (let Mr. Knowles note) from Johannesburg. Colonel Clery was in charge of No. 4 General Hospital of 520 beds which was expanded into Mooi River Hospital of 920 beds; it was justly referred to by the writer of the articles in the *Times of Natal* as a model of what a hospital should be. Colonel Allin was senior medical officer of the field army and superintended the collection and subsequent removal of the wounded and sick from the front. I believe this duty has been accomplished by him more rapidly and with less discomfort to the sufferers than in any previous campaign.

I could say as much for the next senior officers R.A.M.C., but colonels are mentioned, and I challenge Mr. Lees Knowles and his correspondent of high position to say which colonels they refer to, and either prove their accusations or withdraw their slander.

I have the honour to be, Sir, your obedient servant,
Paardekop, Transvaal, August 4th. REDVERS BULLER, General.

Mr. Lees Knowles has since sent a letter to the *Times* of Sept. 5th in which, after explaining how he came to write the letter to which General Sir Redvers Buller refers, he continues: "Unfortunately, in extracts from my correspondence I included the sentence to which General Buller takes exception, and I wish now to withdraw it and at the same time to express my regret for its publication to those whom it may concern. I do so the more readily, because I am given to understand that it unwittingly casts reflection upon the work of the principal medical officer, whose acquaintance I made in Egypt in 1897–98 and for whose ability I had then, and I have now, the greatest admiration."

## THE IMPERIAL YEOMANRY HOSPITAL.

BY ALFRED D. FRIPP, M.S., F.R.C.S.

This is really little more now than a large convalescent camp. It is extraordinary what a tremendous change has come over the place since a fortnight ago when we were still very busy. We have had no death for two whole weeks and we have not taken in an ambulance train-load for three weeks. Very nearly 100 Yeomanry have been admitted during the week, but they are almost without exception convalescents from other hospitals. For instance, all the wounded, consisting of Warwicks, Gloucesters, and Lancashires, from the action nine weeks ago at Kheis have come on here from the Orange River Hospital. Just over 600 officers and men of the Yeomanry have passed through the hospital since it was opened. Of course, a very large number of Yeomanry have been laid up in other hospitals, it having been found impossible from one cause and another to have them sent here. There are many in the acute stages of illness whom it would not be safe to move; others are laid up in parts of the Free State almost inaccessible to proper hospital transport, but the facilities of collecting in this hospital all those Yeomanry who are in a fit condition to travel have been increased daily and the arrangements to that end are now, I believe, as nearly perfect as the complicated conditions permit. There is, for instance, a standing order at De Aar (which is the next station north of us and through which all patients going down country must pass) insuring that every train is warned to stop at Deelfontein and discharge any Yeomanry it may contain. Also, directly we hear that there are any Yeomanry in a hospital up country we telegraph to the commandant of that

hospital and ask him to send them to us as soon as they are fit to travel. But if we are right in supposing that the number of Yeomanry in South Africa is about 10,000 we have already had through our hands not less than 6 per cent. of them—a heavy proportion when it is considered that none of that limb of the service have been out here for more than five months. Out of the 600 already treated here there have been only four deaths, while out of the total number of admissions to the hospital (2575) there have been in all 59 deaths, a mortality of 2½ per cent., which is attributable almost entirely to enteric fever.

Since last week, when I think I mentioned that we had run out of tobacco, a very large quantity has arrived. Much of this has been contributed as presents by kind people at home. I want to take this opportunity of thanking all of our own personal friends who have shown us so much kindness in writing to us and in sending out so many gifts for the use of the patients. One most acceptable present was made by a lady who sent 548 eggs from England. We also owe our hearty thanks for 34 pounds of sweets from Buszard's, and for many pounds of chocolate, dozens of cases of sundry food preparations, and contributions of tobacco and pipes. I only wish the donors could see the immense amount of pleasure that they have given to the patients and also that they could appreciate the encouragement which it gives to the staff to have these perpetual reminders of the kind thoughts of friends at home. Everybody here is struck with the great liberality and thoughtfulness displayed throughout the war towards those who were fortunate enough to be able to come out, by those who, from one cause and another, were prevented from accompanying them. My impression, derived from pretty extensive acquaintance with the hospitals from Cape Town to Kroonstad and Mafeking, is that every hospital to which it has been possible to get the gifts transmitted has, owing to the work of the Red Cross Society and of allied institutions and to the generosity of the numberless private individuals who have contributed in some form or another, found itself abundantly supplied with such comforts and luxuries as tobacco, scent, scented soap, toilet vinegar, periodicals, books, warm underclothing, and knitted articles.

It really seems as if the fighting had nearly come to an end, but we are still anxiously waiting for the news of De Wet's downfall. The general impression out here is that it is only a point of honour which keeps Botha, who presumably is to be considered the commander-in-chief, from throwing up the sponge so long as one of his subordinates is in the field, but everywhere in South Africa one is behind you in England in regard to news. Except when a staff officer comes down to us from some part of the front and tells one the latest "in private" we have to wait for reliable information till the two days' old Cape Town papers reach us and even then the information has frequently been re-cabled from London.

The weather is once again perfectly magnificent and the health of the staff in general has very much improved since the work became lighter. I was very glad indeed to see that Dr. Conan Doyle had been calling attention in the London press to the arduous and dangerous nature of the work done, and done cheerfully, throughout this war by the hospital orderlies. Among all the brave deeds and hard work done by the various branches of the army during the last 10 months I do not believe that any body of men in Her Majesty's service has excelled, even if it has equalled, in bravery and pluck and continuous, even monotonous laboriousness, the behaviour of the thousands of men who have been employed in the hospitals. They have been called upon to do, in addition to a full day's work every day, a full night's work every fourth or third or even at times of stress every second night. Their work has gone on month after month quietly and unostentatiously without any of the glamour attaching to deeds which catch the public eye. Many of them have died at their work but very few indeed have grumbled. The service which they have rendered to their country has, indeed, in the fullest sense of the term, been splendid.

Several people have been asking what is to become of this hospital when the war is over. We have not yet heard that any decision has been arrived at, but, as I told you many weeks ago, my own hope is that it will be taken over as a going concern by the military authorities for the permanent use of the army of occupation, or, failing that, by the civil authorities, in which case it might be worked as a sanatorium with great advantage to the colony if not even to the empire. It is a most perfect site for a large hospital and its establishment is of such a substantial nature that without any but current expenses it could continue its useful work for many years. Every single thing that could be wanted (except, of course, consumable stores), even to the bacteriological laboratory which is essential nowadays to any such large institution, is to be found here in full working order.

We have had several visitors since I wrote last. The police magistrate of the district came with his mounted police for the purpose of raiding our native encampment. We had reason to believe that some natives were lodging there without employment in the hospital which alone gives them the right to remain near our camp. By surrounding the kraal with troops before daylight, and so preventing the escape of anyone, 14 intruders were found. Having arrested them Mr. Boyes proceeded to make a more systematic examination of the contents of each hut than we have ever been able to do, and the result was the recovery for the use of the hospital of a considerable quantity of blankets, china, buckets, and such like articles, and also the discovery of a lot of strong Kaffir beer, the presence of which near our camp had been known for some little time on account of the number of white men in our hospital who had succeeded in getting intoxicating liquors.

On the same day that Mr. Boyes was here Surgeon-Major Reade, R.A.M.C., and Surgeon-Major MacMunn of the Volunteer Medical Staff Corps, who have been detailed by Lord Roberts to go over and prepare the ground for the investigations of the Medical Inquiry Commission, the members of which will arrive in South Africa on August 21st, and also Colonel Lucas, R.A.M.C., Deputy Adjutant-General of the Yeomanry, and Colonel Deane, who have both just come out from England to make a tour for the purpose of collecting information bearing on the services rendered by the Yeomanry throughout the war, arrived as well. Surgeon-Major Kilkelly, R.A.M.C., Grenadier Guards, who as I told you in my last letter has been most fortunately secured to act as commandant of our branch hospital in Pretoria, was stopping here at the time on his way up from Cape Town, and with these six visitors I spent the whole day in making a complete tour of inspection of the hospital. They went very minutely into details and statistics and seemed very pleased with everything they saw, particularly with the sanitary arrangements and with the laundry and disinfector and destructor. Indeed, one trembles to think how fearfully the work of the hospital would have been hampered if the committee in London had not foreseen the need for the heavy and extensive plant with which, I am thankful to say, we are equipped. Surgeon-Major Kilkelly was so struck with the excellence of the arrangements displayed by Miss Brereton in the various departments under her charge that he asked for the loan of her services for the development of the new branch, so she and her friend Miss Leggett, who has been working under her, are going temporarily to Pretoria. With their experience of the essentials of a mixed civilian and military hospital, coupled with that of Dr. Barclay Black and Sergeant-Major Mackay, who went up to Pretoria with Colonel Sloggett and are remaining there, and with that of Surgeon-Major Kilkelly, who, as you know, has been acting since last autumn as commandant of the now disbanded Portland Hospital, the success of the new branch ought to be assured. There seems to be no doubt now that Pretoria will be its home.

I am glad to say that Colonel Sloggett, R.A.M.C., got back this morning. He was hung up for some days by a fresh cutting of the line, south of Kroonstad this time. Everybody is glad to have him back, but nobody is more glad than I am, for the military administrative work is very uncongenial to a civilian who is not trained to it, and there is so much of it that on the top of multifarious other duties it gives the uncomfortable feeling that one is trying to do too many things and is in consequence doing much work badly.

To-day is the August Bank Holiday, so we had an open-air concert in the afternoon at which there was a large and enthusiastic audience. Two or three of the farmers in the neighbourhood brought their families in and seemed to enjoy themselves very much. Whether it is intentional or not we are not sure, but it is not a rare thing for certain of these guests to get up and walk away before "God Save the Queen" is played. Others, however, seem markedly loyal. But loyal or disloyal they lose no opportunity of varying their monotonous lives by taking part in any

entertainments that are going on in our camp. I do not think that I ever told you that we are indebted to the ladies of the surrounding farms for having subscribed a fund for the purpose of putting a wall round our cemetery, whilst another colonial well-wisher has contributed young trees which are being planted among the graves.

There was quite a good Association football match here on Saturday between teams representing our orderlies and those of the Pretoria branch.

P.S.—Colonel Sloggett tells me that there is still no travelling north of Bloemfontein except during the daytime, that the line is being repeatedly cut almost daily by small commandos from 20 to 200 or 300 strong, and that in consequence there is a most fearful blockage of traffic, no fewer than 26 trains being at the present time kept waiting to go north at Bloemfontein. Food is therefore very scarce in Pretoria. There are very few sick and wounded in Pretoria now and so many nursing sisters that work cannot be found for all of them. He came down in No. 2 Hospital Train which has gone on to Cape Town but left three bad surgical cases here. At every hospital on the way down the authorities were anxious to take in this train-load, for there are many empty beds everywhere. No. 9 General Hospital, for instance, at Bloemfontein, which when I was there had 1800 patients in it, now has only 400. Colonel Sloggett says that the general impression is that all the heavy fighting is over, but that it will take some two months at least for the energies of those small flying commandos to be exhausted. Each man in Christian de Wet's reduced force is said to ride one horse and lead two others, and as he is thus moving extremely lightly without any wagons whatever he will presumably take a lot of catching even yet.

Deelfontein, August 6th, 1900.

A correspondent writes:—The photograph shows a convalescing soldier at No. 9 General Hospital, Bloemfontein, who was not posing for his portrait. The terrible condition of neglect in which he is plunged will strike the most casual observer.

## NOTES FROM BLOEMFONTEIN.

(FROM OUR SPECIAL CORRESPONDENT.)

The general health of Bloemfontein continues excellent and at the moment of writing there are less than 1200 patients in the three general hospitals, nearly all of whom are convalescents on their way down from the front. The weather continues superb, but the rainy season (September) is rapidly approaching, when the lot of those in the marquee hospitals will not be a pleasant one.

I paid a visit a few days ago to No. 9 General Hospital, mainly to see the surgical cases, as I had been informed of the arrival of a convoy of wounded in this hospital some days before. Lieutenant J. W. Smith, R.A.M.C., kindly showed me round the surgical division, of which he is in charge, and drew my attention in particular to some 120 patients suffering from bullet and shell wounds who had been recently admitted, all convalescent or doing well. There were only two cases of shell wounds, one in the neck and one in the shoulder; small fragments of shell had been found in both and the wounds were nearly healed. The bullet wounds were nearly all penetrating wounds of the extremities. The wounds from Mauser bullets had all healed well and nearly all without suppuration. I noted particularly the following three cases as presenting points of interest, the first two being useful object-lessons of the value of the very completely fitted up x-ray room attached to the hospital.

CASE 1.—The patient, a private in the Royal Irish Fusiliers, had a bullet wound of the left arm. The bullet, a Mauser, had entered the arm obliquely on the anterior aspect just above the elbow. About an inch above the humerus was thickened and tender. There was no wound of exit and careful examination revealed nothing in the rest of the limb. Lieutenant Smith at first naturally thought the bullet was imbedded in the humerus at the point where thickening was felt, but on taking an x-ray portrait it was found to be plainly visible in the axilla. On cutting down it was seen lying on the sheath of the axillary artery and parallel to the vessel.

CASE 2.—The patient was a private in the Munster Fusiliers. A bullet passed through the left groin, through the scrotum, and into the adductor region of the right thigh. It was discovered by the x-rays in the upper part of the popliteal space and was cut down upon and removed. The testicles were uninjured.

CASE 3.—The patient, a private in the Munster Fusiliers, was hit by a spent bullet in the deltoid region just below and behind the acromion. The bullet could be felt beneath the skin of the posterior fold of the axilla. On removing it it was found notched at the point and much grooved and twisted. What caused this it is difficult to say. In the first two cases the bullets were unaltered.

In both Case 2 and Case 3 the tracks down to the sites of the bullets were completely healed, but in each case the bullet itself lay in a rough-walled cavity containing about a teaspoonful of thin yellow pus-like fluid.

Dr. R. W. Dodgson from St. Mary's Hospital, the bacteriologist sent out by the War Office, has been busily engaged for some time in his laboratory at the Raadzaal and also visits the hospitals daily. He has taken notes of the course, symptoms, &c., of a large number of cases of enteric fever attacking both inoculated and uninoculated, but he is as yet cautious in giving a definite opinion as to the effect of preventive inoculation. He informs me that no less than 75 per cent. of the so-called "simple continued fevers" which he has examined—and he has examined a very large number—give the Widal typhoid reaction with serum; on the other hand, he has seen five cases diagnosed as "enteric fever" in which the characteristic serum reaction of Malta fever was obtained. Cases of "veldt fever" did not react to either test. These facts are very instructive, as in the opinion of most competent observers out here the official statistics give an absurdly high mortality from enteric fever compared with the real mortality owing to failure to diagnose mild cases.

I find a pretty general consensus of opinion amongst officers of the Royal Army Medical Corps and civilian surgeons that the War Office hospital marquee is on the whole superior to its rivals the Yeomanry marquee and the much-vaunted "tortoise tent." The Yeomanry marquee is an ideal one in calm weather but it is dangerous in high winds as the unyielding sides act as sails; the tortoise tent has the great advantages of being very portable and of taking up but little space when pitched, but with 10 beds, the usual number, it is apt to be very stuffy and in high winds it is not as safe as the War Office marquee. For economy in administration a much larger marquee than any in use would be desirable, and it is possible that eventually some form of tent resembling the "store tent" used by the Ordnance Corps may be adopted. This is a large marquee, 30 feet by 60 feet, with three upright poles and a ridge pole;

it accommodates 20 patients easily and leaves plenty of space for tables, chairs, &c. I understand that one of these tents has been fitted up as a ward in one of the general hospitals—I believe by Lieutenant-Colonel Keogh, R.A.M.C.—as an experiment; the results will be awaited with interest.

I have just returned from a flying trip to Springfontein on No. 5 ambulance train, for which I am indebted to the courtesy of Major M. T. Yarr, R.A.M.C., medical officer in charge of the train. I was glad to have again the opportunity of inspecting an ambulance train and of admiring the completeness of all the arrangements. These trains are really luxurious hospitals on wheels and have performed invaluable service throughout the campaign. At Springfontein we found the entire *personnel* of the Welsh Hospital, headed by Professor Hughes, on the point of entraining for Pretoria; all were in the best of spirits and looking forward eagerly to their new sphere of work. Since their arrival in South Africa they have done splendid work in their camp at Springfontein, but they were naturally anxious to get nearer the front. Springfontein stands about 5500 feet above sea level, 1000 feet higher than Bloemfontein. The climate is very tonic and bracing, but the frequent high winds and dust-storms occasion no small discomfort. No. 3 General Hospital is established there and has an excellent site close to the station.

Bloemfontein, August 6th.

## THE PLAGUE IN GLASGOW.

ON August 27th and 28th general currency was given to a disquieting report that cases of suspected plague had occurred in Glasgow. We made an announcement to that effect in THE LANCET of Sept. 1st (p. 716). At that date, there seemed to be no doubt, clinically and pathologically speaking, of the disease being plague, but the inoculation experiments were not completed. This confirmation of the clinical diagnosis was soon forthcoming, and the country was then made aware of the unwelcome fact that after an absence of more than 200 years the plague had once more obtained a certain amount of foothold in Great Britain. The circumstances of the two visitations, however, may be contrasted rather than compared. In the seventeenth century sanitary science could hardly be said to exist and the ravages of plague, small-pox, and "fever" were tacitly accepted as part of the ordinary course of events. At the present day, however, the origin and mode of propagation of epidemics are comparatively well understood, and the methods of controlling them have improved so much that there has been nothing of the nature of a serious loss of adult life from such causes in this country since the epidemics of cholera in the first 60 years of the present century and the epidemics of typhus fever and relapsing fever which accompanied the failure of the potato crops in Ireland in 1845 and 1846. The modern stumbling-block of epidemiologists is, in fact, constituted by diseases of infancy and childhood—scarlet fever, measles, and diphtheria—which although they receive but little attention from the general public nevertheless in the aggregate cause a great many deaths and too often inflict lasting damage on the health of those who survive the attacks. The large proportion of mild and untreated cases, which are nearly if not quite as capable of spreading the contagion as the most severe, and the long period of post-febrile infectiveness render these diseases almost ineradicable. The prevalence of enteric fever is well known to be a question mainly of excrement disposal, and in our towns and cities where the water-supply and sewerage are good its incidence is slight. Cholera is known to our populations only by name, because its spread has always been arrested at the moment of the discovery of the focus; and there is every reason to believe that modern sanitary methods will in like manner be able to localise the present outbreak of plague in Glasgow, especially as these methods are being employed with unsparing zeal by the medical officer of health of Glasgow, Dr. A. K. Chalmers. Through the courtesy of Dr. Chalmers we are enabled to furnish to our readers an account of the excellent precautions which have been taken under his supervision by the sanitary authorities.

That the disease could be arrested altogether or confined to the first cases recognised was too much to expect, for the cases with which the authorities are now dealing are not imported ones, but are examples of recent infection propagated from an unknown source and in an obscure manner, probably through the indiscriminate gatherings at two "wakes," one of which was held nearly a fortnight ago on the body of a dock-labourer's wife. Glasgow, of course, has a very large shipping trade with all parts of the world, and possesses docks and wharves extending for miles, so that the utmost vigilance on the part of the port medical authorities might fail to recognise a convalescent from plague brought in a steamer arriving from the Mediterranean or from Portugal. If the disease should unfortunately spread, some encouragement may be derived from the experience of the Australian colonies inhabited by a population of British origin and to a large extent living according to British usages. Plague made its appearance in New South Wales and Queensland in the early months of the present year, but has been confined to the cities of Brisbane and Sydney. In Sydney, with a population of 417,000, there were (as mentioned on p 775 of our present issue) 302 cases, with 101 deaths, up to July 28th, at which date there were practically no fresh cases. During the first six months of each of the six years 1894–99 the average notifications of enteric fever in Sydney were 435, so that the attack-rate of plague was less than that of enteric fever, although, of course, the death-rate was higher. These figures prove clearly that there need be no panic in Glasgow.

The first cases of bubonic plague which came under medical observation in Glasgow were visited at their home at 57, Thistle-street on August 24th and were removed on the following day to the City Hospital for Infectious Diseases at Belvidere, where the disease was immediately suspected to be plague. We publish below Dr. J. Brownlee's and Dr. J. C. McClure's excellent account of the clinical aspect of the two cases upon whose symptoms the diagnosis of plague was founded. Our readers will be able to appreciate from these accounts the thorough nature of the way in which the disease was grappled with at its onset. No time was lost, no precaution spared. We also publish below from Dr. Thomas Colvin, who was early called to the cases, a preliminary note upon them. With great clearness he details the symptoms and environment of the sufferers and points out the difficulty of diagnosis. To the fact that Dr. Colvin, while hesitating to give a name to the condition, clearly recognised that he was dealing with a highly infectious malady, Glasgow may probably owe a debt of untold greatness. The provisional diagnosis of plague was soon confirmed by inoculation experiments. On August 31st there was a meeting of the magistrates' committee and the health committee of the corporation, at which the medical officer of health recommended that a considerable area surrounding Thistle-street should be deemed infected. He therefore reported that plague existed in the district bounded by Cumberland-street on the south, South Wellington-street on the east, Adelphi-street and Carlton-place on the north, and Bridge-street and Eglinton-street on the west, and that it would be desirable to use special sanitary measures in order to prevent the spread of the disease. The magistrates' committee having considered the report approved thereof and remitted to the medical officer of health powers to forthwith enforce the provisions of section 254 of the Glasgow Police Act, 1866, within the said district. The medical officer of health further proposed that the following measures be immediately taken. 1. (*a*) That in each "land" from which a case is removed the lobbies, staircases, common passages, and each house be disinfected and cleansed by the sanitary department, the cleansing department making special arrangements for emptying and cleansing ashpits and hosing out courts; (*b*) that tenements from which "contacts" are removed be dealt with similarly to the foregoing. 2. That the district above defined be constituted a special cleansing area, the provisions to include a thrice-weekly emptying of ashpits, limewashing thereof, hosing of courts, special removal of rubbish, &c. 3. That medical inspection of the district be organised and carried out by the medical staff of the sanitary department, with the addition of two duly qualified and suitably experienced medical practitioners,

and that inoculation with anti-plague serum be offered free of charge where deemed advisable. 4. That a special sanitary inspection for dirty stairs and houses and for overcrowding of houses be instituted. 5. That rat-catchers be employed for service where deemed necessary within the said district. 6. That a handbill be posted within the district directing the attention of the public to the fact that immediate medical attention may be had from the sanitary department on communicating therewith through the nearest police office or station. The committees approved of the foregoing proposals and directed the sanitary inspector, the superintendent of cleansing, the chief constable, and all other officials interested to act in constant coöperation with the medical officer of health in fully and effectually carrying out the said proposals and safeguarding the public health.

The medical staff of the health department was at once increased by the appointments of Dr. Frederick Dittmar and Dr. Alfred Webster who have had experience of infectious diseases in Belvidere Hospital and who now have the duty of examining all infectious and suspected cases in the above-mentioned plague-infected area. Every infected house has been denuded of its clothing and bedding, the furniture has been thoroughly fumigated with sulphurous acid, the walls and ceilings have been whitewashed, the floors and woodwork have been washed with carbolic acid solution, wearing apparel has been treated with a solution of corrosive sublimate, and all beds have been either treated in the steam disinfector or else destroyed. Staircases, landings, and lobbies leading to infected houses have been whitewashed. All the wet ashpits and privies of the city have been limewashed. Two reception houses are in use, one in Provan-place, North Montrose-street, and the other in Weaver-street. In these two houses by Sept. 5th 111 persons had been kept under observation, of whom several were attacked by plague. It is intended that those in whom no symptoms make their appearance shall be liberated after 12 days' detention. On Sept. 5th there were in the Belvidere Hospital 13 cases of plague.

A disconcerting circumstance is the discovery of an undoubted case in the adjoining burgh of Govan situated on the south side of the river Clyde immediately below Glasgow. This patient was a boy, nine years of age, who resided with his parents at 684, Govan-road, nearly two miles from Thistle-street. Early on August 29th he was seized with headache and vomiting and on August 31st he died suddenly. It is not known how the disease may have been contracted, but, as Dr. Colvin points out very clearly in his statement, there were several days during which the first patients were visited by promiscuous acquaintances. Yersin's anti-plague serum has been obtained from the Pasteur Institute in Paris and on Sept. 3rd the medical men and nurses in attendance on cases of plague at Belvidere Hospital were inoculated with it.

Attention may here be called to a remarkable paragraph in the letter of our Berlin correspondent published on p. 778 of our present issue. He states that some days before plague was discovered at Glasgow a German newspaper (which he does not name but which was, perhaps, the *Berliner Lokal-Anzeiger*) stated that it was believed at the German Imperial Health Office that Cardiff and some other British ports were infected with plague. We are not surprised that such belief should be rife, for our less responsible press do their best, it would seem, to give such impressions to our continental neighbours. We should much like to know where the circumstantial story of an outbreak of plague at the Albert Docks, which was widely circulated at the beginning of the week, had its malignant origin.

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## A STATEMENT FROM THE MEDICAL OFFICER OF HEALTH OF GLASGOW.

Dr. A. K. Chalmers, medical officer of health of Glasgow, sends us the following statement with regard to the circumstances, so far as at present they are known, attending the existence of cases of plague in Glasgow:—

A child and its grandmother Mrs. B——, living in the same house at 71, Rose-street, South Side, Glasgow, sickened suddenly on the evening of August 3rd, the child dying on the 7th and the grandmother on the 9th, the cause of death of the child being certified as "zymotic enteritis" and of the grandmother "acute gastro-enteritis." In both cases a wake was held. The grandmother was buried on the 11th. Although the husband of this latter patient sickened on the 12th he was only admitted to hospital on Monday, August 27th, certified "enteric fever," when he was recognised to be suffering from plague.

Concurrently with the later developments in this household the following illnesses were appearing in the members of a family living in 57, Thistle-street, some of whom had either attended Mrs. B——'s wake or were present during the illnesses in her house. On the evening of Sunday, August 19th, a child, Christina M——, 10 years, sickened with acute symptoms which ended fatally at mid-day on the 21st. She was only medically visited, however, within 10 minutes of her death. The symptoms were those of pneumonia and the cause of death was certified as "acute pneumonia." Before the child died the mother had already sickened (on the 20th); a son (since dead) sickened on the 22nd; and a half brother, a young child of three years, sickened on the 23rd. These three were first seen by Dr. Robertson, who had also seen the child Christina, and later by Dr. T. Colvin who, on discovering that Dr. Robertson had already visited the patients, went to confer with him regarding the symptoms. The action in which this conversation ended is thus described by Dr. Robertson:—

> We were satisfied that they were cases demanding the attention of the sanitary authorities, and I agreed with Dr. Colvin that, having both seen them independently, we should both notify them as cases of enteric fever, with a mark of interrogation after it, to imply that the diagnosis was not definite, but that they were evidently of an infectious nature, and should be removed at once.

On August 25th they were accordingly notified and the patients were removed to the hospital on the same day.

On admission Dr. J. Brownlee, the physician superintendent of the Belvidere Hospital, made a careful examination of the cases which resulted in his coming to the conclusion that the patients were suffering from bubonic plague, although they were inhabitants of Glasgow and there was no known case of bubonic plague in Britain. Dr. Weir, senior assistant physician at the hospital, and Dr. Knight, my assistant, concurred in the diagnosis. Dr. McClure, acting superintendent of the Small-pox Hospital, immediately examined blood-films obtained by hypodermic puncture of the buboes, with the result that the typical forms of the bacillus pestis were observed. Immediately on this conclusion being arrived at Dr. Knight visited the patient's house, verified the story of the illnesses and death, and arranged for the removal of the other members of the family to the reception house for observation. Cultures taken on glycerine agar showed by the evening of the 26th and the morning of the 27th the typical appearances both macroscopical and microscopical of the bacillus pestis. Later in the week they were fully confirmed by animal experiments by Dr. R. Muir, professor of pathology in the University of Glasgow, in the absence of our own bacteriologist, Dr. R. M. Buchanan. On the same day that these three cases were admitted (August 25th) another woman, Mrs. T——, living at 23, Oxford-lane, had been admitted, her disease being certified as typhus fever. This disease was excluded on examination, and owing to the presence of an inflammatory condition in the left groin and a history of recent confinement the provisional diagnosis of pelvic cellulitis was entertained. Later her association with the B—— family was discovered and the diagnosis revised in the light of the symptoms presented by these others.

Immediately the suspicion of plague was created a medical examination was made of all persons who could be discovered as having attended either the B—— wake, or the wake of the child M ——, with the following result:—

A.—Discovered ill in their own houses.

1. Two children, sons of Mrs. T——, already referred to. One of them is not suffering with plague.

2. A girl named McK——, residing at 57, Thistle-street.

B.—Removed to reception house. Fully 100 persons who were not obviously ill, but had visited one or other of the houses named, were removed to the reception house for observation and three of them have since sickened (M——, McG——, and D——).

Two further cases (F——, 77, Rose-street, and C——, 1, Well-street, Calton) were afterwards brought under notice of the department by medical practitioners, presenting symptoms of plague and after examination removed to hospital. C—— has an indirect connexion in respect of having slept in a house next door to that of the B—— family on August 15th, and F—— is a jobbing shoemaker living in the adjoining tenement.

By Sept. 2nd 14 cases had been placed in hospital, one had died, and of those then remaining 12 present the clinical

SUMMARY OF CASES WITH DATES OF SICKENING AND EXPOSURE AS FAR AS THEY ARE KNOWN.

*Deaths at Home assumed to be Due to Plague.*

| Name. | Age. | Address. | Sickened. | Died. | Remarks. |
|---|---|---|---|---|---|
| (1) Baby in B. family | — | 71, Rose-street. | August 3rd. | August 7th. | — |
| (2) Mrs. B. ... ... ... | — | ,, | ,, 3rd. | ,, 9th. | Wake held August 9th and 10th. |
| (3) Christina M.* ... | 10 | 57, Thistle street. | ,, 19th. | ,, 21st. | ,, ,, 21st and 22nd. |

* Attended the B—— wake.

*Cases Removed from their Homes.*

| Name. | Age. | Address. | Sickened. | Removed to hospital. | Where exposed to infection. |
|---|---|---|---|---|---|
| B (1) James B. ... | 60 | 71, Rose-street. | August 12th | August 27th | Wife died August 9th (see above). |
| B (2) Pat F. ... | 56 | 77, ,, | ,, 13th | ,, 29th | A jobbing shoemaker living near B——'s, but definite contact not traced. |
| B (3) John C. ... | 24 | 1, Well-street, Calton. | ,, 17th | ,, 30th | Slept in house adjoining B——'s on August 13th. |
| B (4) Mrs. T ... | — | 23, Oxford-lane. | ,, 12th | ,, 25th | Relations and visitors at B——'s. |
| (5) James T.† ... | 9 | ,, | ,, 21st | ,, 29th | |
| (6) Dennis T. ... | 6 | ,, | ,, 21st | ,, 29th | — |
| B (7) Mrs. M. ... | — | 57, Thistle-street. | ,, 20th | ,, 25th | Attended B——'s wake. Child died at home on August 21st (see above). |
| B (8) Pat. M. ... | 21 | ,, | ,, 22nd | ,, 25th | Pat C. M. died in hospital on August 27th. |
| (9) Wm. M. ... | 3 | ,, | ,, 23rd | ,, 25th | — |
| (10) Annie McK. | 12 | ,, | ,, 28th | ,, 29th | At B——'s wake and afterwards in house. |
| B (11) Thomas H. | 14 | 6, South Coburg-street | ,, 23rd | ,, 29th | At M——'s on August 20th. |

B. Bacillus obtained. † James has not plague but a gluteal abscess.

Four cases occurred among contacts who sickened in the Reception House—viz., Jane M., Arch. D., Pat. McG., and Angus R. Two sickened on August 29th and two on August 31st. All four were at the M.'s wake. These bring the total of cases to 13, excluding James T——.

symptoms of plague. In eight the diagnosis was microscopically verified; and in one the diagnosis remained doubtful for a time, but plague is now excluded. Since that date four other persons who had been in contact with affected persons were admitted on suspicion. In two the diagnosis later definitely excluded plague, in one the condition is regarded as pestis minor and in one the diagnosis still remains doubtful.

At the present moment it is impossible to make any definite statement as to the source of the infection of the first two cases in the B—— family. The husband of the elder patient was in the service of a local shipping company as a dock-labourer, and employed by them at their wharves on the south side of the river. He was engaged exclusively on vessels trading between home ports. His illness only developed after his wife died, and may be regarded as resulting from this or from his grandchild's illness. His daughter, the mother of the child who first died, is said by her father to have been ill for two days shortly before her child sickened. She now displays, one month afterwards, very slight enlargement of the cervical and axillary glands on both sides, which compared with the glands of a normal girl—definitely non-infected—of corresponding age indicate some irritative process recently active. This girl meanwhile stoutly denies any illness, and it must be remembered that she had nursed her baby for some time. The father of the child is an ironworker in constant employment. He has had no illness and presents no evidence of glandular enlargement.

### CLINICAL ASPECTS OF CASES OF PLAGUE UNDER TREATMENT.

Dr. John Brownlee, physician superintendent of the City of Glasgow Small-pox Hospital, and Dr. J. Campbell McClure, M.B., acting superintendent, send us the following interesting account of the clinical aspects of the cases of plague now under treatment in the City of Glasgow Fever Hospital, Belvidere:—

The patients admitted to this hospital suffering from plague may be divided into three classes: (1) those who had solitary bubo; (2) those who had the more generalised form of the disease where several groups of glands were involved; and (3) those very mild infections which it would be quite impossible to recognise apart from the history of infection. Yet these cases undoubtedly correspond to those cases of sore-throat which represent the mildest form of scarlatinal infection, or to those cases of slight febricula noticed among children who have been exposed to the infection of typhus where the fever aborts prior to the appearance of the eruption, and where association affords the only certain means of forming an opinion.

All the cases, however, have had certain groups of symptoms in common. The initial symptoms of headache and general malaise with nausea and vomiting have occurred with remarkable uniformity, even although the fever might be very slight. Following on these there was an almost uniform complaint of pain in some one or another group of the lymphatic glands. As far as observations have as yet gone the *facies* of all the patients has been characteristic. In severe cases, and in the earlier stages of even the milder cases, the expression of the face has been dull and yet apprehensive, the degree of stupor depending upon the gravity of the illness. In the milder cases the patients have looked ill out of all proportion to the amount of fever present and the degree of enlargement of the lymphatic glands, and have retained the peculiar *facies* for some days after all constitutional symptoms have disappeared. The buboes have exhibited all degrees of severity from the single slightly enlarged gland of the abortive type of the fever, through the fairly large and very tender buboes of the generalised type with or without reddening and œdema of the skin, to the large and intensely inflamed mass of glands seen in the cases of solitary bubo, where the redness of the skin and the œdema of the neighbouring tissues might extend to about nine inches or even more from the centre of the disturbance. The duration of the fever has varied from the slight febricula of the abortive type where the temperature may not have exceeded 100° F. to the severe fever of the generalised and true bubonic types. In the latter the fever has run a course resembling that of the better known typhus and enteric fevers. Crisis has been present in all our severe cases and it has occurred from the twelfth to the twentieth day. The tongue has been a very marked feature of the illness, for except in the two most protracted cases where the fever has run a course of about 20 days there was no tendency to dryness. It has been usually moist, covered on the dorsum with a greyish fur, and with the edges clean and red.

We record the clinical features of the two cases on which the diagnosis was originally based:—

(1) Patrick Malloy, aged 21 years, 47, Thistle-street, Glasgow, was admitted on August 25th to the hospital, his case being certified as "enteric (?)."

*History.*—Patient has been living in the same room as his sister, who sickened on August 19th, and died on the 21st, of what was presumably plague. There is no other known source of infection. The incubation period is, therefore, probably under four days. As the patient is not in a condition to give an account of himself the information was obtained from his mother who volunteered the following history. Until three days prior to admission the patient appeared in his normal state of health. On that date (August 22nd) he suddenly experienced a shivering associated with sickness, vomiting, diarrhœa, and pain in the abdomen. During the night the patient was evidently delirious, and delirium has been a notable feature of his illness until the time of admission. With the exception of measles and whooping-cough patient has suffered from no other infectious disease.

*Condition on admission.*—On admission the patient looked extremely ill. He was clearly in a state of semi-coma. The face generally was of a greyish colour with a more marked circum-oral pallor. In spite of the stupor in which the patient lay the expression of the face was distinctly anxious; there was marked knitting of the eyebrows, the eyes were widely open, and the conjunctivæ were slightly congested. The respirations were slow, numbering 18 per minute, and sighing. The skin generally was hot and dry. It was covered with a faint purplish mottling most marked across the lower part of the abdomen, the arms, and the buttocks. The characters of this eruption somewhat resembled the skin conditions of typhus fever. The tongue was moist and covered in the centre with a thick greyish fur while the edges were clean and red. There was no congestion of the fauces. There was in the upper part of the deep cervical chain a swelling composed of one moderately enlarged and several slightly enlarged lymphatic glands. The tissues surrounding these were markedly infiltrated and the skin was reddened and œdematous. Manipulation of this swelling was evidently very painful. There was no enlargement of glands in the right cervical region or of the superficial chain on the left side. The right axilla was filled with a large mass evidently composed of lymphatic glands embedded in œdematous cellular tissue. Here, again, the skin was red and œdematous and movement of the arm or even the lightest palpation gave rise to exquisite pain evidenced by the wincing of the patient even in his semi-comatose condition. In the left axilla a few glands were slightly enlarged but not tender. No enlargement of glands was apparent in either groin. The temperature was 103·6, the pulse was very soft and easily compressible and numbered 128 per minute. The lungs revealed nothing noteworthy on physical examination. The cardiac sounds were pure; the first sound was rather weak. The abdomen was not distended and was neither painful nor tender. There was no apparent enlargement of either liver or spleen. Exploratory puncture of the glands of the axilla was performed and an immediate examination of films prepared from the blood withdrawn revealed the presence of a considerable number of bacilli morphologically identical with the bacillus pestis of Kitasato.

*On August 26th* the general condition of the patient remained much the same, though the respirations were more rapid, numbering 28 per minute, but the local conditions had undergone marked alteration. In particular the lymphatic glands on the left side of the neck before mentioned were much more enlarged and the superficial glands on that side were now considerably involved. Late in the afternoon the glands in the left groin were easily palpable and slightly tender. The œdema in the right axilla was more extensive, involving the anterior border. The spleen was found to be enlarged to percussion though not palpable below the costal margin. The temperature at 6 A.M. was 102·4° and at 6 P.M. 104·4°. The pulse in the morning was 112 and in the evening 132 and even softer than on the previous day. On this evening the glycerine-agar cultures made after puncture of the glands on the 25th and incubated for 24 hours at 37° C. were examined. There was a faint surface growth composed of minute whitish translucent colonies. Cover-glass preparations were made from this growth and stained with an aqueous solution of gentian violet. These showed the presence in pure culture of a short bacillus with rounded ends, tending to run in pairs and showing well-marked bipolar staining. The bacillus was decolourised by Gram's method. The character of the culture and the morphological appearances of the bacillus and its staining reactions confirmed the diagnosis made from the examination of the films on the 25th that the organism under consideration was the bacillus pestis.

*On August 27th* the local conditions had if anything advanced, but the general condition of the patient was rather better. There was a little less mental obtuseness though it was still with great difficulty that he could be got to show his tongue. This improvement, however, was not maintained. By mid-day the patient was cyanosed and the pulse was notably weaker. He sank rapidly and died at 3.35 P.M.

*Report by Professor Muir on the Post-mortem Examination of Patrick Malloy.*

The body of the deceased is that of a fairly well-nourished though rather slightly-built man. There is a distinct swelling in the right axilla and also a well-marked swelling in the left side of the neck. In the left groin there is a fairly distinct swelling and also a very slight one in the right groin. Well-marked hypostasis and diffuse congestion exists in the region of the neck.

*Thorax.*—The pericardium contains about half an ounce of blood-stained serum. The right side of the heart is greatly distended with dark-coloured partially clotted blood, while the left side is rather contracted and empty. The cavities are of normal size and the valves appear healthy. The heart muscle is rather paler than normal, but not specially soft. Over the apex of the left lung are a few old adhesions. There is no fluid in the pleural cavity. The lungs show marked hypostatic congestion and also some collapse but no pneumonia. The glands at the root are not affected. The bronchi contain some purulent mucus. The right lung is adherent all over especially over the lower lobe. There is an old cicatrix on the chest wall over this part (resection of rib?). This lung is otherwise in a practically similar condition to the other.

*Abdomen.*—The peritoneum is normal. The spleen is enlarged, weighing 12½ ounces, the increase being chiefly in breadth. The consistence is softer than normal but by no means diffluent. The pulp presents a pale and mottled appearance and the Malpighian bodies are small and distinct. The liver is somewhat swollen, pale, and soft, and evidently the seat of cloudy swelling in a marked degree. Both kidneys are somewhat swollen and soft owing to cloudy swelling of the cortex. No hæmorrhages exist. The pancreas is slightly swollen and softer than the normal. The suprarenal bodies are rather swollen and softened

*Lymphatic glands.*—The glands in both groins show enlargement especially in the vertical group along the vessels. They are somewhat irregular on the surface, extremely tense, much congested, and show small hæmorrhagic points. The substance is rather softer than normal and there is no evidence of suppuration. The enlargement also affects the glands along the inguinal vessels and some of them are distinctly hæmorrhagic. The retro-peritoneal glands along the aorta show great swelling but none of them reach great size. In the right axilla there is a large swelling almost as large as a closed fist composed of a mass of enlarged glands bound together by infiltrated tissue. The largest single glands are about the size of a small plum. They are of a dark red colour owing to the diffuse hæmorrhages into the substance and here and there show partial softening. The periglandular tissue is the seat of a gelatinous œdema with diffuse hæmorrhages. The involvement of the glands extends upwards behind the clavicle. On the right side there is great enlargement of the cervical glands below the sterno-mastoid muscle, where there is a large irregular mass. The amount of hæmorrhage is extreme, some of the glands presenting a deep crimson colour and being also much softened. Here, also, there is much inflammatory infiltration. The glands in the upper mediastinum are also enlarged and surrounded by inflammatory œdema. A scraping from one of the inguinal glands shows enormous quantities of the bacillus pestis.

The examination of cultures made at the time on glycerine agar by Dr. McClure showed pure cultures of the bacillus pestis from the liver, the kidneys, and the lymphatic glands, while from the spleen a mixed culture of bacillus pestis and bacillus coli communis was obtained.

(2) Mrs. Malloy, aged 40 years, of 57, Thistle-street,

Glasgow. Admitted August 25th to the hospital, the case being certified as "enteric (?)."

*History.*—The patient on the night of August 10th was at the wake of a Mrs. Bogan, who died of what was presumably plague. There is no other known source of infection. The incubation period is, therefore, presumably ten days in this case. On admission the patient stated that she was first taken ill on August 20th with shivering, vomiting, severe headache, diarrhœa, and slight pain in the abdomen. Next day she felt uneasiness in the right groin, and on examination she found a small swelling which was very tender. The general symptoms became more urgent and the swelling in the right groin increased rapidly in size and in tenderness. During the whole of her illness she was confined to her bed.

*Condition on admission.*—The patient was quite intelligent but looked very ill. The face was slightly flushed and wore a rather anxious expression. The pupils were moderately dilated but there was no injection of the conjunctivæ. The tongue was moist and only slightly coated in the centre with a whitish fur. The skin was hot and dry and no eruption was noticed on any part of its surface. In the right groin there was a mass evidently composed of enlarged lymphatic glands surrounded by inflammatory tissue to the extent of obliterating the fold of the groin. The skin over the mass and for a considerable area around about, particularly laterally, was deeply reddened and œdematous. Over this area the tenderness was extreme, much exceeding that usually elicited in ordinary infective buboes. At the upper border of the swelling deep palpation showed that numerous glands in the deep group of lymphatics were also enlarged and tender, but there was practically no infiltration of the cellular tissue of this region. The skin over the right iliac region was normal in appearance. The glands in the left groin and in the axillary and cervical regions were not palpable. Nothing noteworthy was discovered in the heart or in the lungs. There was no enlargement of the liver or of the spleen. The temperature was 102° F. The pulse was soft and full, numbering 92 per minute. The respirations were easy and numbered 28. In the evening the patient complained of very severe headache confined to the frontal region. The temperature was 103·4° and the pulse was 112, while the respirations had increased in rapidity to 30 per minute.

*On August 26th* there was practically no change in the patient's condition. The morning and evening temperatures were respectively 102° and 101·8°, and the corresponding pulse-rates were 72 and 80.

*On August 27th* the morning and evening temperatures were 102° and 100·4°, and the pulse-rates were 76 and 80. Though the respiration-rates corresponding to these were respectively 30 and 23 there was no evidence of any pulmonary lesion.

*August 28th* was the day of the crisis, the temperature falling during the day from 101·4° to 98·6°, the pulse showing a corresponding drop from 78 to 64. At the same time the headache, which had been a clamant symptom up till that date, disappeared, and although no obvious change had occurred in the bubo in the right groin the tenderness was distinctly less. The patient also expressed herself as feeling much better. Since the occurrence of the crisis there has been up to this date continuous improvement in the patient's general condition, while at the same time most of the redness and œdema have disappeared from the right groin, though a small hard swelling still remains.

*Bacteriological examination.*—Four hours after admission a puncture was made into the glandular mass in the right groin and some blood was withdrawn. From this cover-glass films were made and glycerine agar tubes were inoculated. Immediate examination of the films after staining with gentian violet showed the presence of considerable numbers of short bacilli morphologically identical with the bacillus pestis. The inoculated tubes were incubated at 37° C., and 24 hours later a faint white surface-growth had appeared composed of small translucent colonies. Microscopical examination of cover-glass preparations made from these colonies stained with gentian violet showed, as in the previous case, that they were composed of short, thick bacilli with rounded ends, showing for the most part well-marked bipolar staining and occurring frequently as diplobacilli. When treated by Gram's method the bacillus was decolourised. The appearance of the cultures and stained films placed the diagnosis of the organism as bacillus pestis practically beyond a doubt.

In the hospital the plague patients are isolated in a separate pavilion which is surrounded with a high wall preventing the access of all but those whose business it is to attend the sick. All the discharges, fæces, urine, sputa, &c., are placed in vessels containing a suitable amount of 5 per cent. solution of phenol while kept in the ward. They are removed twice a day and boiled in the cholera autoclave before being passed into the drains. All the soiled linen and bedding are boiled for two hours in a steam boiler before being removed from the plague enclosure. The bulk of the patients' clothes is burned on admission, only the more valuable articles of apparel being retained for disinfection by superheated steam. The nurses have all special overalls for use in the ward.

All the nurses and persons who are in immediate attention on the sick, as well as the resident medical staff, have received an inoculation of Yersin's antiplague serum. This has been used in place of Haffkine's as the epidemic broke upon the hospital with a suddenness which necessitated the employment of the whole staff at present required, and it is considered unsafe to inoculate persons who have been exposed to the plague with Haffkine's serum.

It may be stated to the credit of the nursing staff that we have had no lack of volunteers to attend on the infected persons.

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## A PRELIMINARY NOTE ON THE OUTBREAK OF BUBONIC PLAGUE IN GLASGOW.

To Dr. Thomas Colvin, late physician to the Glasgow Central Dispensary and extraordinary physician to the Glasgow Victoria Infirmary Dispensary, we owe the following account of the beginning of the outbreak of plague in Glasgow.

At five o'clock in the afternoon of Friday, August 24th, I was called in to see a patient at 57, Thistle-street, which is on the south side of the river Clyde and fully half a mile from Kingston, which is the nearest dock to it. The street is one of the most densely populated in the city, and No. 57 has the reputation of being insanitary. It consists of a tenement of three flats with two entrances to them. The tenement is bounded on the right by another tenement of two flats and on the left by a low-roofed carpenter's shop. In going from the street to the tenement a rectangular passage has to be traversed. This rectangular space is about 25 by 15 yards. In the right hand corner of the space and about four yards from the side of the tenement in which is situated the infected house is an open dustbin. But the important point from a sanitary standpoint is that this space is usually the resting place of hand-barrows which are used by some of the dwellers in the tenement for hawking in the streets herrings or cheap fruit, and it (the space) is not uncommonly the receptacle on Saturday night of putrid herrings and putrid fruit which would be unsaleable on the Monday. Whether the herrings and fruit are in the first instance emptied into the dustbin and then scattered about by the children I cannot say, but the fact remains that I have myself on a Sunday morning seen the place strewn with putrid herrings and fruit and other refuse and even fæces.

The entrance to the part of the tenement in which is situated the infected house is about eight feet long by four feet broad. Up three steps is the first flat with two houses, up 12 steps is the second flat with four houses, and up another 12 steps is the third flat with four houses. In all there are 10 separate houses in one half only of the tenement, having one entrance to them from the space described. Each house has affixed to the outside of the door a little oval ticket on which is stated its dimensions and the number of inmates it is supposed to shelter. These tickets, if I mistake not, were first instituted by my old teacher and ever kind friend, Sir W. T. Gairdner, K.C.B., when medical health officer of the city; and by limiting the number of inmates in each house have proved an effectual means of stamping out typhus fever, which was at one time the scourge of the congested parts of the city such as Thistle-street. The ticket on the affected house stated that the dimensions of the house were 1612 cubic feet, and that it was to shelter four adults. The house itself, which was situated on the right-hand side of the second flat, consisted of two apartments, or what is commonly termed here "a room and kitchen." The part of the house called the kitchen was about five yards by four and the room was about six yards by four. In these two rooms ate and slept and washed and dressed and had their being Mrs. Malloy, aged 40 years (mother), Charles, aged 24 years, spirit salesman (son), Patrick, aged 20 years, slipper-maker (son and now deceased), Agnes, aged 18 years (daughter), Christina,

aged 10 years (daughter and now deceased), and William John, aged three years (son). It is important to note that the two sons did not follow the sea and were not in any way connected with the docks. The spirit shop in which Charles served is in Thistle-street, and the factory in which Patrick worked is in the east-end and away from the shipping.

On entering the house on the afternoon named I was conducted through the kitchen to the bedroom in which lay Patrick Malloy. I was told that he vomited on the previous Tuesday and had been ill ever since. He had "raved" all the previous night and had been so delirious that they could not keep him in bed. I found him to be an ill-developed muscular lad of the working-class. He was evidently in a semi-comatose condition. He was dull, stupid, and very prostrate. I could elicit no answer to any question I put to him regarding his illness; nor did he make any response to a repeated request to put out his tongue. His temperature was 103° F. His pulse was 130, small, and feeble, and the first sound of the heart was indistinct. As my first impression was that I had to deal with a case of acute lobar pneumonia in perhaps a drunkard—for at this stage of my examination I was told nothing about the other patients—I made a careful examination of the chest, but it revealed nothing definite beyond congestive catarrh of both bases. I then thought of enteric fever and made inquiries about the stools. My informant, a neighbour woman, said that he had diarrhœa, and without any suggestion of mine volunteered the information that the stools were like "pea-brae" (the word "brae" is the Scotch equivalent for soup) and had an "awful smell." I asked if he had been having any opening medicine and she said that the medical man had ordered him castor-oil and that it was after this he had had diarrhœa. This was my first information that another medical man had been there before me. I was also told that there was another patient in the kitchen bed, and that a little girl, the sister of the patient I was examining, had died on Monday, August 20th, within 24 hours of being taken ill. The medical man who saw her only 10 minutes before her death had certified the cause of death as being pneumonia. On continuing my examination I tried to find rose-spots on the abdomen, but there were none, and indeed no rash of any kind except a good crop of flea-bites. No enlargement of the spleen could be made out on percussion. The tongue was tremulous and of a typhoid character. There was no vomiting after the first day. The bowels were loose after the castor-oil. He had passed little urine during his illness.

I left him and went into the kitchen to examine his mother. Her illness had begun with vomiting on Wednesday, August 22nd, which had since been very persistent in spite of severe poulticing over the abdomen. She was a well-developed woman of the working class with perhaps excess of adipose tissue. She was quite conscious and her one complaint to me was the vomiting. Her temperature was 102°. Her pulse was 100 and of good strength. The heart sounds were normal. The chest was normal save for a little bronchial catarrh. There were no rose-spots or rash of any kind, except a big erythematous patch on the upper two-thirds of the abdomen, the result of poulticing. Still having enteric fever in my mind, I palpated her right iliac region and she said it was painful. It is very important for the sequel to note that the pain might have extended along the groin, but I had no reason to examine the groin and did not do so. It is still more important to note that she had a distinct painful swelling on the upper third of the anterior surface of the right thigh. I was only informed afterwards of its existence by the medical man who first saw her, and on whose attention being drawn to it by the patient had ordered it to be poulticed. The poultice had either soothed it or she was so anxious about the vomiting that she forgot all about it, for she did not complain of it to me. Her whole appeal was for something to relieve her vomiting. Her tongue was flabby and furred. There was persistent vomiting. There was no diarrhœa and her bowels had been well cleared out with castor-oil. She passed urine freely.

I then noticed a little boy lying beside her in bed and I asked what was the matter with him. I was told that he was now all right, but that he also had vomited on Wednesday and up to that day (Friday) his skin had been "roasting." I made his elder brother lift him out of bed and I examined him. His temperature and all his organs were normal. I could make out nothing the matter with him, but as his elder brother and sister were positive that his skin had been "roasting" for three days I concluded that he had the same disease as the other two patients.

To sum up, what, then, was my diagnosis on the spot on my first and only visit to the house? I excluded at once ptomaine poisoning due to eating diseased meat or fish or putrid fruit, for there was a distinct absence of a sudden and common onset and an abrupt termination. The onset of the disease was gradual and so far as I made out in the following order. Christina vomited and died within 24 hours on Monday, Patrick vomited and was ill on Tuesday, while William John and his mother vomited and were ill on Wednesday. When we find four apparently healthy individuals of the same household struck down within a day of each other with a disease characterised by a temperature of 102° F. I think that it is an easy deduction that the disease must be an acute infectious disease. Hence I had no hesitation in the first part of my diagnosis that the disease was an infectious disease. As to the particular infectious disease I was in doubt.

I did not think of typhus fever, which is said closely to resemble bubonic plague, for I had been fortunate three years ago in seeing a case of that disease in Crown-street, which is the next street parallel with Thistle-street, and in this case there was a well-marked dusky measly rash all over the body. In the Malloy cases there was no rash and the only symptom that might have suggested typhus fever apart from enteric fever was the delirious, semi-comatose prostrate condition of Patrick. I did not think of small-pox although we have it in the city and two months ago I detected a case in Adelphi-street which runs along the foot of Thistle-street. Here again I had a well-marked papular rash to guide my diagnosis.

I did think of enteric fever in an early or obscure stage and believed that probably the classical symptoms of that disease would develop later. The arguments which I marshalled in my mind in favour of enteric fever were (1) the temperature, (2) the suggested pea-soup stools with an offensive odour, and (3) the pain in the right iliac region present in the case of the mother. An additional and strong argument was that in August of last year on exactly the opposite side of the same street I had seen three cases of enteric fever and in the same month within a radius of 500 yards of the same street seven or eight cases of enteric fever. Indeed, the locality in autumn is the happy hunting-ground of the typhoid bacillus. Hence my diagnosis on my first and only examination of the Malloy cases was (1) that they were cases of an acute infectious disease and (2) that they were probably early or obscure cases of enteric fever and that some of the classical symptoms of that disease would develop later, but at any rate they were cases requiring close observation for developments.

Before leaving the house I warned the people that the disease was a dangerous and highly infectious one. I forbade the entrance of all friends and neighbours. I gave them instructions about the utensils the patients were using, and isolated the latter as best I could under the circumstances. I said that I would have them removed to the hospital as soon as possible. My first duty on leaving the house was to seek the medical man who had also seen the patients. I may here say that my reason for not sending for him when I learned in the middle of my examination that he had seen them was that the Malloy type of patient belongs to no man, for he changes his medical attendant with the weather and, as a rule, goes to the cheapest man. Two hours later I found the medical man who had seen the patients before me, and on talking over the matter we both agreed to notify the cases at once as doubtful cases of enteric fever. Half an hour later, or two and a half hours after I had seen them, I notified Dr. A. K. Chalmers that there were three doubtful cases of enteric fever in 57, Thistle-street. While I acted promptly I now regret that I posted the notification in the usual course and did not send a special messenger in the endeavour to have the patients removed to the hospital that same night. I am convinced, however, that little or no mischief was done between my visit and the removal to the hospital, for I had warned the people and partially isolated the sick. The mischief was done during the whole week that they were ill and were being visited by friends and sympathisers from all parts of the city. Dr. Chalmers probably got my notification by the first post the next morning, and Charles Malloy afterwards informed me that his mother and two brothers were removed that day (Saturday) at one o'clock

to the Belvidere Hospital for infectious diseases. On the morning of Sunday, the day following their removal to the hospital, Dr. Knight of the Sanitary Chambers called and informed me that in the hospital a bubo had been discovered in the right groin of Mrs. Malloy and another in the axilla of Patrick. He said that the physicianswere inclined to think that the disease was bubonic plague and he asked my coöperation in detecting similar cases.

I now wish it to be clearly and distinctly noted that during the past three years I have seen typhus fever and small-pox and now bubonic plague within a stone's throw of each other. As for enteric fever, erysipelas, puerperal diphtheria, and especially scarlet fever, measles, and whooping-cough, the district is never free from one or other of these diseases. I speak of five years' experience from morn till night, and sometimes from night till morn, in and out narrow and often filthy entrances, up and down dimly-lit stairs, and through dark and tortuous lobbies into low-roofed, odoriferous, and often pestiferous, single apartments, where you may find six, or even eight, individuals of both sexes eating and sleeping and washing and dressing within the four walls of one room. Why send missionaries and money out of the country when there is such need of it at home as is thus indicated? I have only to add that I found no buboes in these cases, qualifying that statement by saying that I did not specially search for them, nor was my attention directed to them by the patients. It never occurred to my mind—as I am certain it would occur to the mind of no man under the circumstances described and on his first examination—that I had to deal with three cases of bubonic plague.

# THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL CORRESPONDENT.)

## THE WORK OF THE SECTIONS.

### *The Dustbin Problem.*

ON Monday, August 13th, the Third Section took into consideration M. Hudelo's report on the removal and treatment of household refuse. In Paris this matter is treated in a more radical and prompt manner than in London. Large dustbins are not allowed. A small portable galvanised metallic box is placed in the yard of each house. The inhabitants bring their refuse, put it into this receptacle, and at night it is placed in the street in front of the house. In the early morning the scavengers come round and empty the contents of these boxes into their carts, but there is an interval during which the *chiffonniers* or rag-pickers may come and take out of these portable dustbins anything which they are capable of utilising. As the street sweepings may also be injurious to health these are likewise removed in the early morning and the streets are washed and swept. The washing is necessary so as to collect and convey to the sewers the small particles of dust which would otherwise remain in the atmosphere. Numerous analyses of the refuse thus collected prove that it contains enough potash, phosphates, and nitrogenous substances to be of value for agriculture, but if so utilised it must be very rapidly removed. It has, therefore, been suggested that the tramway lines extending to distant suburbs might be available for this purpose at night when the ordinary traffic has ceased. Whether tramways or railways are employed the cost of such transit may be greater than the value of the manure. The amount of refuse produced by a large town is much greater than can be utilised in the fields that are not too far off. At present for Paris the three railway companies—the Ouest, the Nord, and the Est—transport refuse to a distance of 100 kilometres at rates which are not prohibitive, but this is not the case with the Paris, Lyon, et Méditerranée Company and the Orléans Company. If the refuse could be sorted and packed in compressed bales then what is useful for agriculture might be sent for the same cost double the distance. It is the space taken, rather than the weight of such refuse, that causes the expense of transit. This raises the question as to whether it is possible to sort and pack such refuse near large towns without creating a nuisance. There is such an establishment at Saint-Ouen-les-Docks which treats some 300 tons of Paris refuse per day. Here the refuse is sorted in a trench which has a double metallic lining (where is the dustyard in or about London which thus protects the subsoil from contamination?) and all corruptible materials are removed by railway-trucks within 24 hours of their arrival. Is this done with equal promptitude in the London dustyards? The rags and paper which the rag-pickers have not carried away are burnt and the "hard core"—galley-pots, tins, &c.—is broken up by a crushing-machine. The weight of the matter which is conveyed by train and used for agriculture is thus reduced 20 per cent. in proportion to its bulk. No nuisance has been created and the health of the workpeople engaged in this industry is satisfactory. The town pays 3½*d.* per ton for the matter removed and this is cheaper than when it does the work itself.

### *Destructors.*

With regard to the use of destructors the results are not always satisfactory. At Copenhagen, at Berlin, and elsewhere it has been necessary to add fuel as otherwise the refuse would not burn. In England the destructors work better because the dustbins contain a large proportion of cinders. In Paris it is estimated that the household refuse amounts to a quarter of a ton per inhabitant per annum and if this could be properly burnt and the heat utilised it would give 2017 horse-power per hour. A lengthy account was given of the various methods of destruction by fire employed in different countries and of the drying process adopted by some towns in America by which the grease is extracted and used for making soap and for other industries. At St. Louis 100 tons of refuse yield £32 worth of manure and £6 8*s.* worth of grease, but this does not cover the working expenses. Altogether the report concluded by recommending the utilisation of refuse for agriculture, where it is possible to convey it immediately to the fields. Otherwise some process of destruction by fire should be employed.

In the discussion which followed it was pointed out that what was thrown away as ashes in England would be looked upon as coal in Holland and that what the Dutch threw away the Germans would still find means of utilising. A destructor that would be workable at Amsterdam would be quite useless at Berlin, for not only were the ashes in the latter town absolutely devoid of any cinders, but there was a great deal of fluff from the cloth industries which would not burn. In the same manner the value of refuse as manure differed greatly according to the occupations and customs of the people from whom it was collected. It was, therefore, impossible to lay down any hard-and-fast principle. Finally, the section resolved to adjourn the whole question to a future Congress.

### *The Protection of Water Within the Dwelling.*

The next report was by M. Lacan, Vice-President of the French Society of Sanitary Architects and Engineers, and by M. Louis Masson, engineer and inspector of the Paris sewers and dwellings. It dealt with domestic sanitation and the connexion of houses with the sewers. Plenty of pure air and pure water were agreed to be the first of necessities. But though at first the water might be pure if the pipes were occasionally empty the air might oxidise the lead and thus poison the water. In the country districts it was well known how easily wells were contaminated. Nevertheless it was easier to protect the water than the atmosphere. The water must not be allowed to come into contact with the air. Even if perfectly pure in the main the connexions with the house were often dangerously defective. The pipe might be either too small or too large for the amount of water it had to deliver, there might be too many bends or angles, or the plumbing of the joints might be carelessly done. All this required careful calculation so that the pipes within the dwelling might deliver the amount of water required without causing a vacuum in the delivery pipe. The size of the taps must be in proportion with their number and the size of the principal pipe within the house, so that the opening of two taps at the same time should not empty the main house pipe and cause air to enter. Of course the water for flushing the closets should not be taken direct from the main but from a disconnecting flushing tank, or "waste preventer," as it is called in England. Naturally the employment of cisterns to store the supply of drinking-water, which are so largely used in London, was absolutely and emphatically condemned. It was impossible to prevent dust and emanations in gaseous form reaching and contaminating such cisterns. As for the use of domestic filters these required so much care and were at best of such doubtful utility that a warning against the dangers they occasion was very necessary.

*The Ventilation of Private Dwellings.*

In respect to the unsolved problem of the ventilation of private dwellings, the report treated of a phase of the subject which in England is singularly neglected, namely, the porosity of the walls. A house covered with impermeable paint or other similar substance required far more ventilation than was the case where the natural porosity of the walls was preserved. As in winter it was difficult to keep windows open, ventilating shafts should be brought behind the fireplaces so that the outside air might be partially warmed before it was discharged into the room. The only absolutely certain method of ventilation was when mechanical power was employed, and the reporters seemed to think that this could only be applied to large buildings or assembly rooms. But with a little jet of water or a weak electric current the very slight amount of power necessary to move a small fan could be secured and for no very large cost; and such methods could be and are utilised in private dwellings.

*Public Sewers.*

With regard to house refuse the ideal would be its destruction by fire as rapidly as it is produced. But it was not every house that possessed a sufficiently good oven and fire to burn up at once the dust collected in sweeping and the vegetable and animal refuse from the kitchen. In regard to drainage the report first stated that where cesspools had been abolished and houses placed in connexion with sewers there the death-rate had been greatly reduced. This was quite true, but the reporters were too sweeping in their condemnation of the separate system, of mechanical and pneumatic apparatus, &c. They forgot that where there was no fall some sort of mechanical apparatus must be and was employed to raise the sewage or propel it forward and that where the separate system had been applied there had likewise been a great decrease in the death-rate. In Paris itself immense engines are employed to raise the sewage so that it may flow on to the irrigation plains of Achères, &c. This is machinery, and very costly machinery; and in some towns it has been found more expedient to use a larger number of smaller machines, distributed in different directions. In Berlin there are six such centres; and where pneumatic apparatus is employed, as at Bombay, Rangoon, Southampton, &c., a still greater number are employed and still greater economy is realised. That water carriage, as the reporters argued, is the simplest of methods is undeniable; but where there is no fall the water will not carry, and a fall below a flat surface cannot be artificially created for any considerable distance. Consequently the sewers of Paris, of London, and of many other towns are apt to be clogged with deposits. They are not self-cleansing; scavengers armed with all manner of ingenious apparatus have to be sent down to clear these sewers. It is not drainage by water carriage, but by human labour. If any machinery can effectively replace human labour of such a description it merits careful consideration from all sanitary reformers. As the report deals with domestic drainage and not with public sewers the reporters would have been better advised had they left this latter subject alone instead of going out of their way to condemn systems, theories, and methods which were not under discussion.

*Soil-pipes as Sewer Ventilators.*

Dealing with the internal arrangements of the house, the principles proclaimed will find very general acceptance. Every tenement should have its own water-closet, for those used in common by several families can never be clean. A vigorous, and as far as possible an instantaneous, flush should be provided. A water-sealed syphon should be placed under every closet-pan, sink, bath waste pipe, &c. The seal of these traps should be two inches deep. The rain as well as the slop-water should drain into the main soil-pipe of the house and the diameter of this pipe should be small. In France it is generally much too large. The soil-pipe should continue to the roof of the house and be left open and, of course, should be absolutely watertight. It should be occasionally tested with smoke or water to see that there is no leakage. The water test is the most reliable.

So far everyone was agreed, but as soon as the reporters approached the subject of the public sewers divergences of opinion became manifest. Indeed, the discussion which followed was in the main devoted to the question now raised — namely, should there be a trap at the bottom of the house soil-pipe so as to disconnect it from the public or street sewer? The reporters were opposed to the use of these disconnecting traps, which were first employed when the sewers were badly built and the sewer airs really dangerous; "but now it is recognised that the hypothesis that the diffusion of epidemical diseases such as typhoid fever, cholera, and diphtheria, by sewer-gas is incompatible with our actual knowledge of the principles that govern the propagation of these maladies." Then, again, we were told that the disconnecting trap prevented the utilisation of the soil-pipes for the ventilation of the sewers and the circulation of air in the soil-pipes. This latter assertion shows a confusion in the authors' minds between what in England is meant by a disconnecting trap or chamber and a mere syphon. The disconnecting trap or chamber should be provided with an air inlet for the ventilation of the soil-pipe of the house. It is best that this inlet should be carried to the top of the house, as then it does not matter whether it acts as an inlet or outlet. In any case the soil-pipe must have two apertures, one consisting of the continuation of the pipe itself to the top of the house and the other communicating with the soil-pipe just before it reaches the syphon that separates it from the sewer. Then there can be no pressure on the traps, even if the pipe should be blocked in any part of its course. Of course it is easy to condemn the disconnecting trap when improperly constructed and this is precisely what was done and what should be done; but no account was taken of cases in which the system was properly and satisfactorily applied. In justice, however, it must be said that the term "disconnecting trap" was only occasionally employed and that the section had but vague ideas as to what this sort of trap might be. The terms more generally used were *siphon terminus* or *siphon de pied*. Of course, a simple syphon at the end or foot of the soil-pipe may very justly be condemned unless and apart from the ordinary outlet an air inlet is added to such a syphon. Then it is that it becomes not a simple syphon or trap but a *disconnecting* trap. A syphon which is affixed to an unventilated pipe does not disconnect, because the water-seal is constantly broken by the pressure or suction frequently occurring in the pipe. Had the report made this distinction clear a great deal of unnecessary discussion would have been avoided.

The experiments made by the British Sanitary Institute were quoted to show that with the ordinary two-gallon flush soil remained in the trap which separated the soil-pipe from the sewer. This, then, was against the principle that all such putrescent matter should be immediately carried away. To flush such traps properly it would be necessary greatly to increase the water-supply. The report therefore urges that these traps should be done away with and that every domestic soil-pipe should become a ventilator of the sewer. The plentiful supply of oxygen thus secured would "burn up the injurious microbes as fast as they are produced." This latter sentence is in flat contradiction with the assertion previously made that sewer air did not propagate epidemical diseases.

Mr. ROECHLIN (Leicester) while agreeing in many respects with the opinions expressed in the report submitted to the section, spoke strongly in favour of the disconnecting trap. Where in the experiments of the British Sanitary Institute the flush had not sufficed to clear the trap it came from a closet in the cellar, that is to say, on nearly the same level. In Paris, where the houses were so lofty, the flush would acquire sufficient velocity to clear out everything from the trap. He had examined houses where an obstruction occurred and this happened not necessarily in the disconnecting trap but in various parts of the systems. M. EMILE TRELAT thought that it was a matter of detail of application rather than a question of a general principle. Dr. Vaillant was in favour of suppressing the *siphon de pied*. Pasteur had explained that there were two sorts of fermentation, and that the fermentation which took place in contact with the air was not dangerous. M. DONKOWSKI from Russia argued that if a trap was placed at the bottom of the soil-pipe people would conclude that all that was necessary had been done, and would not take trouble to put traps under the closet-pans and waste-water pipes. If the latter syphons were properly inspected there was no need of a disconnecting trap. Mr. ADOLPHE SMITH protested against the assertion that recent bacteriological discoveries justified the belief that sewer air was not injurious. Even if such emanations from the sewers did not contain pathological bacteria it was quite certain that they predisposed persons to disease. Practically

the result was the same. It had been said, however, that scavengers who worked in the sewers enjoyed good health. Doubtless this was the case, but they were poor men who had for the most part been reared in unhealthy homes, and having survived they might be considered immune. Then they were in the prime of life, they did not work in sewers at a susceptible age, and when in the sewers their bodies were in full activity. The greatest danger was when vitality was at its lowest ebb—namely, during sleep. Now, if the soil-pipes of private houses were to be converted into ventilating shafts for the public sewers, would not sewer air be discharged into bedroom windows? This danger would be especially great where the ground was not absolutely level and houses overlooked each other. The speaker illustrated this by describing how at Maidstone typhoid fever had followed the level of a sewer ventilator. Sewers should be amply ventilated, but in suitable places and not haphazard on the roof of every house, without regard to windows that might be close by and at higher levels. No general rule could be laid down. Here and there a soil-pipe could be utilised as a sewer ventilator, but this could not be applied on all sides whatever the character of the houses and of the ground. Dr. RICHAUD agreed that it was not possible to dogmatise, and Dr. REYNAULD said that if in the small towns of Austria a syphon was placed at the bottom of the soil-pipe there would not be enough air in the sewers and people would neglect to put traps in their houses. The soil-pipe air could be as dangerous as that of the sewer. M. BECHMANN brought the discussion to a conclusion by insisting that the section should strive to indicate what were the results that were to be attained rather than the means to be employed. Thus the use of disconnecting traps might well be left to be decided according to local circumstances. The section might be content with insisting that domestic drains should be so constructed as to be free from odour and to ensure the immediate evacuation of the soil. A resolution to that effect was thereupon carried. It further stipulated that all apertures leading to the soil-pipe should be trapped in such a manner as to prevent the entry of air from the pipe or the sewer into the dwelling. Further, the soil-pipe should be permanently ventilated throughout. Another resolution was carried insisting that special care should be given to improve all plumbing work and that all water-pipes, traps, and soil-pipes should be so placed and built as to be free from the effects of frost. The section then adjourned.

*(To be continued.)*

## ASYLUM REPORTS.

*Royal Lunatic Asylum, Montrose (Annual Report for 1899).*—Overcrowding had been felt for some time at this asylum and it was decided to build a detached block or villa to relieve the congestion. This has been so far carried out that it was expected that the villa would be ready for occupation by September. The cost of erection was estimated at £7000. As, however, this would provide only for one-half, or the male portion, of the overcrowding at the asylum, the committee are now considering plans for the erection of another house to accommodate the female surplus. The average number of patients resident during the year at the asylum was 659. 75 males and 89 females were admitted during the year, making a total of 164 patients admitted. Of these 138 were new cases and 26 were re-admissions. 126 of the admissions were rate-supported, while 38 were private patients. Dr. John G. Havelock, the medical superintendent, states in his report that intemperance in drink was the cause of insanity in 13 per cent. of the admissions. Hereditary predisposition was the cause in 11 per cent., old age in 10 per cent., and moral causes accounted for another 10 per cent. In 25 per cent. of the admissions no cause could be ascertained. There was a history of previous attacks in 27 per cent. of the cases admitted. In nine cases influenza was the exciting cause of the attack. The number of patients discharged as recovered was 68—i.e., 30 males and 38 females, or 10·3 per cent. of the average number resident. The deaths during the year amounted to 59, or 30 males and 29 females—i.e., 8·9 per cent. of the average number resident. The causes of death were as follows: three deaths were due to epilepsy, three to cerebral hæmorrhage, two to renal disease, five to malignant neoplasms, five to pneumonia, six to senile decay, six to general paralysis of the insane, seven to phthisis and other forms of tuberculosis, and 14 to cardiac disease. Post-mortem examinations were made in only 35 out of the 59 deaths. Several cases of influenza occurred in the institution during the winter months, but the epidemic was less virulent than in previous years. The Commissioners in Lunacy in their reports state that the institution is well managed and that the books and registers are correctly and regularly kept. The farm and garden account showed a surplus during the year of over £275. As authorised by the managers the committee have negotiated a loan of £15,000 in order to meet the balance of expenditure for Carnegie House and Lodge (the parts of the institution for the admission and accommodation of private patients) and for the new villas now in course of erection. Owing to increased annual outlay in recent years the committee propose to raise the rate of board for all pauper patients to £32 per annum in future, which is the minimum rate of board charged by any of the other chartered asylums in Scotland.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6832 births and 4404 deaths were registered during the week ending August 25th. The annual rate of mortality in these towns, which had declined from 20·5 to 19·5 per 1000 in the three preceding weeks, rose again to 19·8 in the week under notice. In London the rate was 19·2 per 1000, while it averaged 20·1 in the 32 provincial towns. The lowest death-rates in these towns were 11·3 in Cardiff, 11·4 in Swansea, 13·2 in Bradford, and 13·5 in Halifax and in Croydon; the highest rates were 25·5 in Salford, 25·9 in Sheffield, 28·6 in Plymouth, 28·5 in Wolverhampton, and 30·7 in Preston. The 4404 deaths in these towns included 1180 which were referred to the principal zymotic diseases, against 1263 and 1061 in the two preceding weeks; of these 883 resulted from diarrhœa, 117 from whooping-cough, 62 from measles, 50 from diphtheria, 44 from "fever" (principally enteric), and 24 from scarlet fever. The lowest death-rates from these diseases were recorded in Bradford, Swansea, Cardiff, and Halifax; and the highest rates in Preston, Wolverhampton, Plymouth, and Hull. The greatest mortality from measles occurred in Gateshead, Leeds, Brighton, and Oldham; from whooping-cough in Gateshead, Nottingham, and Derby; from "fever" in Portsmouth; and from diarrhœa in Leicester, Sheffield, Preston, Wolverhampton, Plymouth, and Hull. The mortality from scarlet fever showed no marked excess in any of the towns. The 50 deaths from diphtheria included 14 in London, seven in Leicester and in Leeds, and three in Sheffield and in Salford. No fatal case of small-pox was registered in the week in any of the 33 large towns and only one case was under treatment in the Metropolitan Asylums Hospitals at the end of the week. The number of scarlet fever patients in these hospitals and in the London Fever Hospital on Saturday, August 25th, was 1726, against 1827, 1838, and 1793 the three preceding weeks; 140 new cases were admitted during the week, against 156, 155, and 177 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 128 to 132 in the two preceding weeks, further rose in the week under notice to 149, but were 12 below the corrected average. The causes of 47, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Cardiff, Nottingham, Salford, Bradford, and in nine other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Leicester, and Liverpool.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined from 19·0 to 16·9 in the five preceding weeks, rose again to 17·9 per 1000 during the week ending August 25th, and was 1·9 per 1000 less than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 11·8 in Perth and 16·6 in Leith to 23·3 in Paisley and 24·9 in Greenock. The 554 deaths in these towns included 52 which were referred to diarrhœa, 23 to whooping-cough, nine to measles,

eight to "fever," six to diphtheria, and five to scarlet fever. In all 103 deaths resulted from these principal zymotic diseases, against 107 and 108 in the two preceding weeks. These 103 deaths were equal to an annual rate of 3·3 per 1000, which was 2·0 below the mean rate in the week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 60 and 56 in the two preceding weeks, further declined to 52, of which 17 occurred in Glasgow, seven in Paisley, and seven in Greenock. The deaths from whooping-cough, which had been 27 and 18 in the two preceding weeks, rose again to 23, and included 15 in Glasgow, four in Greenock, and three in Dundee. The fatal cases of measles, which had been 11 and 16 in the two preceding weeks, declined in the week under notice to nine, of which four were registered in Glasgow and four in Edinburgh. The deaths from diphtheria numbered six, against none and seven in the two preceding weeks, and included three in Glasgow and two in Greenock. The five cases of scarlet fever, three of which occurred in Glasgow, showed a decrease of one over the number in the preceding week. The deaths from "fever," which had been five in each of the two preceding weeks, rose again to eight, four of which were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 67, 52, and 59 in the three preceding weeks, rose again to 82, and were greatly in excess of the number in the corresponding period of last year. The causes of 17, or 3 per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined from 24·0 to 21·2 per 1000 during the three preceding weeks, rose again to 27·0 during the week ending August 25th. During the four weeks ending August 25th the death-rate in the city averaged 23·8 per 1000, the rate during the same period being 19·8 in London and 15·8 in Edinburgh. The 181 deaths belonging to Dublin registered during the week under notice showed an increase of 39 on the number in the preceding week, and included 33 which were referred to the principal zymotic diseases, against 14, 23, and 28 in the three preceding weeks; of these 25 resulted from diarrhœa, five from whooping-cough, three from "fever," and not one from small-pox, measles, scarlet fever, or diphtherla. These 33 deaths were equal to an annual rate of 4·9 per 1000, the zymotic death-rate during the same period being 4·7 in London and 1·7 in Edinburgh. The fatal cases of diarrhœa, which had been 19 and 24 in the two preceding weeks, rose to 25. The five deaths from whooping-cough showed a marked increase, having been one in each of the two preceding weeks. Three cases of "fever," were equal to the number recorded in the preceding week. The 181 deaths in Dublin included 62 of infants under one year of age and 20 of persons aged upwards of 60 years; the deaths of elderly persons showed a decline, while those of infants greatly exceeded the number recorded in the preceding week. Six inquest cases and nine deaths from violence were registered, and 65, or slightly more than one-third, of the deaths occurred in public institutions. The causes of 5, or nearly 3 per cent., of the deaths in the city during the week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: F. J. Burns to the *Tauranga;* C. M. Beadnell and J. E. Coad to the *Scylla.* Surgeons: C. Shepherd to the *Royal Arthur*; C. R. Nicholson to the *Nile;* and R. Waterfield to the *Nymphe.*

### ROYAL ARMY MEDICAL CORPS.

Captain D. J. Collins has been appointed for the performance of "specially arduous plague duty" in Poona Cantonment and Suburban Municipality, in addition to his military duties, vice Lieutenant E. F. Gordon Tucker, I.M.S., who has proceeded on service to China. Major W. Turner has embarked for South Africa. Captain H. W. Vaughan-Williams has been placed on half-pay in consequence of ill-health. Lieutenant-Colonel G. F. Poynder has retired on half-pay.

The following is the list of successful candidates for commissions in the Royal Army Medical Corps at the recent examination in London:—

| Names in order of merit. | Marks. | Names in order of merit. | Marks. |
|---|---|---|---|
| 1. H. J. McGrigor ... ... | 2779 | 6. C. D. Myles... ... ... | 2040 |
| 2. W. R. P. Goodwin ... | 2612 | 7. R. N. Hunt ... ... ... | 1986 |
| 3. J. H. Brunskill ... ... | 2303 | 8. H. E. Howley ... ... | 1916 |
| 4. A. C. Duffey ... ... | 2251 | 9. R. F. M. Fawcett ... | 1855 |
| 5. A. W. Gibson ... ... | 2205 | | |

### ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Lieutenant Arthur Young Pringle, 1st Suffolk and Harwich Volunteer Artillery, has been appointed Surgeon-Lieutenant.

### INDIA AND THE INDIAN MEDICAL SERVICES.

The services of Captain H. Ainsworth, on plague duty in the Jullunder District, have been placed at the disposal of the Government of India in the Home Department. Lieutenant J. C. H. Leicester has been appointed to the officiating medical charge of the 1st Central India Horse. Lieutenant-Colonel D. P. Warliker has been permitted to return to duty. Captain E. V. Hugo has been appointed to officiate as civil surgeon of Kangra. The following officers have retired from the service: Lieutenant-Colonel C. J. McCartie, Lieutenant-Colonel D. W. D. Comins, and Lieutenant-Colonel J. F. Tuohy. Lieutenant-Colonel J. T. B. Bookey to be Colonel. Captain H. Smith has resumed civil medical charge of the Jullunder district. Lieutenant H. Boulton has assumed charge of the civil medical duties of Bannu. Major J. K. Close, civil surgeon, Moradabad, will hold visiting medical charge of the Budaun district in addition to his own duties during the absence on leave of Major A. R. W. Sedgefield. Captain C. Milne, officiating civil surgeon, is transferred from Jaunpur to Benares as a temporary measure. The services of Major R. J. Marks, officiating civil surgeon, Etawah, are replaced at the disposal of the Government of India, Home Department. The following officers of the Indian Medical Service proceeding to China have arrived in Calcutta: Lieutenant G. McPherson, Lieutenant J. W. Rait, and Lieutenant D. N. Anderson. Major Sykes, Captain Evans, Captain Moncrieff, and Captain Tucker have left Bombay in the hospital ship *Carthage.* The services of Major J. W. Rodgers and Captain E. S. Peck, civil surgeons in the Punjab, have been placed at the disposal of the Government of India for service with the China expedition. Furlough to Europe for one year has been granted to Captain S. A. C. Dallas, civil surgeon, Chanda.

The following candidates for the Indian Medical Service were successful at the competitive examination held in London on August 17th, and following days:—

| Place. | Marks. | Place. | Marks. |
|---|---|---|---|
| 1. C. W. Melville ... ... | 3476 | 8. W. H. Leonard ... ... | 2786 |
| 2. N. S. Wells ... ... ... | 3033 | 9. J. E. G. Swan ... ... | 2737 |
| 3. R. McCarrison ... ... | 3005 | 10. R. McL. Dalziel... ... | 2548 |
| 4. J. Masson ... ... ... | 3000 | 11. A. W. C. Young... ... | 2500 |
| 5. W. M. Anderson ... | 2991 | 12. J. J. Robb ... ... ... | 2430 |
| 6. W. D. Pringle ... ... | 2985 | 13. S. A. Ruzzak ... ... | 2425 |
| 7. E. H. B. Stanley ... | 2870 | 14. R. B. B. Foster ... ... | 2385 |

### MILITIA.

4th Battalion Suffolk Regiment: Surgeon-Lieutenant-Colonel F. Fawssett, jun., Militia Medical Staff, retires with permission to retain his rank and to wear the prescribed uniform on retirement.

### MILITIA MEDICAL STAFF CORPS.

Mr. George James Devonsher Davies to be Surgeon-Lieutenant. Surgeon-Major W. Waring to be Surgeon-Lieutenant-Colonel. Surgeon-Captain W. M. O'Connor, M.B., to be Surgeon-Major.

### YEOMANRY CAVALRY.

Royal Wiltshire: Surgeon-Lieutenant O. C. Maurice to be Surgeon-Captain.

### VOLUNTEER CORPS.

*Artillery:* Surgeon-Lieutenant George Higginson resigns his commission and is appointed Second Lieutenant. *Rifle:* Queen's Rifle Volunteer Brigade (Highland Battalion) Lothian Regiment (Royal Scots): Kenneth MacKinnon Douglas, to be Surgeon-Lieutenant. 2nd Volunteer Battalion Northumberland Fusiliers: Surgeon-Lieutenant A. W. Messer resigns his commission. 2nd Volunteer Battalion Lincolnshire Regiment: Surgeon-Major G. F. England to be Surgeon-Lieutenant-Colonel. 5th Volunteer Battalion South Wales Borderers: Surgeon-Lieutenant C. E. Humphreys to be Surgeon-Captain.

### TRANSVAAL WAR NOTES.

The following officers have been discharged from hospital to duty:—Major G. Brazier-Creagh, R.A.M.C., Major D. Bruce, R.A M.C., Lieutenant M. H. Babington, R.A.M.C., and Lieutenant W. J. P. Adye-Curran, R.A.M.C.

The transport *Templemore* has arrived at Southampton with 10 officers and 390 men sick and wounded from South Africa.

The transport *Orotava*, with sick and wounded from South Africa, has disembarked at Southampton 35 officers and 590 men convalescent for Brockhurst and for Netley Hospital.

Lieutenant-Colonel R. D. Hodson, R.A.M.C., invalided, has left Cape Town for England.

Lieutenant W. H. S. Nickerson, R.A M.C., was one of those taken prisoner at Klipfontein.

Colonel W. F. Stevenson, R.A.M.C., has been granted the temporary rank of surgeon-general whilst principal medical officer at army head-quarters, South Africa.

The Secretary of State for War has approved of officers on sick leave from South Africa who reside within a mile of any military hospital being allowed free medical attendance from an army medical officer or civil surgeon engaged for duty with the troops.

### THE WAR IN CHINA.

We do not think that the gallant attempt which Admiral Seymour made to relieve the legations in Peking has aroused the attention or obtained the credit in this country which it merited. It was full of incidents illustrating the pluck and devotion of the men of the various nationalities taking part in it. The conduct of Admiral Seymour and of his contingent was worthy of the best days of our navy and was highly, as well as generously, appreciated on the part of the officers of the United States' navy, with whom Admiral Seymour's character and ability rank very high. We are glad to notice that the services rendered by the French officers and sailors under singularly critical circumstances, and especially the conduct of the Flag-Captain, de Marolles, were most handsomely recognised, as they well deserved to be, by Admiral Seymour in his letter to Admiral Courrejolles. There is no need to dwell upon the more recent operations in the notable achievement of the relief of Peking by the allied forces; the marches over a single difficult road in sickening hot weather; the stubborn courage and discipline of the troops—especially the Japanese, who fight like Gorkhas—and of the dysentery and disease attributable to bad water, bad food, and fatigue; these things have been fully set forth in the daily press. Peking was captured and the legations were saved in the very nick of time and so far all is even more satisfactory than could have been anticipated a few weeks ago, though the political difficulties have not by any means been cleared away.

As regards the military force from India now operating in China under the command of General Gaselee it will probably have to be augmented, and must in any case be supplied with reinforcements to make up for losses by wastage. The Indian Government have for the present equipped the force with medical officers and hospitals, but the question will shortly arise as to where the requisite number of medical officers can be obtained. The Indian medical establishment is a limited one and the calls on it in India have been very great, and, as everyone knows, show no sign of diminishing.

### THE SOUTH AFRICAN HOSPITALS INQUIRY.

Amidst all the *ex-parte* statements that have appeared on one side and the other it is gratifying to notice that there is a decided preponderance of testimony in favour of the good work done by the Army Medical Corps in South Africa. Several of the colonial soldiers on the occasion of their late visit to Windsor Castle spoke very emphatically of their personal experience in this respect and as their testimony was perfectly spontaneous and they knew of what they were talking about it was reliable and valuable. They freely acknowledged that whatever shortcomings there might have been were of a temporary nature and simply unavoidable and attributable to the strain and stress of war. The testimony of soldiers who have passed through the hospitals in South Africa is, after all, the best test that can be applied and it is almost uniformly favourable; and where it is not their criticism is nevertheless usually perfectly fair, temperate, and just. With regard to the overcrowding of army hospitals people seem to forget that this is occasionally unavoidable. A military hospital, unlike a civil one, is bound to take in and provide for sick and wounded soldiers after an action or outbreak of epidemic disease. The *Spectator* of last week contains a very pertinent and well-written remonstrance from Lieutenant-Colonel N. Alcock, a retired officer of the Army Medical Staff, against attacks (with one of which he deals in particular) upon the *personnel* of the Royal Army Medical Corps, who are silently doing their duty in this war often under most trying circumstances. All interested should read this communication.

### PASTEUR INSTITUTE FOR INDIA.

The Pasteur Institute has been opened at Kasauli for the treatment of persons bitten by rabid animals. The director of the institute at Kasauli is Major D. Semple, R.A.M.C., who was Assistant Professor of Hygiene at Netley for several years, and has been trained in bacteriology and studied the anti-rabic treatment in Paris. The treatment itself at Kasauli will be entirely gratuitous, but as it does not involve detention in hospital patients will have to make their own arrangements for board and lodging. Excellent accommodation for all classes can be found at this station. Soldiers bitten by rabid animals will no longer require to be sent from India to Paris for treatment. Major Semple has already had eight men of the South Staffordshire Regiment sent for treatment from Subathu, and applications for admission have been made in the case of sepoys and other natives from various parts of the Punjab and the North-West Provinces.

### "HEROES ALL."

We have received from the London Stereoscopic Company, 54, Cheapside, London, E.C., a tasteful engraving having the above title and presenting on the central figure a portrait of Field-Marshal Lord Roberts surrounded by ten portraits of generals and colonels serving under him. It has been prepared as a souvenir picture of our generals in South Africa, and the London Stereoscopic Company offers to send, gratis and post free, as many copies of "Heroes All" as may be applied for by the managers of every hospital, sick ward, convalescent home, or other resort where our invalided soldiers and sailors returned from South Africa are being treated, in order that these souvenirs may decorate the walls and interest the invalids. Presentation copies have been graciously accepted by the Queen and several members of the Royal Family.

### THE CASUALTIES IN SOUTH AFRICA.

The total losses (exclusive of sick and wounded men now in British hospitals in South Africa) amount to over 40,000 and of these between 5000 and 8000 have died from disease, which is very considerably in excess of the number of deaths returned as killed and wounded. As the *Army and Navy Gazette* points out, however, we have been engaged for some ten months in this war and the losses in killed and wounded amount in round numbers to 10 per cent. of the mean strength of the forces actually landed in the theatre of war. In ten hours' fighting at Gravelotte, to take one instance, the victors lost almost exactly the same numbers out of about half the strength engaged.

### ROYAL VICTORIA HOSPITAL, NETLEY.

On August 31st Lord Lansdowne, Secretary of State for War, who was on a visit to Her Majesty at Osborne, paid a visit of inspection to the Royal Victoria Hospital, Netley. Crossing from Cowes in the royal yacht he was received by Lieutenant-Colonel W. E. Webb, the officiating principal medical officer. After going round the hospital he visited the huts and inspected the new railway station and line.

### THE MEDICAL OFFICERS ORDERED FOR CHINA.

The medical officers warned by the War Office to prepare for service in China at 48 hours' notice were informed on Saturday last that, for the present at least, their services will not be required.

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SWANSEA GENERAL HOSPITAL.—The committee of management of this institution have elected Dr. Henry A. Latimer, J.P., as their chairman.

NAVAL INVALIDS.—The steamship *Palawan* arrived at Plymouth on August 27th and landed 22 naval invalids from the Mediterranean Squadron suffering from Mediterranean or malarial fever. They were conveyed to the Royal Naval Barracks at Stoke.

# Correspondence.

"Audi alteram partem."

## "THE MEDICAL STAFF AND THE MANAGEMENT OF THE NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, QUEEN-SQUARE."

*To the Editors of* THE LANCET.

SIRS,—The following correspondence throws, I think, a helpful sidelight on the controversy as to the management of the National Hospital for the Paralysed and Epileptic and illustrates the sort of tactics that have been resorted to in the long-sustained campaign against the medical staff.

With reference to the special general meeting on August 11th it is now clear:—

1. That it was summoned, notwithstanding the protest of the medical staff, deliberately—perhaps I should say precipitately—for a date when it was impossible for any considerable proportion of the governors or subscribers to attend it or for the medical staff to be represented at it.

2. That its decision was taken on a statement of facts which Mr. G. W. E. Russell has, in the columns of the *Times*, admitted to be incorrect, but which is still being circulated amongst the governors and subscribers by the authority of the board of management.

3. That it was a packed meeting, made up of friends of the board of management specially invited. True, the packing was on a small scale, as only 16 persons took part in the proceedings, but there was packing nevertheless.

I shall be greatly surprised if a properly convened and informed meeting of the governors held at a convenient time does not emphatically reverse the decision arrived at on August 11th. I am, Sirs, yours faithfully,

London, August 31st, 1900. JAMES CRICHTON-BROWNE.

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61, Carlisle-place-mansions, Victoria-street, S.W., August 23rd, 1900.

DEAR MR. BURFORD RAWLINGS,—I have received "with the compliments of the board of management" a report of a special meeting of governors and subscribers of the National Hospital held on the 11th of August.

Will you be good enough to inform me why, as a governor, I was not summoned to that meeting and had no notice of it?

I understand that certain governors were invited to attend that meeting and were asked for proxies, and I should be glad to know on what principle a selection of governors to be specially summoned was made.

I shall be obliged if you will send me a copy of the last annual report of the hospital and of the rules and regulations under which it is governed. Believe me, yours faithfully,

R. Burford Rawlings, Esq. JAMES CRICHTON-BROWNE.

National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, August 24th, 1900.

DEAR SIR JAMES CRICHTON-BROWNE,—I beg to acknowledge the receipt of your letter of yesterday.

In reply let me say that no selection of governors to be specially summoned to the general meeting on the 11th inst. was made.

The meeting was summoned in the way provided by the rules - viz., by public advertisement. In addition it was announced in the board's letter to the *Times*, and was mentioned in subsequent communications to that journal.

When the proxies were sent out it was thought to be obviously out of place to solicit the support of the friends of the medical staff. Such an act would have been regarded as an impertinence.

I am sending you a copy of the last report—one was forwarded at the time of issue in May—and I am also sending you, as you wish, a copy of the rules for the constitution of the charity.

Believe me to remain, yours faithfully,

B. BURFORD RAWLINGS.

Sir James Crichton-Browne, F.R.S.

61, Carlisle-place-mansions, Victoria-street, S.W., August 25th, 1900.

DEAR MR. BURFORD RAWLINGS,—I have to thank you for your letter of yesterday's date and for copies of the last annual report and rules of the National Hospital.

I gather from the rules that a single advertisement in any "one public journal" would be an adequate notice of a special general meeting, and I have no doubt, therefore, that the meeting on the 11th inst. was in a technical sense duly summoned, although, as I did not see your advertisement, I had no notice of it. If all the other governors and subscribers are in the same case I have no right to complain, but I have been told that a certain number of governors outside the board of management did receive special notice of the meeting, and your admission that proxies were sent out is tantamount to an acknowledgment that this was so.

Will you explain how you reconcile the issue of proxies with "Rule 6, section, general meetings," which requires that every question shall be decided by a majority of governors present at the meeting? Will you also explain how before issuing your proxies you were able to discriminate in the large body of governors those who were "friends of the medical staff," and to whom it would be "an impertinence to send them," and those who were friends of the board of management and were therefore favoured with them? Most of the governors will, I believe, prefer to be regarded as friends of the National Hospital and will insist on a fair opportunity of giving effect to their views in the controversy which has unhappily arisen.

Believe me, yours faithfully,

R. Burford Rawlings, Esq. JAMES CRICHTON-BROWNE.

National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury, August 30th, 1900.

DEAR SIR JAMES CRICHTON-BROWNE,—I am so sorry that my reply to your letter of the 25th has been delayed. Will you accept my apologies for what has been entirely unintentional?

You are correct in your reading of the rules, as to a single advertisement being sufficient for calling a special general meeting. The special meeting to which you refer was, however, the subject of more than one letter in the *Times* newspaper in addition to being called by advertisement in that journal.

In sending out the proxies it was explained that they were for use if a ballot should be demanded. They could not, of course, be used at the meeting when, as you correctly point out, all questions had to be decided by the governors present. Naturally the board did not send proxy papers in support of their policy where it was known they would be unwelcome, and I think you would have had reason to complain if you had been asked to give a proxy in favour of the board and against the staff. It was only in cases like your own when, as I said in my former letter, a request to support the board might have been rightly regarded as an impertinence, that an appeal for such support was not made.

Believe me to remain, yours faithfully,

Sir James Crichton-Browne, F.R.S. B. BURFORD RAWLINGS

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## "PROFESSIONAL ORGANISATIONS."

*To the Editors of* THE LANCET.

SIRS,—On behalf of the Great Yarmouth District Committee of the Incorporated Medical Practitioners' Association I am directed to reply to the letter from Dr. James Ryley, published in THE LANCET of August 25th (p. 627), which letter gives an entirely wrong impression as to the attitude taken by the Yarmouth medical men in regard to consultations with the Institute medical officers.

Under ordinary circumstances we certainly do refuse to meet the medical officers of the Institute, because we consider they have behaved in a most unprofessional manner to the rest of the profession, but in any really urgent case we are individually prepared to render them help when called upon to do so. In the case of the genuine working-man club patient who is not even able to pay even low medical fees desiring a consultation we are prepared on dismissal of the Institute officer to take sole charge of the case and to treat the patient gratuitously if necessary. Had Dr. Ryley manifested as great an amount of zeal and interest for local medical organisation as his letter displays for general medical politics by attendance at the meetings of this society which he assisted to form he would not have brought this accusation against his professional brethren, but would have been well aware of the position taken by the society since its commencement, which his letter shows he is not. We further regret this, as we think, unnecessary zeal because at the time of writing his letter to THE LANCET we were in correspondence with him on that very point.

Whilst admitting that "boycotting" is not an ideal method of obtaining our ends we can see no other effective one so long as the General Medical Council, the colleges, and the universities hold aloof from taking any practical interest in matters which vitally concern the well-being of the general practitioner. We are at one with Dr. Ryley in his desire for a "central representative body," and as a society have made efforts (of which he is apparently ignorant) to attain that end, by sending a delegate to the recent Manchester Conference. The statement attributed by Dr. Ryley to the secretary with reference to London consultants is entirely erroneous, no such avowal having been made by him either at the last or any other meeting of the society. Enclosed, for your perusal or for publication, is the correspondence between Dr. Ryley and this society, and we shall be grateful for any comments you may care to make thereon.—I am, Sirs, yours faithfully,

W. E. WYLLYS, Honorary Secretary.

*** We have read the correspondence between the Great Yarmouth District Committee of the Incorporated Medical Practitioners' Association and Dr. James Ryley. It is at present incomplete, for no practical steps are to be taken by the association until a reply is received to its last letter from Dr. Ryley. We do not, therefore, publish the letters, but we may remark that reading them has left the impression on our

mind that Dr. Ryley ought to have no difficulty in remaining a member of the association without any sacrifice of his principles.—ED. L.

*To the Editors of* THE LANCET.

SIRS,—Dr. Ryley's letter in THE LANCET of August 25th (p. 628) will be read with regret by many members of the profession who have envied the Yarmouth men for the admirable way in which they combined in the day of trouble and have held together since. It is a proof that even the Yarmouth Association has at least one weak-kneed member—a fact which will give considerable satisfaction to the clubs which five years ago treated the local profession in a manner which Dr. Ryley mildly terms "ungracious." If the letter in your last number had simply been an indictment of the methods pursued by the Yarmouth Association I should not have interfered as the Yarmouth men I know are quite capable of defending themselves. But as the letter is an onslaught on the only methods by which any useful organisation can work, I trust you will allow me a little space.

Dr. Ryley's chief objection to his association seems to be that it *did something*. One must at once admit that it is not the usual thing for a medical organisation to act, and Dr. Ryley was probably hurt when he found the association acting instead of merely holding meetings and talking, as is the accepted custom in many such associations. If the Yarmouth Association had relied on talk about the dignity of the profession Dr. Ryley would doubtless have been still an uncomplaining member of the association. He complains that the association boycotted the imported medical men; he objects to its refusal to have dealings with patients so long as they are attended by the institute medical officers; and he protests against influence being brought to bear on consultants in order that they may be induced to back up the association. It would be interesting to hear what in Dr. Ryley's opinion the association should have done. I must confess that these things seem to me not only commendable, but the only things which the Yarmouth medical men could do. It would hardly be worth while forming an association unless something was to be done which could not be done by individuals. Will Dr. Ryley kindly explain? Does he think any good would have been done by simply protesting and then proceeding as if nothing had happened? Would he have the imported practitioners treated in the same way as the ordinary beginner is treated? Does he think that the public—whose opinion he seems to value more than that of his colleagues—would think more of the Yarmouth men if the latter had sat with folded hands after the treatment which Dr. Ryley himself calls ungracious? But after voicing his dissatisfaction with the Yarmouth plan of campaign Dr. Ryley proceeds to question the methods of medical organisations in general. Without in any way meaning to be offensive I must say that here Dr. Ryley falls into the customary professional cant. To my mind there is nothing more sickening than the repetition of the old old phrases by which we try to lead others to think, and to delude ourselves, that we as a profession are animated by motives of pure philanthropy and that the fee is a secondary and rather undignified detail. To listen to this cant—most rampant about Oct. 1st in the neighbourhood of medical schools—one might think that the members of the profession come from a moneyed class whose sole duty and pleasure it is to cultivate the virtues of altruism and charity. It is an offshoot of the same kind of cant which would lead us to believe that we as a profession are above the economic conditions which guide the conduct of other callings. I am as proud of my profession as most men. I know that as men with ordinary human feelings, brought into constant contact with suffering and hardship, we frequently ignore the monetary side of our relations with patients, just as other ordinary men with ordinary feelings would do in similar circumstances. But this kind of thing is a matter for each man to settle for himself as the circumstances arise, and I hold it to be wrong, misleading, and hypocritical to talk, as we too often do, as if the public had a right to expect to find a miracle of altruism in the person of every medical practitioner. This kind of talk has led to much misunderstanding, is pharisaical, and has become a professional cant.

It is a matter of observation that nearly all callings during the last 50 years have felt the necessity for combination. Combine or be exploited is the order of the day. It is equally a matter of common knowledge that those callings which have most thoroughly organised themselves have most improved their status and income. They have done this by the use of "trade union methods" to which Dr. Ryley objects so much when used by medical men. If he will explain what other methods are open to us he will confer a favour on the profession. What are the methods to which Dr. Ryley objects and which he believes are undignified when used by us? I suppose boycotting and the strike are the two most open to exception. As regards boycotting, this is a legitimate and legal method of showing disapproval. It is used on a larger or smaller scale by all callings and classes. Is it not usual for a medical man to refuse to meet or countenance another who conducts himself in an unprofessional manner? And surely what is proper and recognised in the individual cannot be heinous when done by a body. Dr. Ryley pities the public of Yarmouth who cannot have a member of the association unless they first give up the attendance of the institute medical officer, but this is simply carrying out the preliminary protest in a practical way. The effect of the protest would have been *nil* unless followed up in this manner. As for the strike everybody believes that in the case of working men it is sometimes inevitable. The trade unionist knows that it is not a weapon to be carelessly used, but is invaluable as a last resort. Why should medical working men, suffering, as they often do, from the injustice of organised bodies of the public, deprive themselves voluntarily of this weapon? and what substitute does the stickler for the "dignity" of the profession offer?

We must be practical. Individual patients may safely be left to individual practitioners, but when we deal with bodies of the public the situation demands organisation on our part. Experience has shown that disorganised medical men always get beaten by the organised friendly societies, for example. If we agree to organise we must use weapons which have been found useful by similar bodies, or find others. Dr. Ryley does not even suggest the existence of others. To those who find the idea of medical unionism strange and repugnant I would ask the following question. Do you believe that a man will be less skilful, less humane, less charitable, or less of a gentleman because he belongs to an organisation able and willing to protect him in the possession of his rights and privileges? Our professional dignity we can safely leave to look after itself, but one might fairly point out that dignity and strength are not incompatible. We are all in accord with Dr. Ryley's wish for a strong central means of co-ordinating and governing the various local organisations; but we must remember that it is by the formation of such bodies as the Yarmouth Association and the example they have set that the need for such a centre has been driven home to the profession. Even if we had such a body much would perforce be left to the good sense of the local practitioners, and Dr. Ryley would then, as now, be obliged in great measure to rely on the judgment of his colleagues, who have as much to lose and are presumably as jealous as he for the honour of the profession. I am, Sirs, yours faithfully,

Gateshead, August 27th, 1900. ALFRED COX.

## "THE CAUSE OF CARIES OF THE TEETH."

*To the Editors of* THE LANCET.

SIRS,—The Decay of Teeth Committee of the British Medical Association in their report to the council suggest among the causes that by the civilised methods of preparing food thorough mastication is rendered unnecessary and that this limitation of the action of the muscles of the jaw is further shown by atrophy of the jaw, as a consequence of which the teeth become overcrowded. These statements appear to only half meet the case. With bread made from roller-flour additional mastication is really necessary in order to obtain a large supply of saliva to promote digestion and it is quite possible that the low nutritive value of roller-flour is a great factor in atrophy of the jaw. To properly appreciate the difference in the nutritive value of roller-flour as compared with stone-made, it appears necessary to briefly consider the modes of manufacture. In old stone mills the wheat to be ground is fed in through a hole in the upper or running stone, when by reason of the dress or cut put into the surfaces of the stone, assisted by centrifugal force, the wheat becomes pulverised on its way to the periphery or skirt of the stones, whence it passes

through mechanical sifters and dressers and the coarse parts are separated from the flour. By this method all parts of the wheat grain are cut up more or less and the resulting flour contains particles of all parts.

In the modern invention, the roller-mill, the wheat is at first only rolled to smash it in order to separate the kernel from the husk and the germ, and the operation is repeated several times between fluted iron rollers until the object aimed at is obtained, and then the parts of the kernel pass on to be ground between smooth iron rolls. This rolling is succeeded by dressings in cylinders covered with silk, through which the flour made between the smooth rolls passes, and the rollings and dressings are repeated until all the flour is extracted and only the pollard is left. By this method only parts of the kernel are ground up and the resulting flour does not contain any particles of husk or germ. The husk, although very rich in lime salts, is very indigestible. The lime salts contained in the germ are easily assimilated. The germ is the vital part of the grain and acts very like a stomach for the young wheat plant, the diastase it contains converting the starch of the kernel into grape-sugar which helps to nourish the young plant. One part of the diastase contained in the wheat germ will convert a thousand parts of starch into grape-sugar. The starch in the dough must be gelatinised or scalded in order to obtain the full effects of the diastase upon it. The heat at which wheat-starch becomes gelatinised is 150·5° F. Thus when the dough is placed in the oven and the required heat is reached the starch-cells burst and the diastase acts upon it. After the heat of 180° F. has been reached the power of diastase ceases.

Since starch forms about 60 per cent. of wheaten flour the nutritive quality of bread is considerably lowered by removing the germs in roller-milling. It can be easily understood that if we get the dough at a point at which the starch is gelatinised, and at the same time have a certain amount of diastase intermingled with it that will convert a portion of the starch into grape-sugar, we have succeeded in obtaining a bread which will be easily digested. The bread made from flour ground in a roller-mill even if well masticated and swallowed with a good supply of saliva is not so easily digested and assimilated as when the flour is obtained from a stone mill.

As teeth are often the first part of the body to show signs of the effects of malnutrition, the removal of all parts of the wheat-germs from the roller-flour used to make the higher priced bread must have largely helped to cause much dental caries and atrophy of the jaws amongst the rich. The wheat-germs which the roller-miller has removed in making the flour for his higher-class customers are mixed with low-grade flour and made into cheap bread for the poor. The stone-made flour largely used to make the lower-priced bread contain particles of husk and the lime salts and diastase of the wheat-germ, and therefore is well adapted to help in the development of strong jaws and sound teeth. Bread made from roller flour from which the wheat germs have been removed being deficient in nutritive qualities appears to have considerably helped to cause atrophy of the jaw and the resulting defective teeth.—I am, Sirs, yours faithfully,

THOMAS G. READ, D.M.D. Harvard, L.D.S. R.C.S. Eng.

Cavendish-square, W., Sept. 3rd, 1900.

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*To the Editors of* THE LANCET.

SIRS,—With reference to the letter from Mr. A. Berlyn of Cape Town, in THE LANCET of August 25th, in which he states that the natives of South Africa "live on nothing but soft pappy food," and yet carious teeth amongst them are the exception rather than the rule, it would be interesting to know for what period these African natives have subsisted on this soft diet. In the West Indies, where the negroes are all descendants of African slaves, a soft diet also prevails—a diet which has only of recent years been exchanged for a much coarser and harder one—but there the condition of the natives' teeth to-day is almost exactly opposite to that described by Mr. Berlyn.

There are, of course, exceptions, but the rule there is: white-looking teeth, which are freely attacked by caries, often not a sound molar or bicusbid at the age of puberty, and often the incisors broken down by the ravages of decay at a very early age. Suffering from toothache is very common; abscesses, accumulations of tartar, irregularities and malformations, pyorrhœa alveolaris, and indeed every kind of dental disorder can be commonly seen. The Africans who were imported into the West Indies over 62 years ago no doubt had teeth of the character of those described by Mr. Berlyn; what, then, has brought about this marked degeneration in so short a period? If I may be allowed to give an opinion without going into details I should attribute it to the change of diet and mode of living.

I am, Sirs, yours faithfully,

ERNEST STURRIDGE, D.D.S., L.D.S. Eng.

Wimpole-street, W., August 27th, 1900.

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*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of August 25th I notice that Mr. Berlyn of Cape Town would like explained how the fact which he put forward could be reconciled with the theory I advanced and which was so generously supported by Dr. Harry Campbell. Mr. Berlyn says: "The great majority of South African natives live on nothing but soft pappy food, which consists of a very soft porridge made from ground mealies or Indian corn ..... and yet carious teeth among natives are the exception rather than the rule." I should like to point out that this porridge is made of Indian corn which is bruised or crushed, and there is no attempt made to eliminate the coarse and fibrous part such as is done by the elaborate processes which wheat, for example, undergoes in the manufacture of flour. As far, therefore, as this, the staple article of diet, is concerned the Kaffir does *not* eliminate the fibrous part from the natural foodstuff. According to my views such a food is not liable to lodge in the crevices of, and between, the teeth, and the act of masticating it tends to keep the teeth free from fermentable matter. I bruised and crushed some Indian corn first with a hammer and then with pestle and mortar after having soaked it in water for 24 hours so as to try to make it soft. I then boiled it for an hour. On examining I found the more or less powdered part mixed with a fine tough transparent scale which naturally surrounds the corn grains. I then added a little salt and ate the porridge thus prepared. It required a very considerable amount of mastication, much more than does coarse brown bread.

I think, however, Mr. Berlyn is hardly correct in saying that the majority of the natives "live on nothing but soft pappy food," as the following extract from Ratzel's "History of Mankind," vol. ii., p. 433, would indicate. "Thus the Kaffir gets his food about equally from his fields and from his herds. The basis of it is sour milk, *amasi*, and bruised maize, *amabele*, or millet, *umbla*. Meat is eaten alike boiled or roast and is much relished by the natives. According to Gardiner's estimate four or five can manage to eat up a whole ox—entrails, sinews, and all—in a day and a half." The teeth are often much worn from the very considerable amount of mastication which they perform, and, as will be observed from their eating the sinews of an ox, they are not particularly addicted to eliminating the fibrous part from their foodstuffs. These people are very free from dental caries and are an interesting confirmation of the theory that "the cause of the prevalence of dental caries is that the natural foodstuffs [of the civilised] are to a large extent ridded of their accompanying fibrous parts and prepared and consumed in a manner which renders them liable to lodge and undergo acid fermentation in the mouth," &c.

I am, Sirs, yours faithfully,

Kingston-on-Thames, August 28th, 1900. J. SIM WALLACE.

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*To the Editors of* THE LANCET.

SIRS,—If Mr. A. Berlyn's assertion be correct that "the great majority of South African natives live on nothing but soft pappy food," and if it can be shown that they do not habitually chew hard things of any kind, then the view I hold, in common with Dr. J. Sim Wallace, falls to the ground. That, however, these natives do use their muscles of mastication far more than civilised peoples seems to me to be proved by the perfect development of their jaws and muscles of mastication. Nothing is more certain than that if these structures are not adequately used they will not develop properly. I am, Sirs, yours faithfully,

Wimpole-street, W., August 25th, 1900. HARRY CAMPBELL.

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## "THE COVENTRY DISPENSARY."

*To the Editors of* THE LANCET.

SIRS,—In the agitation against this institution which has now been raging, at intervals, for eight years a persistent

attempt has been made to obscure the real issue by "drawing a red herring across the path," to wit, the registered friendly societies. In a communication which I drew up for the Council of the British Medical Association during the presidency of Dr. Saundby, just prior to the annual meeting at Edinburgh, I made the following statement regarding these societies: "It is true that some of the outside medical men hold these appointments, but we have never asked the dispensary committee to apply a wage-limit to these selected members, as it was felt that the time was not yet ripe to attack these societies. Moreover, the outside doctors fear to attempt any reform in this direction as the dispensary blocks the way, and, as has repeatedly occurred, it immediately absorbs at a lower rate of payment any society which may be relinquished." I do not wish to retrace further the thread of the argument in this controversy, but merely to emphasise the fact that these societies have always been regarded as distinct combinations, and I have yet to learn that any official censure has been passed on men holding these appointments by the medical press, the medical societies, or the British Medical Association. It is no doubt true that great abuses exist in the terms of their contract with the profession, but being registered by Act of Parliament they present peculiar difficulties, and in the opinion of some the solution of these difficulties involves some knotty points of law. Dr. Saundby asks us to "formulate the reforms we are prepared to accept as satisfactory." Accepting the challenge, we hope soon to give the consultants of Birmingham the opportunity of deciding whether in the future they are prepared to uphold the honour of their profession or the interests of their pocket. In the first place, we must insist on some reasonable wage limit whereby it may become impossible for the rich to monopolise an institution founded to meet the necessities of the poor or the wage-earning section of the community. This must be not only prospective but retrospective—not necessarily to apply to members of registered friendly societies. We insist on the rule being abolished that the medical officers should not hold consultations with anyone outside their staff except those from other towns. We object to the system of touting encouraged by the rule that anyone can join even when ill "if he or she can procure two healthy persons to enter at the same time and pay one year's subscription in advance." We also strongly object to a condition of things whereby the medical profession is exploited for pecuniary gain. This is proved from the fact that surplus funds are not all divided up amongst the profession, but money has been invested on mortgage, and property in addition purchased. We resent the idea of professional men administering medical relief in accordance with the dictates of a lay committee controlling funds collected from the members or left to the institution by philanthropists. The medical men have no control over the disposal of these funds, which may be diverted to any purpose. Their position is somewhat analogous to that of the practitioner who covers an unqualified assistant—i.e., an individual who receives money by virtue of his connexion with a registered practitioner of medicine. We propose to ask the members of the Birmingham Branch of the British Medical Association to refuse these men professional recognition until some reasonable reforms are introduced. If they carry such a resolution the power of this lay committee is paralysed; reforms must then come which will be for the interests of the profession in general and the staff of the institution in particular.

I am, Sirs, yours faithfully,

Coventry, Sept. 3rd, 1900. W. RICHARDSON RICE, M.D. Dub.

*To the Editors of* THE LANCET.

SIRS,—I am sorry to trouble you again, but Dr. Phillips's letter implies that I did not state the truth when I said that I had not been asked to support the profession in either town against any individuals nor had such a request been brought before any of our medical societies. It is quite true, as Dr. Phillips says, that some years ago he and Mr. Faulder White called upon me about the Coventry Provident Dispensary, but it was to ask my assistance as President of the Council of the British Medical Association and in that capacity I rendered him all the help in my power. It is also true that the matter of the Provident Dispensary was referred by the Council of the British Medical Association to the Ethical Committee of the Birmingham and Midland Counties Branch, but that committee sits apart and does not report its proceedings to the branch. The committee reported back to the Ethical Committee of the Council of the Association and upon that report the Council of the Association passed its condemnatory resolution. The Birmingham consultants have been accused of having failed to render assistance to the medical profession in Coventry and what I have said I now repeat: that the medical profession in Birmingham has never failed to render any assistance asked for by the medical profession in Coventry and that Dr. Phillips's letter is uncandid and unfair, because when he did ask my assistance some years ago, not as a consultant in Birmingham, but as President of the Council of the British Association, I did all in my power to help him, and the Ethical Committee of the Birmingham Branch also when referred to from London did its share of the work. I cannot see that it advances any cause to make charges that are so easily proved to be false and that cause not unnatural irritation in the persons who are the objects of them.

I am, Sirs, yours faithfully,

ROBERT SAUNDBY.

Great Charles-street, Birmingham, August 28th, 1900.

*To the Editors of* THE LANCET.

SIRS, In your note following the correspondence *re* "The Coventry Dispensary" you state: "Our aims are to obtain a decrease in hospital abuse and a cessation of the sweating tactics employed in the management of many medical aid associations." Would your, Sirs, lend an ear to one of your readers in Bethnal-green? Here we have a powerful organisation, born and fostered by the Church, which is ruining the incomes of practitioners in the neighbourhood. I refer to the medical missions. In my own sphere tradesmen, mechanics, and men earning good wages accept the aid of the medical mission in lieu of the general practitioner. An attendance at the church is all that is necessary for a visit from the medical man or nurse, and a confinement at 4*s.* 6*d.*, with nourishment thrown in, is a fee with which no respectable practitioner would care to compete.

I am, Sirs, yours faithfully,

PERCIVAL ALLEN.

Bethnal-green-road, London, E., Sept. 3rd, 1900.

## TREATMENT OF HÆMORRHAGE BY THE SUBCUTANEOUS INJECTION OF SOLUTION OF GELATIN.

*To the Editors of* THE LANCET.

SIRS,—I have had occasion to make use of this treatment on three occasions and the success has been striking, as the following reports will show. The method adopted was as follows. A solution was made of 200 grains of sheet gelatin in two pints of distilled water containing 60 grains of "Cerebos" salt. This was clarified with egg albumen, boiled, filtered through cotton wool, made up to two pints, and boiled again for 15 minutes, and then bottled in a sterilised bottle whilst at boiling heat, well corked, and kept for use. At each injection six ounces of this were injected at a temperature of 103° F. into the cellular tissue of the buttock, with the usual precautions as to asepsis, such as boiling the syringe and using collodion to the puncture. In Case 3 alone did any inconvenience result to the patient from the injection, but neither induration nor pain at the site of injection nor any constitutional disturbance were noticed in the others.

CASE 1. *Hæmoptysis.*—A married woman, aged 72 years, was greatly depressed subsequently to the shock induced by the sudden death of her husband a fortnight previously. On July 1st she developed gout of the right foot, with heat, redness, swelling, and pain over the dorsum. She was treated with 15 grains each of guaiacum powder, potassium bitartrate, and precipitated sulphur every night, and a dietary of good light food, as fish and broths, with plenty of fresh lemonade and fruit. The gout disappeared, but on July 4th she developed some œdema over the front of the chest wall, including an area as large as a dessert plate starting from the lower part of the sternum as a centre. At the same time great irritation of the fauces caused an ever-recurring dry cough which prevented sleep. The fauces and larynx were examined with negative results except that the left side of the pharynx was occupied by a distinct pulsation and this, after examination, was attributed to anatomical variation of the internal carotid; the œdema of the chest was thought to be due to depression

partly consequent on shock, gout treatment, and sleeplessness. From the 4th to the 14th she remained in bed with frequent change of position. She was to have got up on the 15th. On the morning of the 15th she had an attack of hæmoptysis at 5 A.M. and brought up two and a half ounces of frothy bright blood having an alkaline reaction. This was apparently attributable to the coughing having caused a rupture of some atheromatous vessel. The usual treatment by solution of chloride of calcium, hazeline and hydrastis by the mouth, and hypodermic injection of ergotinin, with an ice-bag on the upper part of the left chest, was adopted. The hæmoptysis recurred six times on the 15th, from the 15th to the 16th four times, and on the morning of the 17th it recurred every 15 minutes; on each occasion one ounce was brought up. Hæmorrhage was evidently continuously going on and when it had accumulated to the extent of an ounce caused irritation and was coughed up. At 10 A.M. on the 17th, during hæmoptysis, the gelatin was injected. The hæmoptysis ceased and did not recur and the patient made an uneventful recovery and is now at the seaside doing well and has not had any further trouble.

CASE 2. *Post partum flooding.*—A multipara, aged 27 years, was delivered at full term of a fœtus and placenta on July 21st. At the time of delivery she was alone, although I was but 10 minutes in reaching her house after being called at 5.20 A.M. The uterus was distended to three inches above the umbilicus with fluid blood and she was still losing. I at once emptied the uterus and with a flushing curette with water at 115° F. the whole surface of the uterus was passed over; a large rent in the perineum was brought together with four deep sutures. As the hæmorrhage continued a hypodermic injection of ergotin and strychnine was given, the uterus was well contracted, and the pulse was fairly good and about 90°. Dr. R. R. Law, of Sidcup, now came to my help, and took charge of the uterus during my absence; in half an hour the gelatin solution, &c., was ready; the patient was still losing freely, her lips were blue, she was exsanguine and restless, and the pulse was thready. The gelatin was injected into the right buttock and the hæmorrhage ceased at once and did not recur.

CASE 3.—The patient, a woman, aged 57 years, 5-para, had suffered from prolapse for some 20 years. During the last year she had suffered from very grave periodical losses due to fungous endometritis, which was in its turn due to the chronic uterine congestion dependent on the prolapse. The uterus was curretted with a view to diagnosis. The hæmorrhage was treated by the usual medicaments and by packing the uterus with ribbon iodoform gauze and vaginal tampons soaked in liquor hamamelidis. The metrorrhagia became more profuse with each attack, recurring every five to seven weeks, and I finally advised vaginal hysterectomy. I did not treat the patient at her last metrorrhagic loss; she consulted another medical man who made weekly applications of nitric acid and in the intervals used the "coton styptique." During the entire month the hæmorrhage continued and after the last application it was more free than before. The patient was advised to undergo vaginal hysterectomy and was sent back to me. She was seen on August 15th, 1900, and had been losing every day as described. I injected five ounces of 1·5 per cent. solution of gelatin into the buttock and this caused much pain and faintness, the temperature went up to 101·4° F. that evening and the pains prevented sleep during that night. From August 16th onwards the patient has been carried into the garden each day, and until now she has not had a trace of hæmorrhage. Every day she is visibly recovering her usual tone and health in a way that will assist her in bearing the shock of the projected hysterectomy.

The difficulty of having this remedy at hand is best met by making a concentrated solution of 200 grains of gelatin in a quarter of a pint of distilled water and one ounce of salt, putting it up in half-ounce bottles, each of which when diluted, re-sterilised, and filtered makes a five-ounce injection, enough for one dose.

This remedy is more or less empirical, but it is easy to assume that hæmorrhage in each of the above cases was due to some deficiency in the blood, induced by debilitating strain of various kinds removing from the blood some substance essential to coagulability, and that the gelatin injection, quickly absorbed, presented the foundation or deputy fibrinogen rendering coagulation once again possible. It should be remembered that the inducement of coagulation is so positive a property of this treatment that it would appear that there is real danger of inducing thrombosis in the event of too strong a solution or too large a dose.

I am, Sirs, yours faithfully,
G. W. DAVIS, M.D., B.S. Durh., L.R.C.P. Lond., M.R.C.S. Eng.
Sidcup, Kent, August 22nd, 1900.

## DUOTAL IN OSTEO-ARTHRITIS.

*To the Editors of* THE LANCET.

SIRS,—During the last nine months I have been prescribing duotal (carbonate of guaiacol) in cases of both acute and chronic osteo-arthritis with markedly good results. Duotal is a white powder, tasteless, odourless, is said to be non-poisonous, is insoluble in water, and therefore is best prescribed in capsules or wafers. It does not interfere with the digestive functions and is split up in the intestines into carbonic acid and guaiacol. There the latter becomes absorbed into the system and can afterwards be traced in the urine. It produces no depression, is free from the disagreeable irritative effects of guaiacol, and it seems to stimulate the appetite and facilitate assimilation. As to the dose, it is better to begin with the minimum and gradually increase to the maximum. I usually commence by ordering five grains every four hours or three times daily, according as the disease is acute or chronic. On the second or third day I increase the dose to 10 grains, and after the first week I give from 15 to 20 grains three times daily. In the acute form of the disease it relieves pain, reduces the temperature, and diminishes the swelling of the joints, but in the chronic affection, although it relieves pain and stiffness, I cannot say that it effects any diminution of the bony enlargements. I have thought, however, that in some cases in which I have prescribed it for a few weeks it seems to bring the progress of the malady to a standstill, at least for a time. In those incipient cases of the chronic form of the disease which exhibit peripheral nerve-pains its effect in relieving pain is very noteworthy. I have found that this is lessened in from 24 to 48 hours, and in most patients has entirely disappeared in the course of a week. When the early signs are those of stiffness of the neck together with tenderness over the spines of the cervical vertebræ or of stiffness of the jaw its effects are equally good. It is most useful also in those cases of the chronic malady in which the early symptoms are pains in various parts of the body, some referred to the joints and some to the muscles, such as the inner side of the wrist or the ball of the thumb, numbness and tingling of the extremities, and some stiffness of the joints on movement. In these cases I have found that five or 10 grains of duotal taken three times a day for 10 days or a fortnight relieve these symptoms. Now, as it is these early cases of the disease that one may reasonably hope to cope with it is very important, after having obtained favourable results from the action of duotal, to improve the general health by other well-known drugs and to lay down the strictest injunctions as to diet and hygienic measures, and where possible to order a yearly trip to Aix-les-Bains for a few years; for it is an undoubted fact that many cases of osteo-arthritis, not only those exhibiting early manifestations of the affection but also much more advanced cases, maintain their ground for years under suitable treatment.

In prescribing duotal in the acute form of osteo-arthritis I have been careful to differentiate it from allied diseases. From acute or even sub-acute rheumatism this differentiation can generally be effected by noting the principal points which distinguish it from the latter disease; positively, by the fact that the articular swellings (of the larger joints at least) are more circumscribed, by the special susceptibility of the smaller peripheral joints to become involved, and by the progressive character and great obstinacy of the symptoms; negatively, by the absence of tonsillitis, of cardiac lesions, and of profuse acid sweats. From an acute attack of gout it may be separated by the length of the paroxysm, by the want of periodicity, and oftentimes by the large and small joints being indiscriminately invaded in its development, and by there being no particular susceptibility to the invasion of the metatarso-phalangeal joint of the great toe, although it must not be forgotten that these joints are also frequently involved in osteo-arthritis.

The following cases will serve to illustrate the exhibition of the drug:—

CASE 1.—The patient was a married lady, aged 38 years,

she had one child, aged 16 years, a male. Her mother was dead and was said to have been tuberculous. Her father suffered from gout; she had one brother and sister, who were believed to be quite healthy. The patient was anæmic, otherwise she was well nourished; her complexion was fair. The present illness commenced on Jan. 9th, 1900, with slight feverishness and tenderness in both wrists. In a few days other joints became painful, tender, and swollen; first the ankles, then the fingers and elbows. From Jan. 11th to the 14th the temperature curve varied from 101° to 102° F., morning and evening respectively. On the 13th five grains of duotal were ordered every four hours. On the 15th the morning temperature was 100° and the evening temperature was 100·4°. On the 16th the dose of duotal was increased to eight grains, and the temperature on the 17th was 99° in the morning and 99·6° in the evening. The temperature now varied little till the 19th when after 10-grain doses of the drug it became normal in the morning and 90° in the evening. On the 21st the temperature was normal morning and evening, and it did not again rise. By this date also the pain and tenderness had nearly disappeared, but there was still some swelling of the joints, especially those of the hands, and stiffness was complained of in all the affected joints. This swelling and stiffness continued in a smaller degree in all the joints for another two weeks, during which time the patient was taking 10 grains of duotal three times a day. After this the stiffness and swelling became daily much less marked and the drug was discontinued after having been taken for four weeks. Treatment to improve the general health was now adopted and the patient was advised to go to Aix-les-Bains at the end of May.

In Case 2, where an acute attack occurred in a patient who had been suffering from well-marked chronic manifestations of the disease in both hands, I found the drug very valuable. In this patient, a female, single, aged 49 years, anæmic, who had a dark complexion and was a hard worker, the temperature varied between 100° and 101·2° F. The knees and shoulders were very painful with little or no swelling, but the hands became swollen and painful, and stiffness was much complained of. I commenced with five grains of duotal every four hours. The following morning the temperature was 99° and the pain was less. I now ordered 10 grains three times a day for the next eight days. The temperature became normal and the pain and stiffness became less in two days. At the end of eight days the patient had lost all pain and stiffness in the shoulders and knees, and the hands were apparently in the same state as before the acute attack supervened. She continued the drug for another week and then found that she could use her hands with more ease and comfort.

CASE 3.—The patient was a man, aged 58 years, a postman; he was anæmic and had a dark complexion. He had been suffering for some years from the fully developed affection in its most chronic form. The malady was especially marked in the hands, where the well-known flexions were very typical. He complained much of the hip and knee joints, and had great difficulty in walking. I prescribed seven grains of duotal three times a day for two days and then increased the dose to 10 grains for a fortnight. At the expiration of this time there was an improvement, as he could walk with less difficulty. For another fortnight he continued the same dose of the drug and could then walk fairly comfortably, but there was much stiffness in all his affected joints after a night's rest. I now gave him 15 grains three times a day for a week and then found he had comparatively little difficulty in getting about, and he has maintained his ground for some months.

I am, Sirs, yours faithfully,

W. H. RUSSELL FORSBROOK, M.D. Lond.

Buckingham Palace road, S.W., August 20th, 1900.

## "THE PROTECTION OF PARTURIENT WOMEN AND NEWLY-BORN CHILDREN."

*To the Editors of* THE LANCET.

SIRS,—The Manchester Medical Guild are to be congratulated upon the attitude towards the midwives question which, at the instigation of Mr. G. H. Broadbent (*vide* THE LANCET of August 18th, p. 560), they have taken up; for, little as we may like grandmotherly legislation, this scheme is based upon the sound principle that every parturient woman should have fully qualified medical attendance in her labour. And it constitutes a definite policy in opposition to the registration of midwives, which mere blank negation did not. In response to Mr. Broadbent's invitation I would suggest the omission of the "public obstetricians" from the scheme. To the public their appointment will appear cumbrous and unnecessary since the Poor-law medical officers are already appointed to attend to this very thing; the patients will, as now, shrink from engaging an arbitrarily appointed State-paid officer; and thirdly, the functions of the public vaccinators under the new Act have caused so much friction that the profession will strongly deprecate the appointment of officers whose functions would interfere even more with private practice. The alternative I suggest is that a parturient woman whose claim for State (or rate) aid is made good should be free to engage whichever local practitioner, being registered, she may induce to attend her for the fee guaranteed by the State or the board of guardians. It is of the greatest importance that a patient should choose his or her own medical attendant. That is why we are registered.

I am, Sirs, yours faithfully,

Plaistow, E., August 22nd, 1900. P. NAPIER JONES.

## PLASMON.

*To the Editors of* THE LANCET.

SIRS,—In a short report, or rather notice, of a paper read by me at the British Medical Association at Ipswich which was published in THE LANCET of August 18th (p. 515), I was quoted as having said that the preparation of plasmon was a costly one. This is a reporter's error. One of the great advantages of plasmon is that both the material from which it is made and the process of manufacture are exceedingly cheap.—I am, Sirs, yours faithfully,

London, August 30th, 1900. F. W. TUNNICLIFFE.

## "A RIDE FROM LONDON TO EDINBURGH AND BACK ON A TRICYCLE BY A VEGETARIAN IN HIS SEVENTY-EIGHTH YEAR."

*To the Editors of* THE LANCET.

SIRS,—As an addendum to my letter in THE LANCET of August 25th (p. 629) the following particulars may be of interest. I did not eat any flesh food in any shape nor did I even eat eggs. Neither did I touch wine, beer, spirits, or tobacco. I ate whole-meal bread and biscuits when I could get them and a little cheese, but not much. During the first 15 days I never sat down to a table for dinner. I ate my food riding or on a bank by the roadside—some bread-and-cheese with a tomato or banana or both, or some bread and a bit of chocolate. Now and then I got a glass of milk, but I think I felt better without it. On only about 10 of the 31 days did I have any vegetables and only on about seven days a little pudding with or without fruit. My breakfast was mostly weak tea or cocoa-and-milk with bread-and-butter and marmalade or jam. My evening meal was mostly cocoa-and-milk with bread-and-butter and sometimes marmalade. On two or three occasions I had some porridge and once some bread-and-milk. I did not eat at stated times but would munch (my teeth have all disappeared) some bread or biscuit with some sweets or chocolate as I rode along. I did not drink a great deal as a rule during the day, and I have ridden all day without wiping my face, so free was I from sweating, but I drank water sometimes pretty freely in the night. I always took a jug of boiled water to my bedroom and frequently, after my first sleep of about four hours—after which I generally felt quite refreshed—I would munch some biscuit and perhaps some chocolate and drink water as I felt to need it. Then, after reading and thinking for a time I would have another sleep. I did not have any aches or pains nor any signs of distress during the whole time I was away.

My object in taking this ride was to satisfy myself by personal experience that good health and a full measure of vigour can be maintained under total abstinence from flesh, alcohol, and tobacco, and that, too, with such an amount of exercise as was requisite for a considerable effort. The lesson derivable from my experience seems to be that if we fed ourselves more thriftily and lived on simpler food we should enjoy our lives more completely and retain our activity for a longer period.

I am, Sirs, yours faithfully,

C. J. HARRIS, M.R.C.S. Eng., &c.

Kilburn Priory, N.W., Sept. 1st, 1900.

# NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*Increase of Plague.—Inoculation against Plague.—The Pasteur Institute for India.—Health of Bombay City.—Birth-rate in the Punjaub.—Malaria and Water-supply.*

PLAGUE has reappeared at Belgaum, Poona, and Mysore. The plague deaths for the whole of India show a rise, Calcutta reporting 89, Mysore 67, Bombay city 58, Bombay district 45, Bengal districts 23, and Madras province three, making a total of 285. Private information is to the effect that plague is much more prevalent at some of these places than is reported. The continuance of plague in Calcutta with from 50 to 100 deaths every week is very serious. The general mortality of this city is 7 per 1000 per annum above the normal and the excess is not entirely accounted for by the plague. In the absence of any other explanation it is probable that there are more plague deaths than come to the notice of the authorities. The returns for the city of Bombay are extraordinary. For the week ending August 7th there were 1499 deaths, or 834 more than the average for the corresponding period of the preceding five years, the rate of mortality being 92·07 per 1000. There were 354 deaths from cholera and the number of deaths attributed to plague, as mentioned above, seems too small to be correct. For the month of July there were 3147 more deaths than during July of last year. Cholera exists not only in Bombay but in Madura and in the city of Nagur. Owing to plague existing at Hong-Kong all officers, men, and camp-followers proceeding to China have had the option of being inoculated with Haffkine's fluid before leaving their stations.

The Pasteur Institute at Kasauli was opened on August 9th, and 31 persons are now under treatment—namely, one British officer, 16 British soldiers, six sepoys, and eight other natives. The director is Major Semple, R.A.M.C., who was assistant professor of hygiene at Netley, and who visited Paris for the special purpose of studying the anti-rabic treatment. It is hoped that local organisations will arrange to pay the necessary expenses for the poor. The treatment will be entirely gratuitous, but as no hospital accommodation is required patients will have to make their own arrangements for board and lodging. Excellent accommodation for all classes is said to be procurable in Kasauli. It is understood that the Government of India will pay to the institution about Rs. 800 per month for the next three years. The institution also possesses Rs. 75,000 in Government notes, producing about Rs. 220 per month. The income, however, is not sufficient to meet all the expenses, so it is hoped that the public also will subscribe. Before it was opened the Government used to send European patients a three weeks' journey to Paris. The credit of its establishment rests largely with Surgeon-General Taylor, who took up the matter with great spirit in the interests of the British soldier. The anti-vivisectionists are now indulging in declamatory opposition to it. They assembled at Delhi and condemned the institution as being "repugnant to the feeiings and sentiments and to the tenets of every religion" in the country. They also appealed to the Viceroy to withdraw Government patronage from the institution and to prohibit vivisectional experiments either for the manufacture of "Pasteurian serum" or for any bacteriological purpose.

The quarterly report of the health officer of the city of Bombay refers to the large influx of destitute people from the country districts. The death-rate has been 151 5 per 1000 per annum. Dr. Weir complains of the unauthorised terms "Bombay fever" and typho-remittent fever," which are probably forms either of typhoid fever, Malta fever, or relapsing fever. He says that the water-supply "although impure from vegetable *débris* gave better results bacteriologically than was expected. The colonies were somewhat in excess, but pathogenic organisms were absent." The birth-rate was low, but the increase in the number of births points to an increased population. The proportion of males to females by the last census was as 170·6 to 100.

The extraordinary increase in the number of births in the Punjaub for 1899 beats all records. The increase amounted to 152,132, and the birth-rate reached 43·4 per 1000. The death-rate at the same time was 29·57. In the Jullunder, Ludhiana, and Amritsar districts there was an excess of deaths among females under one year old, a fact which raises a strong suspicion of the continued practice of female infanticide. For the suppression of this crime it is proposed to substitute medical supervision for police agency as an experimental measure in certain villages of the Jullunder district.

An inquiry has been held regarding the health of the riparian municipalities to the north of Calcutta and to the east of the river Hooghly, and the report was published not long ago. In his investigations Captain Rogers, I.M.S., had the subject of malaria particularly in view. To test for the amount of malaria a certain number of people, including children, were examined for enlarged spleens on the ground that "the percentage of a population who suffer from enlargement of this organ may be safely taken as the best practical indication of the degree to which the inhabitants are affected by this scourge of Lower Bengal." Precautions were taken to obtain a fair average of the various populations, and about half the persons examined were children. The enlarged-spleen rate was found to vary considerably. In order to explain these differences inquiries were instituted into the waterlogging of the soil, the water-level, the rainfall, and the water-supply. The enlarged-spleen rate was found to be much lower in places situated on the east bank of the Hooghly to the north of Calcutta than in those further to the east. In the more eastern areas the enlarged-spleen rate was 50 per cent., which is considered as approximately the normal figure for that part of the country. An exception, however, was found to exist in an extremely low-lying and waterlogged area which nevertheless had a comparatively small spleen rate. This area was constituted by the municipality of Maniktola, which had a good filtered water-supply. Again, it was found that Cossipore-Chitpur, which had the lowest rate of all, had the double advantage of a filtered water-supply and a situation on the east bank of the Hooghly. Captain Rogers concluded that as certain places equally waterlogged differed in the amount of their malarial infection there must be some other factor to account for the difference and that this was certainly not the absence of the malarial mosquito, because in the least affected area the anopheles were found more widespread than in any other part. The only possible factor he could find was the water-supply, for the two municipalities where the enlarged-spleen rate was low, although the soil was waterlogged and the anopheles abundant, were the only ones which had a filtered water-supply from the source as Calcutta itself. Among drinkers of river water the enlarged-spleen rate is nearly double, and among drinkers of tank water it is nearly treble that which is found among drinkers of filtered water.

August 16th.

# PLAGUE IN AUSTRALIA.

(FROM A SPECIAL CORRESPONDENT.)

THE returns of plague in Sydney for the week ending July 21st are as follows: remaining at the beginning of the week, 51; admitted, two; discharged, four; died, none; remaining at the end of the week, 49. The totals up to the end of the week are as follows: cases, 302; deaths, 101; recoveries, 152; "contacts" isolated, 1702; "contacts" remaining, 26; cases among "contacts," seven. The above figures include Chinese, of whom 10 were admitted with eight deaths, all the other patients being whites.

The returns of plague in Sydney for the week ending July 28th are as follows: remaining at the beginning of the week, 49; admitted, none; discharged, 14; died, one; remaining at the end of the week, 34.

The death was that of a patient admitted as far back as April 27th and was only indirectly due to plague. No case has occurred since July 17th. It seems that the epidemic is now over for this time, and, great and embarrassing as popular excitement was during the earlier three or four months, the complete cessation of public interest and alarm may be judged of from the fact that during last week a charitable fête was successfully held in the grounds of a mansion from which a case of plague was removed not more than six weeks ago. The committee had not even thought it worth while to inquire whether this proceeding was free from danger.

Clean bills of health are now issued endorsed with the late and scattered cases which have occurred since the 10 days' interval. The latest of the two recorded above was isolated on July 17th.

July 30th.

## MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*Precautions against the Plague.*

AT the meeting of the Manchester Port Sanitary Authority held yesterday in the town-hall Dr. J. H. Crocker, the medical officer, presented a report dealing with the outbreak of plague in Glasgow and the measures adopted for preventing its introduction to Manchester. In July a medical inspector from the Local Government Board visited the port and approved of the measures then in use, but since his visit further precautions have been taken. An additional inspector is now at Eastham and inquiries are made of every ship which enters the canal. If a case of sickness is reported a telephonic message is sent to the medical officer and a medical inspection is made before the ship goes into dock. The other inspector visits the ships within the port, inquiring as to any sickness, inspects the vessels as to sanitary conditions, and sends daily reports to the medical officer, who also makes frequent visits of inspection. All the vessels from Glasgow are boarded at Mode Wheel and inquiries made as to any sickness. The names and addresses of all who leave the ships while in port are taken and filed for reference. Foreign vessels bound for Manchester are boarded by the Customs officers at Liverpool and if any cases of sickness are reported the chief officer of the Liverpool Port Sanitary Authority is communicated with. If the disease turns out to be plague, cholera, yellow fever, or small-pox the case is removed at Liverpool. If a case of plague is known to be on any foreign vessel bound for Manchester a medical inspection of all on board would take place. And if a vessel should reach Manchester with a case of plague on board the port medical officer would have power to remain on board and to order her return to Liverpool, where she and all on board would be handed over to the Liverpool medical officer. This power arose from the fact that when the order of the authority was made it was found that Manchester was not suitable for a quarantine station, which therefore was placed at Liverpool. If necessary an additional medical officer to assist Dr. Crocker temporarily may be appointed, for, as the chairman said, he "could not be engaged night and day." These arrangements seem well calculated to protect Manchester from attacks by sea, but no provision has yet been made against the possible introduction of plague in any other way. As one of the local papers says, the infection causing the terrible outbreak of plague at the village of Eyam, in Derbyshire, in 1666—still kept in lively remembrance—was found to have been brought in a bale of cloth sent from London. However, the people here need not feel any apprehension, for it may be considered quite certain that ceaseless vigilance is exercised and that if a case should arise all possible precautions will be taken to prevent the spread of the disease.

*Manchester Sewage Schemes.*

At the meeting of the Manchester City Council to be held to-morrow an important question is to be discussed and possibly decided on—namely, whether the sewage scheme recommended by the experts shall be adopted or that enjoined by the Local Government Board. The former is estimated to cost £337,713 and the latter £487,283. Each is based on preliminary sedimentation and anaerobic bacterial action in tanks, followed by aerobic treatment in contact beds. The difference results from the requirements of the Board as to the extent of the contact beds and in its insistance on the provision of 213 acres of land at Carrington and Flixton, necessitating the construction of a conduit. The scheme of the Board might be proceeded with at once, while the other would involve delay and the need for Parliamentary sanction. The scheme of the Board, though more costly to begin with, would leave some room for extension and there is no likelihood that Manchester will cease to grow for some time to come.

*"Faith Cures" at Oldham.*

It is not always quite clear whether "faith" or disbelief in "doctors" is the motive power influencing such people as the poor woman whose death was the subject of a coroner's inquest at Oldham on August 30th. The husband in his evidence said that his wife complained of feeling unwell on the Saturday but refused medical attendance as she was a "member of the Berachah Mission," whatever that may be, "and they did not believe in doctors." She was found dead in bed on the Wednesday. Her husband went on to say that his sect "believe that faith will cure them. ..... They reckon that the Lord will heal their wounds without a doctor being in attendance." As a rule the working-class people of Oldham are shrewd and sensible according to their lights, but they may be pronounced somewhat short of general culture and a prey to divers fancies and superstitions. The verdict was "Death from natural causes."

*Anthrax in Cheshire.*

Anthrax has broken out at a farm at Cuddington, near Northwich, and the sale of milk has been stopped. At the meeting of the Northwich Rural District Council on August 30th a question was asked as to how it was that the council had been notified in the matter when they had no power to deal with it. Mr. H. E. Gough, the medical officer of health, said: "We have a voice in the distribution of milk." The Agricultural Board deal with the matter and the chief constable is responsible. There seemed a disposition on the part of some members to demur to the stoppage of the whole of the milk from a farm because a single cow had the disease and had been killed, but Mr. Gough said it was laid down that no milk was to be sold until the veterinary surgeon was satisfied that there was no danger of infection.

Sept. 4th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Plague in Foreign Ports: Sanitary Precautions in Liverpool.*

THE medical officer of health has officially notified medical men throughout the city that, owing to the presence of plague in foreign ports, a careful inspection of vessels from suspected ports is now taking place. He emphasises the fact that infected persons apparently in health on arrival may develop illness after landing. It is, therefore, desirable that special attention should be paid to seafaring persons coming under notice in early stages of illness. It will be remembered that a short time ago an inspector from the Local Government Board visited the port of Liverpool in regard to the precautions taken against the plague, and he expressed his approval of the existing arrangements. Needless to say the damage to the commerce of Liverpool, should an epidemic of plague gain ground, would be considerable.

*Asylum Accommodation in Lancashire.*

The difficulty of providing accommodation for lunatics in the Lancashire asylums is gradually disappearing. From the proceedings of the recent quarterly meeting of the Lancashire Asylums Board, it would appear that the new asylum at Winwick is approaching completion, as the board are about to appoint a medical superintendent at a salary of £600 a year, with furnished house and allowances. A committee has also been appointed to look for a site for another asylum. In fact, the board are doing their utmost to provide increased accommodation. The chairman intimated to a deputation from the Bolton board of guardians, who attended to ask the board to consider what could be done for that union in the matter of increased asylum accommodation, that they had an immense number of patients that ought never to have come to their asylums, owing to the action of the Local Government Board. The Asylums Board have also provided additional accommodation for 200 patients at Rainhill and for a similar number at Whittingham. It is a pleasing fact to find the services of the medical superintendents of the asylums appreciated, a resolution "that good service pay carrying no pension may be awarded to the medical superintendents of an asylum after 21 years' service" being carried by a large majority.

*Extension of the Hospital for Women, Shaw-street.*

Nearly £800 have been promised towards the cost of carrying out the alterations consequent upon the proposed extension of the Hospital for Women, Shaw-street. Five gentlemen head the list of subscriptions with £100 each.

*Medical Faculty, University College, Liverpool.*

The winter session of the medical faculty will begin on Oct. 1st. The distribution of medals, prizes, and certificates

for the previous session, and the opening address to the students by the Lord Bishop of Liverpool, will take place in the Arts Theatre of University College on Saturday, Oct. 13th, at 4 P.M. The medical faculty will hold their biennial dinner on the same evening at the Exchange Station Hotel.

*Donations to Liverpool Charities.*

The annual cyclists and harriers' parade, held in June last, has shown an increase of £200 over the amount collected in the previous year. The amount available for distribution among the hospitals was £720, the Stanley Hospital receiving £100, owing to special needs.

*Sanitary Inspectors' Association.*

A meeting of the members of the North-Western district centre of the National Union of Sanitary Inspectors was held at Ashton Hall on Sept. 1st. Mr. Francis Vacher, the president of the union, delivered the annual address which dealt entirely with the duties of sanitary inspectors.

Sept. 4th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Dublin Sanitary Association.*

AT the last meeting of the Council of the Dublin Sanitary Association which took place on August 23rd the following resolution was passed:—

That the council approve the proposition made by the Joint Committee of the Houses of Parliament on the Boundaries Bill that a joint drainage board for the city of Dublin and the townships of Rathmines and Pembroke should be constituted, and that in the opinion of the council a similar organisation for the administration of the Public Health Acts would be for the public advantage of the Dublin metropolitan area.

*Belfast Union Infirmary.*

At a meeting of the Belfast guardians held on August 21st Dr. James Lynass, visiting surgeon to the Union Infirmary, in a report on his department for the past half year, drew attention to the inconvenience of having to admit alcoholic cases to the general wards. There were, in addition to the 179 cases of ordinary alcoholism, 193 patients recently with surgical injuries associated with alcoholism. He advised that separate accommodation should be provided for these cases in the form of a male and female ward which would merely entail some structural changes in rooms existing on the ground floor of the infirmary. Again, it is absurd that cases of insanity should be treated in the infirmary. The proper place for such patients is the asylum, where they would receive expert treatment.

*Typhoid Fever Epidemic in Lisburn.*

At a special meeting of the Lisburn Urban District Council held on August 22nd it was decided in view of the increase of typhoid fever in the neighbourhood of Lisburn to adopt the Infectious Diseases (Notification) Act, 1899, and the Infectious Disease (Prevention) Act 1890. It was decided also that the sanitary sub-officer should act as professor of dairies.

*New Research Scholarship at Queen's College, Belfast.*

Her Majesty's Commissioners for the Exhibition of 1851 have again placed at the disposal of the authorities of Queen's College, Belfast, the nomination of a research scholarship of £150 tenable for two years. Previous holders of these exhibitions have been obliged to do their work in England. There is no reason why the present nomination might not be confined to original work done in some one of the excellent laboratories at Queen's College, Belfast.

*Precautions in Dublin against an Outbreak of Bubonic Plague.*

On account of the outbreak of bubonic plague in Glasgow the authorities at Dublin are taking every precaution to prevent the infection of the city through vessels arriving from suspected ports. Two vessels arrived on August 30th and were detained in the river until an examination was made by the medical officer of health of the South Dublin Union, who satisfied himself that there was no serious disease on board. The Irish Local Government Board have addressed a letter to the Dublin Corporation in which they state that no system of inspection of vessels, however perfect, was capable of preventing the introduction of cases which were not sufficiently developed to afford evidence for their detection. The Local Government Board, moreover, wish to be informed as to what action has been taken by the corporation upon the recent commission of inquiry into the public health of the city of Dublin and what steps have been taken to provide suitable accommodation for the isolation and treatment of cases of plague should they arise, and for the detection and isolation of suspicious cases, in order that the persons under observation might not be themselves subjected or expose others to the risk of infection. The Board also forwarded the report of one of its medical inspectors which contained the following:—

The sanitary condition of the city should earnestly engage the attention of the Public Health Committee and precautionary measures should in every detail be strictly carried out. The question of the destruction of rats (which have been notoriously found to be the medium of conveying infection) should also be considered by the sanitary authority. The destruction of these on incoming ships and in the warehouses by the river-side would be a preventive measure of undoubted advantage and is well worthy of consideration.

The corporation referred the matter to the Public Health Committee.

*Main Drainage of Dublin.*

The foundation stone of the new outfall works in connexion with the main drainage of Dublin was formally laid by the Lady Mayoress of the city on August 28th in the presence of a large and representative audience. The Lord Mayor said that the important contract for the outfall had been handed to Messrs. Pearson and Son whose representative, Sir William Pearson, he took that opportunity of welcoming to Dublin. The citizens might now look forward to the main drainage being completed within two years. Sir William Pearson alluded to the advantage that would result to the health and life of the citizens and remarked that the cost of the scheme would only amount to £1 for each inhabitant.

*Irish Poor-law Medical Officers.*

The disputes between the dispensary medical officers and the boards of guardians continue, and every week the papers are full of discussions at the meetings of the guardians. The following resolution has been passed by the Belfast, the Newry, and the Armagh boards of guardians:

That, as it is manifestly unjust that the guardians should be compelled to pay substitutes of medical officers while such medical officers are engaged in other work for which they receive ample remuneration, this board requests the Local Government Board to alter the dispensary rules (22, 23, and 24) to provide for such cases.

This resolution evidently refers to the fact that dispensary medical officers are often subpœnaed to the assizes as Crown witnesses, and though they are only paid two guineas per diem and expenses the guardians expect that they should pay their substitutes with the miserable pittance doled out by the Treasury. At the meeting of the Armagh board of guardians held on August 28th, Dr. S. Tate, Rich-hill, wrote that as he had been attending a bad case of erysipelas and had been then summoned to attend a midwifery case, which it would have been dangerous for him to attend, he had been obliged to call in Dr. G. Liddle, and he asked the board to order payment for such attendance. Some of the board thought, as the case of erysipelas was a private case and the midwifery case was a dispensary one, Dr. Tate should pay the fee himself. The board divided on the question, and it was decided by 10 votes to 9 to pay the fee.

*The Belfast Ambulance System.*

There is no public service of which the city of Belfast has greater right to be proud than its admirable ambulance system. From the report of the superintendent of the fire brigade (it is by this body the ambulance service is worked) for the year ending June 30th, I find that the duties in connexion with the ambulance service are increasing. 1875 calls were received, occupying over 991 hours, showing an average of 32 minutes per journey from the receipt of the call until the carriage returned to its station. The distance traversed was over 4599 miles, or an average of two and a half miles per single journey. In November last a new carriage was presented to the corporation. Admirable service was rendered by the ambulance system in connexion with the late Belfast Lough accident, the injured passengers being rapidly conveyed from the quay to the hospital.

*The Plague.*

The utmost precautions are being taken by the sanitary authorities in Belfast and the other Ulster ports closely related to Glasgow to prevent the introduction of the plague from that city into Ireland.

Sept. 4th.

# PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Parasite of Dourine.*[1]

AT a recent meeting of the Academy of Medicine M. Nocard, Director of the Veterinary School at Alfort, read an important paper upon Dourine and Its Parasite. The paper was prompted by a series of notes relative to the experimental study of dourine in the horse, which had been submitted to the Academy by M. Buffard and M. Schneider. M. Nocard stated in his paper that trypanosoma, first observed in 1896 by M. Rouget, an army surgeon, had been also found in 1899 by M. Buffard and M. Schneider in two animals suffering from naturally contracted dourine—namely, a horse and a donkey. After sundry passages through dogs the parasite re-transferred to horses communicated to them attacks of dourine absolutely like the naturally caught complaint and, like it, transmissible by coitus. Two well-known maladies are already known to depend upon the trypanosoma—namely, the "Surra" of India and the "Nagana" of South Africa. In future, then, dourine must be placed alongside of these two, even if all three are not simply different manifestations of the same parasite.

*True Essential Hæmaturia.*

It is the general opinion that there is no such thing as essential hæmaturia. M. Lancereaux, however, is not of this opinion and at the meeting of the Academy of Medicine held on August 2nd he spoke with the view of defending the thesis that there is a class of hæmaturia independent of any anatomical disturbance and which is simply due to some disturbance of the nervous mechanism which regulates the urinary apparatus. He cited the observations of Hoffmann who had reported cases of hæmaturia which gave rise to no dangerous symptoms, both in young and plethoric subjects, and in elderly men in whom it occurred, for example, after stoppage of hæmorrhage from piles. He also quoted from Latour d'Orleans who had reported two cases of hæmaturia occurring in young women of nervous temperament after a fit of rage or after suppression of the menses. Monneret had noticed the same thing in chlorotic and hysterical patients. M. Lancereaux had seen many cases of essential hæmaturia. Sometimes it occurred in an arthritic patient who also suffered from hæmorrhoids which had apparently shrunk and dried up (this happened in two cases). Another case was that of a woman who had suffered from hæmaturia for a year. Nothing seemed to stop it until she took one gramme of sulphate of quinine daily for eight days. Another case was that of a man who had hæmaturia every 15 days for six months. He was going to have his kidney removed when M. Lancereaux prescribed a dose of sulphate of quinine varying from 1·25 grammes to 1·57 grammes to be taken every evening. After six days the hæmaturia had entirely disappeared. As a rule the general health is not affected in this form of hæmaturia. The patient has a feeling of uneasiness over the kidneys but no real pain, the hæmorrhage is intermittent, and between the crisis the urine is absolutely normal. The blood and urine are intimately mixed in the bladder. Finally, sulphate of quinine in doses of from 0·80 to 1·50 grammes cures almost all these patients. Such are the characters, diagnostic points, and treatment of this remarkable complaint.

*Gastric Disturbances at the Menopause.*

M. Dalché recently discussed this question before the Therapeutical Society. According to him gastric disturbances are frequent among women at the time of the menopause. Two etiological factors are present: (1) ovarian insufficiency, and (2) the congestive attacks (*poussées fluxionnaires*) which affect the different organs at this time. The immoderate use of tea, coffee, tobacco, strong drinks, and alcohol gives rise to serious gastric trouble. Also a great number of gastric troubles may be set down to a condition of neurasthenia to which most women have to pay tribute more or less heavy at the time of cessation of menstruation. If any doubt is raised as to the connexion between the menopause and gastric trouble proofs are at hand by recalling to mind the sequelæ of a surgically-induced menopause. In women who have had both ovaries excised the medical man sees among an infinite variety of symptoms disinclination for food, gastralgia, hæmatemesis, together with diarrhœal and hæmorrhoidal crises which did not exist while the patient menstruated. Treatment must vary according to circumstances, but the connexion of the menstrual function with these complaints offers some indications. If, for instance, the patient has hæmorrhage from piles it should be encouraged rather than stopped. Mustard foot baths, hot sitz baths, and dry cupping over the kidneys all give relief. If these are not sufficient recourse must be had to blood letting. A fairly large number of leeches may be placed on the inner sides of the knees, as recommended by Trousseau, or applied to the thighs, the hypogastrium, or the epigastrium. In cases where the pain was very acute M. Dalché obtained good results by the use of blisters. Between the crises hydrotherapy is most useful and the effects of ovarian extract must not be lost sight of.

Sept. 4th.

[1] Dourine, or Maladie du Cöit, is an infectious disease occurring in cattle and horses transmitted by sexual intercourse.

# BERLIN.

(FROM OUR OWN CORRESPONDENT.)

*Alleged Existence of Plague in Cardiff.*

No case of plague has occurred in Hamburg since the one mentioned in my last letter.[1] The energetic measures of the sanitary authorities of Hamburg which were carried out under the control of Dr. Nocht, the able chief medical officer to the port, have proved successful. In order to avoid infection no necropsy was made after the death of the unfortunate steward. The vessel was thoroughly disinfected and has now left the quarantine station where it had been for about a fortnight. The authorities of the port of Hamburg did not understand at first where the man could have caught the disease. The steamer *Rosario* had come direct from Cardiff where it had lain for a rather long time. The sanitary officers, therefore, concluded that the port of Cardiff must be infected with plague, probably by steamers coming from Oporto and Bombay. One of the leading Berlin daily papers which has relations with the Government stated 10 days ago that the Imperial Health Office was convinced that plague existed at Cardiff and that there was reason to believe that in other British ports cases of this disease had occurred without being recognised. This was written about a week before the announcement that the disease had appeared in Glasgow.

*Precautions against Plague.*

With a view to avoid infection of German ports by vessels arriving from abroad the Minister of Public Instruction, as chief of the Prussian medical department, convoked a meeting of the medical members of the above department and some other hygienists, including Professor Pfeiffer who had visited India for the study of plague. The meeting discussed the measures taken by the local authorities which were generally found to be satisfactory. The Minister appointed two additional sanitary officers for the port of Stettin where the medical inspection of vessels arriving from abroad was inadequate.

*A False Alarm of Plague in Berlin.*

A fortnight ago the public were again alarmed by the announcement that a case of plague had occurred in Berlin. This had no connexion with the case in Hamburg, the suspected patient being a servant of the Royal Institution for Infectious Diseases, a man who had to clean the rooms in the laboratory where specimens of plague cultures procured from Oporto were preserved. The regulations of the institution are very strict. No one is allowed to enter the rooms where dangerous cultures of any kind are kept except the medical men who work there and one servant who assists them and has to clean the rooms. The members of the staff working in these rooms have to wear a special dress capable of being disinfected and the rooms themselves are situated in an out-of-the-way wing of the building. Everything is thus done to avoid an event like that at Vienna, where the carelessness of a drunken servant three years ago led to an outbreak of plague in the hospital, fortunately confined to three or four cases. Notwithstanding these precautions one of the medical staff working in the plague laboratory a few days ago observed a carbunculous swelling on the nose of the servant attached to the laboratory. The swelling was of a suspicious character and owing to the possibility of an infection to which

[1] THE LANCET, August 18th, 1900, pp. 494 and 560.

the man might have been liable by his work he was at once strictly isolated in one of the pavilions of the hospital of the institution. This proved to be the more necessary as on microscopical examination suspicious bacilli were found in the pus of the part. The patient was attended by the medical man under whom he had been employed in the laboratory and who was isolated along with him in the pavilion. Moreover, the family of the servant and some friends with whom he had last spent an evening, although in perfect health, were all isolated in another ward. Nobody was allowed to enter the ward, the food being supplied to the inmates through the windows. Fortunately the alarm proved to be a false one, as the patient got well in a few days, and cultures of the suspected bacilli were found to be harmless when inoculated into rats and mice. The man and his family were therefore allowed to leave the hospital where they had spent some rather anxious days.

*Treatment of Constipation.*

Dr. Ziemssen of Wiesbaden, writing in the *Berliner Klinische Wochenschrift*, recommends resort to the stomach-pump and to washing out the stomach in cases of persistent constipation. By the daily application of this method the peristaltic movements not only of the stomach but also of the entire gastro-intestinal canal become increased so that soft fæces are generally passed after about half an hour. The success is often so obvious that patients who have suffered from constipation for a long time are able after a week to have a spontaneous action of the bowels every morning and continue to do so for years. The results are often superior to those obtained by aperients, massage, and electricity. Dr. Ziemssen recommends that from half a litre to a litre of Wiesbaden Hochbrunn water should be used and that the stomach should be evacuated at once by lowering the funnel of the pump. This procedure is to be repeated from 15 to 20 times every morning with a greater quantity of water every time till the patient becomes aware of a slight pressure within the stomach. Dr. Ziemssen is of opinion that the treatment acts like massage of the abdominal muscles and that the contractions are propagated to the intestines. The drinking of Wiesbaden Hochbrunnen water has only a temporary effect as an aperient, whilst the application of common hot water by the stomach-pump is useless. Apart from chronic constipation the method has proved useful in chronic catarrh of the stomach, dyspepsia, atony, dilatation, hyperacidity, neuroses, and chronic ulcers of the stomach.

*Medical Graduation of Women.*

By a recent decision of the German Federal Council female medical students of German nationality are entitled to be admitted to the State examination in medicine even if they have passed their preliminary examinations and received their medical education in Switzerland. As the State examinations in medicine begin in November the medical men in Germany will very soon have the opportunity of meeting female practitioners, the number of German female medical students in Switzerland being rather considerable. Those ladies, also, who have already settled in Germany with Swiss diplomas will now be in a position to take German qualifications by passing the State examination without being forced to begin their curriculum again. The present favourable disposition of the Government towards medical women has led to the rather absurd situation that female medical students enjoy privileges as to study abroad which are refused to the male sex.

Sept. 3rd.

## ROME.

(FROM OUR OWN CORRESPONDENT.)

*Sanatoria for Tuberculosis in Italy.*

AT a moment when all hearts are softened by the tragical death of King Humbert, whose kindness to the poor and sympathy with their sufferings are fresh in the minds of the people, Professor Baccelli's suggestion for commemorating his memory by the establishment of sanatoria for the treatment of tuberculosis throughout the country will, it is hoped, be received with substantial support. The leading Roman daily *La Tribuna* makes an eloquent appeal in behalf of the scheme, which it seems has already been initiated by the formation of an influential committee who are to begin forthwith the organising of a great "Sanatorio Umberto I. per la Tuberculosi" as Italy's national monument to the memory of her murdered king. Certainly no record in bronze or marble could so fitly commemorate the best qualities of the late monarch than an institution which would have for its aim the prevention of the untold misery and fearful loss of life directly or indirectly attributable to that most insidious and widespread of all diseases, tuberculosis; and nothing could better serve to perpetuate the memory of his ready sympathy with the sufferings of his people shown on all occasions, but most conspicuously perhaps during times of dangerous epidemics, when he was wont to throw himself heart and soul, regardless of personal risk, into the work of visiting and helping the sick and comforting the dying. The scheme thus begun is an ambitious one, comprehending the founding and establishment of sanatoria throughout the whole of Italy under one control and direction, with a central seat in Rome and branches at such other principal points as are best suited by their climatic and hygienic conditions for the cure of tuberculosis. Owing to its geographical position Italy is singularly adapted for carrying out such a great scheme successfully, including as it does in small compass a vast number of localities totally distinct from one another in their climatic peculiarities and yet possessing in common the great advantages of pure air and the perennial sunshine with which the whole peninsula is blessed. With these different sanatoria all under one management and each offering its own special advantages of climate derived from its topographical position it would be possible to place each patient, no matter where he presented himself, in the surroundings best suited for his particular case as indicated by the nature of the disease, the stage of the destructive process, and the various complications which so greatly determine the kind of climate required. A considerable sum of money has already been collected in Rome for setting the scheme on foot and at Milan enough has already been forthcoming to start a Lombard institution. In Naples the munificence of the Duchess Ravaschieri has made the foundation of the proposed sanatorium at Pozzuoli no longer uncertain, whilst in Palermo another public benefactress, Signora Giovanna Florio, has offered a donation which will bring the fund for the erection of a Sicilian sanatorium to a total of about £10,000. Unfortunately the Villa Hygeia at Palermo about which so much was heard last winter has fallen into the hands of speculators, and in place of the sumptuous hospital for which it was originally intended it is now to be converted into the "Grand Hotel."

*Sanitary Progress in Italian Cities.*

Whilst it may be doubted whether the scheme for the multiple establishment in Italy of sanatoria for the treatment of tuberculosis is not too ambitious ever to be realised and will not prove to be more creditable to the heart than to the head of its sanguine originator, it must be confessed that the Italians are endowed with a degree of public spirit, especially in the direction of sanitary reform, which makes even so great an undertaking assume tangible shape. Our preconceived notions of the Italian character might lead us to regard them as unpractical and chimerical people, but their sanitary progress contradicts this view. Of this we have striking evidence in Rome itself, where, in the face of apparently overwhelming financial and other difficulties, vast schemes of improvement have been undertaken and carried out which have had the effect of a veritable transformation. It is true that to the artist and the archæologist this transformation has not always been a welcome one, but love of the antique and the picturesque must give way when the health and well-being of a large population are at stake. The wholesale removal, for example, of ancient and interesting but insanitary houses and streets; the erection of modern buildings upon such classic ground as the gardens of Sallust or Mecænas; the disappearance of those picturesque banks which made the Tiber so favourite a subject for the painter's brush and the substitution for them of hard, monotonous lines of masonry; all this is vandalism and desecration in the eyes of the lover of Old Rome, who at the same time is fain to admit the vast improvement affected thereby in the cleanliness, comfort, and salubrity of the city. The mortality returns bear eloquent testimony to this amelioration and compare very favourably with those of the other large cities of Europe and of America, among which Rome now stands in the first rank for lowness of its death-rate (17·2 per mille in 1899). In the course of the last decade the extensive buildings on the Esquiline hill, in the Ludovisi quarter, and

on the Prati di Castello, outside the Porta Pia, each in itself a small town, have been added to the ancient city, and in the latter district new streets such as the Corso Vittoria Emanuele and the Via Cavour, leading from it to the new districts, have been opened up. The Tiber, too, which formerly did great damage to adjoining property by its frequent floods, has been effectually walled in by immense embankments of masonry over 40 feet in height from their base, extending on the right bank for a distance of more than four and a half miles, and on the left of six and a half miles. Closely connected with this gigantic undertaking was the construction of the huge main sewers, one on each bank, for collecting the sewage from the branch sewers and carrying it down into the river to a point far below any probable extension of the city seawards. These have a length of about six and a half miles and 11 miles respectively. The total cost of these improvements along the Tiber has reached a figure close upon £4,000,000 sterling. Similar though less stupendous enterprises have been undertaken or are now actively in progress in most of the other large cities of Italy, notably in Genoa, Milan, Naples, and Palermo; and indeed it may truly be said that such an enlightened spirit of progress has entered into the municipal bodies generally as to ensure at no distant date the attainment of a very high standard in the sanitary condition of all the more important cities and towns of the kingdom, particularly those most frequented by foreign visitors.

Sept. 3rd.

## CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

*Plague in Constantinople.*

BESIDES the case of bubonic plague which occurred recently on the ss. *Niger* of the Messagéries Maritimes a second case is reported on board the same steamer. The first was a boy, aged 14 years, who came from Kharput and embarked at Alexandretta; the second case was that of a steward of the same ship. Their illness began with chill, slight fever in which the temperature rose to 40° C., and with enlargement of the glands of the groin as well as of the armpit. This outbreak has made a certain impression on some of the visitors, who left Constantinople immediately. They did so not so much because they were afraid of the plague as to avoid the quarantines which the neighbouring governments would subject them to. I am glad to state that the public health here is perfect, but in spite of the good health of the place Russia has imposed a quarantine of 10 days on all ships arriving from Constantinople. They undergo the quarantine at Theodosia.

*The Twenty-fifth Anniversary of the Sultan's Reign.*

To-day is the twenty-fifth anniversary of the reign of H.M. the Sultan Abdul Hamid II. The Sultan holds in very high esteem the medical profession and never allows an opportunity to go by without compensating merit by honours. Among the other presents to the Sovereign there is that of the Imperial Medical Society, known by repute to many of your readers. The Imperial Medical Society, which was founded during the Crimean war under the auspices of Sultan Medjid by the chief physicians of the allied armies, are presenting to His Majesty an address of congratulation and of good wishes on the occasion, and it has been decided to publish a work relating all that has been done under His Majesty's reign in connexion with hygiene and medicine. The Sultan Abdul Hamid II. was the first among the sovereigns to honour the late Professor Pasteur with the decoration of the Grand Order of the Medjidieh. Dr. Zoeros Pasha, an army physician with the rank of general, conveyed with the compliments of His Majesty the highest rank of the Order of the Medjidieh to Pasteur with £500 as a contribution to the building of the Institut Pasteur in Paris. Professor Pasteur was asked to teach the new science of microbiology to Dr. Zoeros Pasha. In fact, he was taught how to prepare the antirabic virus and how to treat those who were bitten by rabid dogs, and in May, 1887, the first antirabic institute outside France was installed at Constantinople. More than 2500 persons have been treated in this antirabic institute by Dr. Zoeros Pasha, among whom there have been some deaths, averaging 0·5 per cent., and this because most of the patients were too late in taking advantage of the antirabic treatment. In one case an officer of the army who had been bitten by a rabid dog at Ismid (Nicomedia) went to the military hospital of Haidar Pasha where only the wounds were dressed, and shortly after he left the hospital he had symptoms of rabies. Then, and not until then, his case was brought before Dr. Zoeros Pasha. Needless to say that he died. This fact was reported to the Sultan, but not in the right way, and as a consequence Dr. Zoeros Pasha, in spite of his rank and of his long and faithful services, was replaced by Dr. Mari, a Frenchman. The Sultan has also presented the empire with an institute where anti-diphtheritic serum is prepared and the medical men of the country hope to have soon an institute for the preparation of the anti-plague serum. The solicitude of the Sultan for the health of the Turkish army is noticeable. During the last epidemic of cholera he ordered that "water of best quality" from the renowned spring of Karakoulak should be served to the soldiers, and as no cases of cholera were registered among the Turkish soldiers the spring must be considered to deserve its fame.

Constantinople, Sept. 1st.

## CANADA.

(FROM OUR OWN CORRESPONDENT.)

*Annual Report of the Toronto Health Department.*

THE annual report of the medical health officer of the city of Toronto, Dr. Charles Sheard has just been issued and contains the operations of the department for the past year, as well as several exhaustive and important papers dealing with the treatment and prevention of diphtheria and small-pox, with food inspection, and with plumbing and draining. In the sanitary department there were 3213 complaints, 7881 inspections of nuisances, 6234 house-to-house inspections, besides inspections of livery stables, slaughter-houses, &c., and 79 cases were prosecuted in the police-court. The food inspector reported only eight instances of cattle in the market entirely unfit for food. During the year this officer made 9910 shop inspections and made considerable confiscations. The inspection of milk, a vital and important question, has apparently been handled ably by the health department of Toronto during the past year. The total milk-supply of the city embraces 1634 cans daily, which is furnished from an area of country of upwards of 30 square miles. In the opinion of Dr. Sheard, wilful adulteration of this article of diet is not practised to any extent in his jurisdiction. Education of the public will be, however, continued along the lines of perfecting the milk-supply. During the year there were 2397 inspections of city milk depôts, 419 inspections of cow byres, and 598 samples of milk were collected and analysed. As regards contagious diseases there were reported during the year 225 cases of typhoid fever, 1013 of scarlet fever, and 458 of diphtheria, of which 34, 55, and 82 cases respectively resulted fatally. The total number of patients of all kinds admitted to the civic hospital during the year was 804. Of these, 458 had scarlet fever, 334 diphtheria, eight small-pox, one chicken-pox, and three measles. The number of deaths during the year was 58, but six of the patients who died were moribund when brought into the hospital, expiring almost immediately. The death rate, including those who were moribund, was 6·16 per cent., and excluding them it was 5·48 per cent. Professor Shuttleworth, the civic bacteriologist, in his report on the bacteriological work, goes very fully into the nature and duration of diphtheria, paying particular attention to susceptibility as influenced by age. Of 238 cases of true diphtheria the ages were as follows: five years and under, 32·6 per cent.; from five to 10 years, 29·6 per cent.; from 10 to 15 years, 12·7 per cent.; over 15 years, 25·0 per cent. Thus according to this statement children under five years of age are more susceptible. The deaths were as follows: under five years, 24; from five to 10 years, five; from 10 to 15 years, three; and over 15 years, four. During the last year small-pox has invaded the city five times. The medical officer of health gives it as his opinion "that the two secrets of success in handling the disease in a densely populated community are, first, the capability of accurately diagnosing the disease; secondly, the prompt, complete, and absolute isolation of those

infected and exposed to infection." Opposition to vaccination, he goes on to state, so far as the city of Toronto is concerned, is non-existent.

*Typhoid Fever at the Royal Victoria Hospital, Montreal.*

There were treated in the wards of the Royal Victoria Hospital, Montreal, during 1899, 98 cases of typhoid fever, of whom 65 were males and 33 were females. Of these 98 cases 86 were treated to a conclusion, and the observations of the senior resident physician there, Dr. B. D. Gillies, are interesting. As regards age the average age of all the patients was 23 years, the youngest being only three and a half years and the oldest 58 years. Classified in decades, four cases occurred under 10 years of age; 21 between 10 and 20 years; 40 between 20 and 30 years; 16 between 30 and 40 years; four between 40 and 50 years; and in one case over 50 years. The largest number of cases was admitted during the month of August; the smallest number were admitted during December. 52·3 per cent. began in July, August, and September; 18·4 per cent. during October, November, and December; 18·6 per cent. during April, May, and June; and 11·7 per cent. during January, February, and March. Concerning the duration of the cases the average number of days in hospital was 39·5; the average duration of fever was 24·6 days; the longest period of fever was 58 days; the shortest period of fever was eight days. In one case there was definite proof that infection had been contracted through milk. Five cases were admitted from one family where defective sewerage was known to exist, whilst in four other instances two or more members of the family were ill at the same time. Referring to the observations regarding the symptoms it is noticed that 95·4 per cent. of the cases developed gradually with general malaise, frontal headache, and anorexia as the most prominent and constant symptoms. In two cases pain in the abdomen was severe, of sudden onset, and localised so as to simulate an attack of appendicitis. Diarrhœa was present at the onset in 20·9 per cent.; epistaxis in 18·6 per cent.; vomiting in 34 per cent., and delirium in 18·6 per cent., and in nearly every case it was of a low, muttering character. There was an eruption present in 72 per cent. of the cases, the earliest appearance of the rash being on the fourth day of the disease and the latest on the fortieth day of the disease, whilst in one case the rash appeared during the relapse alone. The shortest duration of the rash was three days, the longest was 27 days, the average being 11 days. The spleen was palpable in 67·4 per cent. of the cases; in one case on the first day of the disease; in another until the fourth day of the relapse, being the twenty-fifth day of the disease; on the average it remained palpable for 12 days. A definite relapse occurred in 12·7 per cent. of cases, the longest duration of any single relapse being 29 days, the shortest eight days, and the average 18 days, whilst in three cases the relapse was stated to be more severe than the original attack. Temperature had been normal for 17 days in one case when the relapse set in, while in another it had only been normal for 24 hours when the relapse set in. One patient was admitted to the hospital for typhoid fever who had recovered from an attack four weeks previously. As regards temperature, the highest was 106·4° F.; the maximum in one case was 100·4°; the average in all the cases was 103·4°; and in 48·8 per cent. of the cases it reached 104° or over. The Widal test was employed in all the cases. In only four cases was the reaction negative during the whole course of the disease, and of these three were regarded as abortive cases; in the most prolonged of these cases the temperature remained elevated for 10 days and there were no rose-spots present in any of the four. In one case the reaction appeared as early as the fourth day of the disease; in another case it was not positive until the eighteenth day of the disease; on the average it was present on the eighth day. In six of the cases at the date of discharge from the hospital the reaction has been tried and resulted positively in all. Investigations are being pursued further along this line. The typhoid fever mortality has been higher this year than any other since the hospital opened, there being seven deaths, or 8·16 per cent. Hæmorrhage was the cause of death in three cases, hæmorrhage and perforation in one, perforation in one, and profound intoxication in two cases. During the six years of its existence 494 cases of typhoid fever have been treated in this hospital, divided as follows with deaths:—1894, 84 cases, three deaths; 1895, 84 cases, four deaths; 1896, 72 cases, no deaths; 1897, 75 cases, seven deaths; 1898, 93 cases, four deaths; 1899, 86 cases, seven deaths.

*State of Health in the Yukon.*

The report of the medical health officer, Dr. J. W. Good, dated Dawson, June 23rd, gives the state of health of that district at that time. There was then no typhoid fever, no diphtheria, no small-pox, and no dysentery. More recent reports state that there are now five cases of small-pox down the river from Dawson City which are quarantined, and that Dr. Montizambert, Director-General of Public Health at Ottawa, is on his way there to investigate the outbreak. At the same date last year cases of dysentery and of typhoid fever were plentiful. The number of paying patients in the Good Samaritan Hospital at Dawson was 11; non-paying, 12; total, 23. The number of paying patients in St. Mary's Hospital was 4; non-paying, 14; total, 18. Non-paying patients must make a declaration as to the state of their finances, which is also certified to by a friend, and the rule works smoothly. Months ago the medical officer of health, noticing that small-pox was prevalent in other portions of Canada, advised the Board of Health to lay in a supply of vaccine, as vaccination was not being performed to the extent it should be in that country. The water-supply of the city is stated to be good and in the hands of a good company and the use of drinking water from other and questionable sources is entirely displaced. Great improvements have been made in the way of drainage and removing of obstructions of various kinds from the streets, and good work has also been done in the way of prosecuting merchants and others who profit by the sale of diseased and spoiled articles of food.

*The Medical Department of McGill University.*

The annual convocation for conferring medical degrees was held on June 23rd, when 75 graduates, having fulfilled all the requirements to entitle them to the degree of M.D., C.M. from the University, were presented therewith. A new departure this year, the first of its kind in either Canada or the United States, was the awarding of diplomas of Public Health to four graduates in medicine who had taken this special course at McGill University. These gentlemen were W. W. Ford, B.A., M.D.; J. E. Laberge, M.D.; H. S. Shaw, M.D.; and J. E. Williams, M.D. This convocation brought to a close the sixty-eighth working session of the medical faculty of McGill University. The faculty originated in 1829, the first session beginning with 30 students, and its yearly sessions have continued without interruption, with the exception of the three years of the Canadian Rebellion from 1836 to 1839, the session of 1839–40 opening with 28 students. In making his address the Dean, Dr. Craik, stated that it had been his good fortune to be connected with 50 sessions. 50 years ago the total number of students of all kinds in the faculty was 53; this year 478 were enrolled on the Register, 31 more than last year, and of these 457 were proceeding to their degrees while 21 were doing post-graduate work. 52 of these students came from the United States, 14 more than the previous year, which goes to show the estimation in which this first of Canadian medical schools is held by our neighbours to the south of us. The new department of Public Health has been fashioned, with modifications, after similar qualifications given by some of the institutions of Great Britain.

Toronto, August 18th.

## NEW YORK.

**(FROM OUR OWN CORRESPONDENT.)**

*A New Movement for the Organisation of Private Asylums.*

THE Association for the Study and Cure of Inebriates have held a meeting for the purpose of securing a thorough organisation of all private asylums which exist for the treatment of mental diseases and drug cases. It was stated that there are nearly 100 asylums, homes, and sanatoriums in the New England and Middle States for the treatment of inebriates, mental, and nervous cases, over half of them being charlatan institutions. Such institutions are without organisation or system, are without State or local licence or supervision, and are managed by unknown persons. A large number of representatives of different asylums were present at this meeting and the following propositions were agreed upon as representing the objects of the conference: 1. To promote the scientific study of alcohol and other drug neuroses and to encourage desirable and special legislation

with reference to the care and control of such cases. 2. To isolate the chronic pauper inebriate from the insane and criminal class and to secure the erection and maintenance by the several States of institutions for the segregation and special treatment of chronic pauper inebriates and to incorporate farm colonies or other forms of institutional relief which shall combine medical care with occupation, control, and discipline. 3. To secure in all States the special supervision and inspection of all institutions for the care and control of inebriates and other drug neuroses. 4. To discourage and prevent all efforts to treat alcoholic inebriety or the opium or other drug addictions with secret drugs and other so-called specifics, and to prohibit the sale of all other nostrums which claim to be absolute cures and which contain alcohol, opium, or its alkaloids, or other harmful or pernicious drugs, or which contain substances which are inert and are fraudulent impositions on the public. 5. To encourage, as an association, every individual or organised effort to study scientifically and practically all the various means and methods of both cure and prevention which are found valuable in the treatment of alcohol and other drug addictions. 6. There are many institutions in this country which treat the alcoholic and other forms of drug addiction associated with mental and nervous cases. These institutions should all be organised and follow some general principles and methods of work. By this means public opinion could be more effectually influenced and legislation secured resulting in a great advance in the uniform scientific treatment of such cases.

*Jewish Charities and the Treatment of Tuberculosis.*

The Jewish charities of the United States rank, as a class, among the best in every community. They are well managed and well supported and their aims are definite and are sought to be obtained by the most effective agencies. The first annual meeting of the National Conference of Jewish Charities was held in Chicago this summer when delegates from 35 cities were present. A paper on Federation *versus* Consolidation of Jewish Charities in a City was read by Professor Morris Loeb of New York city. Instead of obtaining funds for charitable societies by means of fairs, entertainments, &c., he recommended more concerted action in bringing to the notice of the community the charitable institutions in its midst and suggested as an alternative for the present system a scheme of federation, wherein the various societies would retain their individuality but would receive their appropriations from a common treasury. Another paper, discussing the relation of bad housing to poverty, showed that the main causes of poverty in the tenement house districts of New York, as proved by statistics gathered for the years 1898 and 1899, were as follows: lack of employment, 19 per cent.; sickness, 15 per cent.; insufficient employment, 11 per cent.; intemperance, 8 per cent.; and no male support, 5 per cent. In a paper on Tuberculosis as Affecting Jewish Charities Dr. Lee K. Frankel, of New York, called attention to the fact that consumption was on the increase among the poorer classes of Jews, statistics collected from the various cities throughout the country proving this fact. He also affirmed that the medical profession of to-day was nearly unanimous in the opinion that special climatic conditions are no longer necessary for the cure of tuberculosis and for this reason he suggested that each constituent society in the conference should endeavour to secure the establishment of sanatoria for the treatment of this disease near its own community. The work of the conference may be summarised as follows: (1) the adoption of uniform rules and regulations regarding the transportation of applicants from one city to another; (2) the care of the consumptive poor; (3) the establishment of a systematic telegraphic code between cities to be used by the various constituents of the conference; and (4) the recommendation of a uniform system of records to be used by the small communities as well as by the larger cities and the publication of annual reports after some uniform plan.

*The Prevention of Premature Burial.*

The horror of being buried alive has resulted in the formation of a society in the city of New York known as the "American Society for the Prevention of Premature Burial." The society has formally applied for a charter and expects soon to demonstrate the usefulness of such a body. Medical men, the promoters state, issue certificates of death without subjecting the body to a thorough physical test in order to ascertain absolutely the absence of life. The proposed charter of the society provides that physicians certifying to the death of persons in the State of New York shall sign a certificate prepared by the society stipulating that the following tests, or as many of them as may be decided upon, have been applied to the body of the supposed dead without having produced any indication of life: two or more incisions in an artery; the palm of the hand exposed to the flame of a candle; a mirror or crystal held to the lips and no sign of respiration; a hot iron or steel placed against the flesh without producing blisters. The society also recommends the establishment of chapels for the repose of bodies during a certain number of hours.

*Railway Accidents.*

The latest official figures given by the Interstate Commerce Commission show that during one year there were in the United States of America, all told, 51,743 casualties resulting from railway accidents. Of this number 7123 persons were killed and 44,620 were injured. The number of trespassers killed and injured was very large, there being 4040 killed and 4730 injured. The number of passengers killed was 259, and the number wounded was 3442. During the previous year there were 221 killed and 2945 wounded. The ratio of those killed to those who travelled was one person to every 2,189,023. Of the employés one out of every 420 was killed and one out of every 27 was injured. Of those working on locomotives one was killed to every 165 persons. In New York State where safety brakes have been employed there were 260 persons killed, as against 279 for 1898, and 6725 injured against 6988 for the previous year.

*Trustees for Children of the City of Boston.*

This is the third year during which not only the "pauper" and "neglected" children, but the institutions for truant and juvenile offenders have been under the charge of an unpaid board of men and women. This class number nearly 1500. The administration has been marked by several distinct steps in advance. One was the complete abandonment of institutional life for normal children, other than those under sentence, and another very important step was the thorough investigation of every case before admission. This was undertaken not merely to determine the question of legal eligibility, but to ascertain whether admission to the status of a city dependent is the best thing practicable for the child. The mother is carefully consulted, charitable societies are appealed to, and every effort is made to find the wisest solution.

*Instruction for the Deaf.*

Mr. J. C. Gordon of the Illinois School for the Deaf gives the following figures which will be found interesting: The number of pupils in schools for the deaf in the United States in 1899 is 10,291. Of these 61 per cent. are taught speech, oral instruction being used exclusively, or a "combined" method. The balance of 39 per cent. are not taught speech, but use the sign or manual methods exclusively. It is noticeable that the oral method predominates most strongly in the New England or Middle States. In the Central and Western States 58 per cent. are taught speech, while in the Southern States only 31 per cent. are under oral instruction.

August 18th.

# Obituary.

JOHN TRESSILIAN TOLL, M.R.C.S. ENG., L.R.C.P. EDIN.

THE news has just reached this country of the death of Surgeon-Major Toll on the voyage from the Cape to Melbourne on board the ss. *Australasian*. Mr. Toll was born in London about 48 years ago and was taken by his parents to South Australia when a child. He was educated at the Adelaide Grammar School, but came to this country in 1871 and entered Queen's College, Birmingham, and all his fellow-students will hear of his untimely death with the deepest sorrow, for "Jack" Toll enjoyed a well-deserved popularity with all. He held two resident appointments at the Birmingham General Hospital, and he also studied in Edinburgh, at University College Hospital, and in Paris. Soon after obtaining his diploma in 1877 he returned to Australia as surgeon in charge of the emigrant ship *Airlie*. Shortly after his arrival he entered

into partnership with his brother-in-law, Dr. Gething, and on the death of that gentleman in 1883 he became Government health officer. He also had the post of medical officer to the Port Adelaide corporation for 15 years. He had the medical oversight of the Largs Bay and Glanville forts and also of the colonial warship *Protector*. When arrangements were being made for the despatch of the first South Australian contingent to the front he offered to accompany the force as a volunteer medical officer without remuneration and went with the troops up the country to Bloemfontein where he was attached to one of the hospitals. Here he was stricken down with the terrible scourge enteric fever. He, however, became convalescent and was invalided home. The *Adelaide Advertiser* of June 25th, commenting on the voyage, says: "The voyage was closed by one sad incident of especial interest to South Australia. Surgeon-Major Toll of Adelaide, who had himself fallen a victim to enteric fever, was returning home. He quickly became a great favourite on board. He was of that temperament which makes men popular. On June 20th the gallant surgeon-major expired. He was seized with an epileptic fit and sank soon afterwards. He was buried at sea with full military honours but his death clouded the end of the voyage."

He married a daughter of the late Mr. W. R. Mortlock and a niece of the Hon. A. Tennant and leaves an only son.

### JOHN ORTON, M.D. T.C.D., L.R.C.S. IREL.

DR. JOHN ORTON died on August 19th at Beeston, Notts, where he was born 55 years ago, the son of John Orton, L.S.A. (an apprentice of John Abernethy), who practised at Kegworth, where in 1826 he was the first English surgeon to successfully perform primary amputation at the hip-joint. Dr. Orton succeeded to his father's practice at Beeston about the year 1867, so that for some 70 years the name has been a well known one in Beeston and the neighbouring villages. The subject of this notice was a man of strong character, a passionate lover of Nature, simple and unassuming, but strong in his hatred of anything like pretence or sham, unconventional and ever good-natured and kind. He was a vigorous athlete, a votary of cricket, archery, and lawn-tennis. Beeston by his death loses an "institution" and the profession an upright capable general practitioner. To his many friends and relations the memory of Dr. John Orton will be a sweet one. The unflinching way in which he met his long and painful illness was part and parcel of his character. Dr. Orton never married.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Wilhelm Wagner of Königshütte, a surgeon of great ability, who, though he was unconnected with the teaching staff of any university, yet had been granted the title of professor.—Dr. Porson of Nantes, who distinguished himself during the Franco-German war and who subsequently helped to establish the Union of French Medical Syndicates, being president of the union for five years.

## Medical News.

FOREIGN UNIVERSITY INTELLIGENCE.—*Baltimore Medical College:* Dr. Rowland has been appointed to the Chair of Midwifery.—*Berlin:* Dr. Max Nitze has been promoted to an Extraordinary Professorship of Diseases of the Urinary Organs.—*Chicago (Rush Medical College):* Dr. Westcott has been appointed Assistant Professor of Ophthalmology.—*Freiburg:* Dr. Wilhelm Autenrieth has been promoted to an Extraordinary Professorship of Chemistry.—*Lausanne:* Dr. Freyer has been recognised as *privat-docent* of Internal Pathology.—*Prague (German University):* Dr. F. Weleminsky has been recognised as *privat-docent* of Hygiene.—*Rennes:* Dr. Bodin has been appointed Professor of Pathological Anatomy and Bacteriology.—*Yale:* Dr. Bartlett has been appointed Professor of Pathological Anatomy.

MR. H. E. BURCH, M.R.C.S. Eng., L.R.C.P. Lond., has resigned the appointment of Resident Surgeon to the Memorial Hospital, Bulawayo.

THE RECENT SOLAR ECLIPSE.—The report of the expeditions organised by the British Astronomical Association to observe the total solar eclipse of May 28th, 1900, will be contained in a volume shortly to be issued from the office of *Knowledge*. The work will be edited by Mr. E. Walter Maunder, F.R.A.S., and will contain many fine photographs of various stages of the eclipse.

NORTH DEVON INFIRMARY.—The annual meeting of the subscribers and friends of the North Devon Infirmary was held at Barnstaple on August 21st under the presidency of Lord Fortescue. The report stated that during the past 12 months 654 in-patients and 2269 out-patients had been treated. The average daily number of in-patients was 46, the average stay of each being 25½ days. The financial statement showed that the total ordinary expenditure exceeded the ordinary income by about £500. The committee reported that the convalescent home in connexion with the infirmary at Morthoe was doing a most useful work.

FEES FOR MEDICAL WITNESSES.—An inquest was held at Trowbridge, Wiltshire, on August 27th, upon a boy, aged 10 years, who had died from tetanus at the cottage hospital. The jury returned a verdict in accordance with the medical evidence and the county coroner (Mr. Sylvester) expressed regret that he was unable under the county council regulations to allow a fee to the medical attendant as the death occurred in a hospital. He added that he was of opinion that the Wiltshire county council misunderstood the terms of the Act, which applied only to paid medical officers of hospitals and not to honorary surgeons as in the present case.

LITERARY INTELLIGENCE.—The Sanitary Publishing Company, Limited, announce as ready shortly a new work, entitled, "Essays on Consumption," written by Dr. J. Edward Squire, physician to the North London Hospital for Consumption. An appreciative introduction is contributed by Sir William Broadbent, Bart., M.D., F.R.C.P. Lond., &c.—In our issue of August 25th we reviewed Dr. George Gould's Pocket Medical Dictionary. Appended were the name of the American publisher and the price in terms of American money. Mr. H. K. Lewis, Gower-street, asks us to state that his firm hold the market for the book over here and that the price in this country is 5*s*. net.

THE LATE MR. J. MUDGE.—Mr. James Mudge died at his residence, Hayle, Cornwall, on August 26th. Mr. Mudge, who was born at Bodmin, received his medical education at King's College Hospital and Aberdeen University, qualifying M.R.C.S. Eng. and L.S.A. in 1851. He shortly afterwards commenced practice in Hayle, and was for many years medical officer of health for the local boards of Hayle and Phillack. Mr. Mudge, who was one of the best-known surgeons in West Cornwall, will be much missed in Hayle and the neighbourhood, where he was most popular. The deceased was a prominent Freemason and twice filled the chair of the Cornubian Lodge, being made a Prov. J. G. W. in 1869. The funeral, which took place at Phillack on August 29th, was largely attended.

VACCINATION RETURNS.—At the meeting of the Gloucester Board of Guardians held on August 28th it was reported that the vaccination returns for No. 1 district from July 1st to Dec. 31st, 1899, were as follows: births registered, 179; successful vaccinations, 73; conscientious objections, 20; deaths of unvaccinated children, 19; vaccinations postponed, 7; and children removed, 12; leaving 48 in default.—At the meeting of the Long Ashton (Somerset) Board of Guardians held on August 28th, under the presidency of Mr. F. Weatherly, M.R.C.S. Eng., it was stated that for the six months ending December, 1899, there had been 267 births registered, 161 children had been successfully vaccinated, and 25 had died unvaccinated. There were four postponements and 12 removals, and 55 children remained unvaccinated.—At the meeting of the Devonport Board of Guardians held on August 31st it was reported that during the years 1898 and 1899 there had been 3668 births registered. 1754 children had been successfully vaccinated, and 1020 were unaccounted for. One of the members considered this very unsatisfactory as 50 per cent. of the children were unaccounted for, and eventually a sub-committee was appointed to confer with the vaccination officers upon the matter.

THE annual cricket match between "Parsons and Doctors" which took place recently at Exeter resulted in an easy victory for the medical profession.

PRESENTATION TO A MEDICAL MAN.—On August 24th Mr. James T. Neech, L.R.C.P. Edin., L.F.P.S. Glasg., D.P.H. Vict., of Tyldesley, Manchester, was presented with a silver-mounted set of game and meat carvers by the staff of the Leigh Joint Fever Hospital, Astley, on resigning his appointment of medical officer to the institution to take up the duties of medical officer of health for the county borough of Halifax.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BEALE, H. R., L.R.C.P., M.R.C.S., has been appointed Junior Obstetric House Physician to St. Thomas's Hospital.

BENNETT, J. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Fourth Sanitary District of the Maidstone Union, vice A. Wood, deceased.

BOULTON, A., L.R.C.P. Lond., M.R.C.S., D.P.H., has been re-appointed Medical Officer of Health by the Horncastle Rural District Council.

BOWEN-JONES, L. M., L.R.C.P. Lond., M.R.C.S., D.P.H., has been appointed Medical Officer of Health for the Borough of Carmarthen, vice W. L. Hughes, deceased.

BURFIELD, T., M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

CLARKE, H. H. R., L.R.C.P., M.R.C.S., has been appointed Assistant House Physician to St. Thomas's Hospital.

CUNNINGHAM, J. F., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

DAVISON, H. E., M.B., B.S., B.Hy. Durh., M.R.C.S., L.R.C.P. Lond., has been appointed Resident Medical Officer to the Newcastle-on-Tyne Dispensary, vice W. Hardcastle, resigned.

DUDGEON, L. S., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Electrical Department of St. Thomas's Hospital.

EDWARDS, T. H., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

ENSOR, C. A., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Tisbury Rural District, vice J. A. Ensor, resigned.

EVE, F. C., B.A., M.B. B.C. Cantab., has been re-appointed House Physician to St. Thomas's Hospital.

FERGUSSON, JAMES HUGH, F.R.C.S. Irel., D.P.H., has been appointed Medical Superintendent Officer of Health for the County Borough of Londonderry.

FLANAGAN, P. J., L.R.C.P., L.R.C.S. Irel., has been appointed Certifying Surgeon under the Factory Acts for the Carney District, County Sligo.

GREENWOOD, ALFRED, M.D., Ch.B., D.P.H., L.R.C.P., L.R.C.S., has been appointed Medical Officer of Health to the Borough of Crewe and Medical Superintendent to the Crewe Isolation Hospitals, vice Meredith Young.

HARRIS, H. G., M.B., B.S. Durh., M.R.C.S., L.R.C.P. Lond., has been appointed House Surgeon to the Paddington Green Children's Hospital, London.

HARWOOD, H. M., M.A., M.B., B.C. Cantab., has been appointed House Physician to St. Thomas's Hospital.

HAWKINS, C. L., M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

HEDLEY, E. W., M.A., M.B., B.C. Cantab., has been re-appointed House Physician to St. Thomas's Hospital.

HEWETSON, ALFRED, M.R.C.S., L.R.C.P. Lond., has been appointed Assistant Surgeon to the Huddersfield Infirmary.

HOWLETT, B. F., L.R.C.P., M.R.C.S., has been appointed Senior Obstetric House Physician to St. Thomas's Hospital.

KILVERT, J. E., L.R.C.P., M.R.C.S., has been re-appointed Senior Ophthalmic House Surgeon to St. Thomas's Hospital.

KINLOCH, R. B., L.R.C.P., M.R.C.S., has been appointed House Physician to St. Thomas's Hospital.

KNOX, R. G., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Freshford District of Somerset.

MACKEITH, JOHN, M.B., C.M. Edin., has been appointed Medical Officer to the Exeter Postal Staff, vice J. Moore, resigned.

MARTIN, A. E., M.A., M.B., B.C. Cantab., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

MENNELL, Z., L.R.C.P., M.R.C.S., has been appointed Clinical Assistant in the Special Department for Diseases of the Ear in St. Thomas's Hospital.

MORGAN, R., M.D., L.R.C.S. Irel., has been appointed Certifying Surgeon, under the Factory Acts for the Ballyfeard District of the Kinsale Union, County Cork.

NITCH, C. A. R., L.R.C.P., M.R.C.S., has been re-appointed Clinical Assistant in the Special Department for Diseases of the Skin in St. Thomas's Hospital.

POOLE, J. S., M.D. Dubl., has been appointed Certifying Surgeon under the Factory Acts for the Mallow District in the County of Cork.

RUTHERFORD, R. A., L.R.C.P., L.R.C.S. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Manorhamilton District, County Leitrim.

SELOUS, C. F., L.R.C.P., M.R.C.S., has been appointed Assistant House Physician to St. Thomas's Hospital.

SLOSS, WILLIAM, M.B., Ch.B., has been appointed Junior House Surgeon to the Bootle Borough Hospital, Liverpool.

STEVENSON, ARCHIBALD, M.B. Glasg., has been appointed Junior Assistant Medical Officer to Hawkhead Asylum, Crookston.

TAKAKI, Y., L.R.C.P., M.R.C.S., has been appointed House Surgeon to St. Thomas's Hospital.

TAYLOR, T. S., M.A., M.B., B.C. Cantab., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

TODD, CHARLES, M.D., D.P.H. Cantab., has been appointed Assistant Bacteriologist to the Antitoxin Department of the Jenner Institute of Preventive Medicine at Sudbury, Harrow.

WATKINS, J. W., M.D. Edin., M.R.C.S., has been re-appointed Medical Officer of Health for Earlestown and Newton.

WILLS, B. S., L.R.C.P., M.R.C.S., has been appointed Assistant House Surgeon to St. Thomas's Hospital.

WINGRAVE, WYATT, M.D., has been appointed Physician to the Central London Throat and Ear Hospital, Gray's Inn-road.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BELGRAVE HOSPITAL FOR CHILDREN, 77, Gloucester-street, London.—House Surgeon, for six months. Board and residence, with £5 allowance.

BERKSHIRE ASYLUM, Wallingford.—Second Assistant Medical Officer, unmarried. Salary £120, rising £10 annually to £150, with board, furnished apartments, and attendance, &c. £6 per annum allowed in lieu of liquors.

BRADFORD CHILDREN'S HOSPITAL.—House Surgeon, male. Salary £100 per annum, with board, residence, and washing.

CARLISLE DISPENSARY.—House Surgeon. Salary £150 per annum, with apartments (not board).

CITY HOSPITAL FOR INFECTIOUS DISEASES, Newcastle-upon-Tyne.—Resident Medical Assistant for one year. Salary £60, with board, lodging, and washing.

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer to the above Hospitals, unmarried. Salary £100 per annum, with board, washing, and lodging at the Hospital. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Commencing salary £125 per annum with the usual allowances.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125, with prospect of increase to £250, with furnished apartments, board, attendance, and washing.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DUNDEE ROYAL INFIRMARY.—Resident Medical Assistant for six months. Salary at the rate of £40 per annum, with board and washing.

FORT JAMESON, North-Eastern Rhodesia.—Medical Man to attend the officials and employees at Fort Jameson, the headquarters of the Administrator of N. E. Rhodesia, for 12 months. Salary £500 per annum and quarters. No allowances for travelling expenses. Apply, by letter only, to the Medical Officer, British South Africa, 15, St. Swithin's-lane, London, E.C.

GESTO HOSPITAL, Isle of Skye, N.B.—Resident Medical Officer. Salary £200 per annum, with free furnished house, garden, coals, light, and taxes. Apply to Mr. J. Simpson, Portree.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.—Junior House Surgeon for six months. Salary at the rate of £30 per annum, and board, lodging, and washing provided in the hospital.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with an honorarium of £25.

HULME DISPENSARY, Dale-street, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, coal, and gas.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Non-resident House Surgeon for six months. Honorarium at the rate of £25 a year.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

MANCHESTER CHILDREN'S HOSPITAL.—Junior Resident Medical Officer for six months, unmarried. Salary at the rate of £80 a year with board and lodging. Apply to the Secretary, Dispensary, Gartside-street, Manchester.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments, and board. Apply to the Secretary, 38, Barton Arcade, Manchester.

MANCHESTER ROYAL INFIRMARY AND DISPENSARY.—Honorary Assistant Surgeon.

NEWCASTLE-UPON-TYNE CITY LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £140 a year, rising £10 annually to £190.

NEWPORT AND MONMOUTHSHIRE HOSPITAL, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence (no stimulants).

NORTH CAMBS. HOSPITAL, Wisbech.—Resident House Surgeon. Salary £140 per annum, with furnished house.

NORTH SHIELDS AND TYNEMOUTH DISPENSARY.—Non-resident House Surgeon and Dispenser. Salary £150 per annum, with an allowance of £20 a year towards house rent and taxes.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon for the Hyson Green Branch, unmarried. Salary £200 per annum. Special arrangement as to board, &c.

PARISH COUNCIL OF KINCARDINE, Ross-shire.—Resident Medical Officer. Salaries offered £52 10s. per annum as Medical Officer, £5 per annum as Vaccinator, with fees in lunacy in addition. Apply to Mr. D. Ross, Inspector of Poor, Ardgay.

PARISH OF ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £51 sterling. Apply to the Clerk of Parish Council, Rousay, Orkney.

PARISH OF RESOLIS AND DISTRICT, Ross-shire.—Resident Medical Officer. Salary £72 10s., with a good general practice.

PECKHAM HOUSE ASYLUM, Peckham.—Senior Assistant Medical Officer. Salary £200 per annum, with board, &c.

PRESTON ROYAL INFIRMARY.—Assistant House Surgeon. Salary £60 per annum, with board, lodging, and washing, &c.

ROCHDALE INFIRMARY.—Resident Medical Officer, unmarried. Salary £100 per annum, with board, residence, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon, for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—House Physician for six months. Salary at the rate of £40 per annum, with furnished apartments, board, and washing. Also Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments, board, and washing.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, Ryde.—Resident House Surgeon. Salary £50, and fee of £10 10s. for the annual course of lectures to the nurses.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer, for the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £75, with furnished apartments, board, and washing. Apply to the Clerk to the Guardians, West Bar, Sheffield.

ST. PETER'S HOSPITAL FOR STONE, Henrietta-street, Covent-garden, W.C.—House Surgeon for six months. Salary at the rate of £100 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £24 per annum, with board, washing, and residence.

TOTTENHAM HOSPITAL.—House Surgeon, for six or 12 months. Salary £50 per annum, with board, residence, and laundry.

WEST AFRICAN RAILWAYS EXTENSIONS.—Qualified Medical Officers required to accompany an important Special Survey Party leaving London early in October. Salary £40 to £50 per month.

WEST BROMWICH DISTRICT HOSPITAL.—Resident Junior House Surgeon. Salary £50 per annum, with board, lodging, washing, and attendance.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and also House Surgeon for six months. Board and lodging provided.

WOOLWICH UNION.—Assistant Medical Officer, for the Infirmary at Plumstead, unmarried. Salary £120 per annum, rising £10 yearly to a maximum of £150, with apartments, rations, and washing. Appointment subject to statutory deductions. Apply to the Clerk to the Board, Union Offices, Woolwich.

WHITBY UNION.—Public Vaccinators for the Whitby Sub-district and the Rural District respectively. Apply to the Clerk to the Guardians, Whitby.

# Births, Marriages, and Deaths.

## BIRTHS.

BIDWELL.—On Sept. 5th, at 59, Wimpole-street, Cavendish-square, W., the wife of Leonard A. Bidwell, F.R.C.S., of a daughter.

HAMILTON.—On Sept. 3rd, at Skew Gables, Cole-park, Twickenham, the wife of J. J. C. Hamilton, M.R.C.S., L.R.C.P., of a daughter.

MACPHERSON.—On Sept. 1st, at Henley-on-Thames, the wife of W. H. Macpherson, M.R.C.S., L.R.C.P. Lond., of a son.

MARTIN.—On August 29th, at Cranmere, Cosham, Hants, the wife of Staff-Surgeon J. McCardie Martin, D.S.O., R.N., of H.M.S. *Barfleur*, of a daughter—stillborn.

SIMPSON.—On Sept. 1st, at Kynance, Farnborough, Hants, the wife of Captain J. Tracy Simpson, M.D., R.A.M.C., of a daughter.

WALLIS.—On Sept. 4th, at Welbeck-street, London, W., the wife of F. C. Wallis, F.R.C.S., of a son.

WILLIAMS.—On August 28th, at Port St. Mary, Isle of Man, the wife of Stanley W. Williams, L.R.C.P. Lond., M.R.C.S., of a son.

## MARRIAGES.

HAYMAN—JAMES.—On Sept. 4th, at the Parish Church, Weston-super-Mare, by the Rev. G. Shallcross, rector of East Harptree, William Speed Hayman, M.B. Lond., Thorncliffe, Clapham-park, to Lilian Emma, eldest daughter of W. H. James, solicitor, Fortfield, Weston-super-Mare.

HOWSE—HEAWOOD.—On August 28th, at St. Luke's Church, Torquay, Arthur E. Howse, M.R.C.S., of Falkland Lodge, Torquay, to Ethel Florence Logan, only child of Mr. James Heawood, of Shirenewton, Monmouthshire.

JAGO—ROBERTS.—On Sept. 1st, at St. Clement's, Barnsbury, Thomas Dinnen Jago, M.R.C.S. and L.R.C.P., eldest son of Thomas Jago, surgeon, Arundel-square, Barnsbury, to Annie Florence, second daughter of T. Andrew Roberts, surgeon, of Richmond-road, Barnsbury.

PAYNE—ALLISON.—On Sept. 1st, at St. Saviour's, Croydon, William Henry Payne, M.R.C.S., L.R.C.P. Lond., of Vesta-road, Brockley, S.E., to Ethel Frances Warrell, of Norbury-crescent, Norbury, youngest daughter of the late George Allison, Esq.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Death*

# Notes, Short Comments, and Answers to Correspondents.

## THE WILES OF A QUACK.

DURING the recent fatal illness of a late eminent physician the following announcement appeared in an evening paper: "Sir A—— B——, M.P., is suffering from acute cancer of the liver and there is little hope of his recovery." This appears to have caught the eye of an enterprising quack medicine vendor who had not sufficient knowledge of the *personnel* of the medical profession to be aware of the patient's identity, for there is no allusion to it in the following letter, which was addressed to the House of Commons with a request that it might be forwarded:—

> "DEAR SIR,—Noticing the above clipping I thought perhaps 'twould not be out of place to let you know that cancer of the liver has been cured repeatedly by medicine, and I will be happy to put you in the way of being cured if you feel disposed to depute someone to call upon me by appointment either by wire or letter. I have no object or motive in thus writing you other than a desire to help my fellow-creatures, more especially when laid up by a disease generally accepted as incurable. I am well known to a number of gentlemen of position, among whom are some who are cognisant of my successful endeavours to help my fellow-creatures when laid up by diseases hitherto considered incurable.
>
> "Yours faithfully,
>
> "G. W. ROBERTSON."

It will be noticed that the benevolence of this gentleman towards his fellow-creatures did not take him so far as to induce him to forward a sample of his wares gratis, and therefore we can hardly do him an injustice if we assume that one object of the deputation which he was willing to entertain on behalf of the patient would have been to arrange for a recompense in return for his intervention. While we do not suggest that the cure of cancer of the liver would not be a medical feat deserving recompense, we do protest against ill, and perhaps dying, persons, whose eminence may cause their condition to be a matter of notoriety, being solicited by strangers in this revolting manner. We feel that our protest is hardly likely to remedy the evil. Any effective remedy would not be easy to find, The writer of the letter words his communication with some care; he infringes no law that we are aware of; probably his nostrum would arrive, if purchased, under the cover of a Government stamp, and nothing in his communications would show any pretence of his being medically qualified. And as it is extremely unlikely that he would waste paper and stamps in offering to cure "diseases hitherto considered incurable" unless from time to time his offer were accepted, we cannot expect him to desist from a profitable, if cruel, trade on account of a mere protest. He may send his communication to some poor sufferer, until then ignorant of his or her hopeless condition, and so precipitate the end by shock. He would then be liable to penalties, but the circumstances would probably prevent the relatives from exacting them. We should like to hear from any of our readers whose patients have been honoured with the attentions of Mr. G. W. Robertson.

## THE CARE OF AN EPILEPTIC.

*To the Editors of* THE LANCET.

SIRS,—I should be glad of your advice in placing a young girl, aged 17 years, in a suitable home. She is an epileptic and of weak mind and at times is seized with fits of violence, when she will attack her mother, her sole companion during the day, and kick or even bite, break panes of glass, ornaments, &c., and as she grows stronger is getting quite beyond her mother's control. I have thought of the epileptic colony but do not know the address or I should write for full particulars before troubling you. Your kind assistance will be thankfully received by

Yours faithfully, L.R.C.P. & S. IREL.

Sept. 4th, 1900.

*** Our correspondent had better communicate with the National Society for the Employment of Epileptics. The secretary is Mr. G. Penn Gaskell and the office is at 12, Buckingham-street, Strand, London, W.C. The Meath Home at Godalming might also suit the patient. The address is Westbrook, Godalming, Surrey, and the honorary secretary is Mrs. Leonard Burrows.—ED. L.

## CORONERS' FEES.

*To the Editors of* THE LANCET.

SIRS,—I have recently had to give evidence at an inquest at Ipswich for which I was allowed the usual fee of one guinea for the inquest and one guinea for the post-mortem examination. The inquiry was held on a Saturday. The jury required a post-mortem examination to be made. This I did on the following day (Sunday) and was assisted most ably by Dr. Paterson of Ipswich. As the case was one of injury from some explosive it was unusually prolonged and exhaustive and most carefully conducted, as there was to be an adjourned inquiry in consequence of an official for the Government to attend at the adjourned inquest on the Friday following.

I attended at the offices of the Ipswich coroner at his request to give him a preliminary report of the result of the inquest on the Monday, on which day I was compelled to go to London. And on the Friday following I left London at 10 A.M. and gave my evidence at the adjourned inquest at Ipswich; being kept until the very last witness had given his evidence, I was not able to get back to London (Plumstead) until 11 P.M.—13 hours in all. The coroner, who is a lawyer and who was most complimentary to me, said that we were "very poorly paid as a profession" and "he would have been glad to have paid me a fee of 10 guineas, but they were not allowed to pay any fees for adjournments," and all he could allow me was my out-of-pocket costs for fares, thus leaving me without any remuneration whatever for loss of time, payment for substitute, refreshment *en route*, and loss of a midwifery case whilst away. I claimed 3*d.* per mile each way for fares, but even this was refused and I had to accept a smaller fee.

I am, Sirs, yours faithfully,

Putney, S.W., August 28th, 1900. A. S. MORTON, M.D. Durh.

## WHO PAYS FOR DISINFECTION?

*To the Editors of* THE LANCET.

SIRS,—I enclose my card. Will you kindly oblige me with an answer in your next to the following. W., his wife, and four children go to the seaside in lodgings; about four days after arriving one child is taken ill with scarlet fever and is at once removed to an isolation hospital. W. and the rest of his family return home at once. The sanitary authorities have now sent W. an account for 25*s.* for disinfecting the lodgings and for disinfectants. W. objects to pay on the grounds that he never asked the inspector to call and disinfect and that the disinfection ought to be done free of charge by the sanitary authorities. W. had to pay the lodging-house keeper for the four weeks he took the rooms for, though only occupying them about four days. Can the sanitary authorities make W. pay the 25*s.* for disinfecting another person's house and for the disinfectants?

I am, Sirs, yours faithfully,

Sept. 3rd, 1900. PONTIUS.

*** Unless our correspondent's solicitor advises him to resist the claim we recommend him to pay the 25*s.*, though we recognise that to do so is a distinct hardship. He has a good case upon which to argue that he is not liable, but to attempt to establish the case he must have legal assistance. And he might after incurring further expense fail.—ED. L.

## YEAST IN "PUTRID" OR TYPHUS FEVER.

A CORRESPONDENT sends us some extracts from the *European Magazine* for 1799 and from Buchan's "Domestic Medicine," 1824, giving instances of wonderful recoveries in cases of putrid fever after the administration of yeast. He asks whether the same treatment might not give good results among our troops in South Africa. Yeast was doubtless employed in cases of putrid fever, whatever that term meant, fairly frequently in the early years of the present century and for many years before. It was recommended by no less an authority than Stokes in 1816, but the general results did not come up to the expectations which had been formed. Apparently yeast does exercise a favourable influence in certain forms of streptococcal infection, such as furunculosis, and a correspondent writing in our issue of July 31st, 1852, claimed to have witnessed the good effects of yeast, given in doses of one tablespoonful in water three times a day, in epidemics of boils. It is perhaps possible that the putrid fevers of the older physicians may have been instances of mixed infection, and thus partly streptococcal.

## MARRIAGE OF COUSINS.

*To the Editors of* THE LANCET.

SIRS,—I have lately been consulted as to whether first cousins may marry without fear of damage, mental or physical, to their offspring. The would-be contracting parties are, as far as I know, healthy and there have been no previous intermarriages between their families.

I am, Sirs, yours fathfully,

Sept 4th, 1900. G. C. P.

*** When cousins are healthy and have no proclivity to hereditary disease they may safely marry, but the existence of a strongly-marked predisposition to tuberculous or other taint should prevent such marriages. Marriage with cousins exaggerates the influence of heredity.—ED. L.

## WANTED, A DIAGNOSIS.

*To the Editors of* THE LANCET.

SIRS,—A strong but nervous man showed me about six weeks ago a sample of urine which he had passed three days previously after he had been using a mowing machine for a couple of hours, from 3 to 5 P.M., on one of the hottest days which we had in July. The urine (three days old) seemed to contain blood, but I could not absolutely verify this on microscopical examination. He had no pain or other local symptom at the time or afterwards. A specimen passed on the day on which I saw him contained mucus. On the evening of that day he was sick and was purged and his skin was irritable. No nettle-rash developed and the stomach and bowel symptoms soon passed off on light diet. The later specimens of the urine contained at first a good deal of deposited phosphates, phosphates on boiling, and was iridescent, never alkaline, but never strongly acid, the specific gravity ranging from 1009 to 1020. At times it continued iridescent, deposited phosphates on boiling, was slightly hazy at bottom on standing, but all in a much lessened degree. There were no symptoms suggesting stone apparent. At first I gave him citrate of potash with buchu, later diluted phosphoric acid and nux vomica, with saline purgatives occasionally.

I am, Sirs, yours faithfully,

August 26th, 1900. INQUIRER.

## "THE CORNUTOR OF SEVENTY-FIVE."

*To the Editors of* THE LANCET.

SIRS,—If any reader of THE LANCET happens to possess a copy of a small octavo pamphlet bearing the above title and would be kind enough to lend me the same for a short while I should be very much obliged. There were two editions, each of which was published in 1748. Either of them would suit my purpose, but I should prefer the second.

I am, Sirs, yours faithfully,

Brightwalton, Wantage, Sept. 1st, 1900. GEO. C. PEACHEY.

## UNQUALIFIED PRACTICE.

"M.R.C.S." writes to us as follows: "I have on several occasions been asked by medical friends if surgeons are not allowed to cover or employ the unqualified, in what position are nurses at hospitals where they are constantly in the accident room doing minor surgery such as opening abscesses, introducing sutures, removing and replacing bandages in cases of fracture, &c., without any instructions or supervision—probably in scalp wounds sometimes closing and thereby concealing a fracture which might have been discovered by more knowledge and care."

We hope that there are not many hospitals in which the nurses act as our correspondent describes, "without any instructions or supervision," and if there are even one or two where such practices are carried on, all we can say is that they should at once be stopped. Medical students are specially exempt from any share in the offence of covering, it being taken for granted, as it is taken for granted in the case of nurses, that their work is done under supervision.

*M.B.*—A list of medical teachers will be found in THE LANCET of Sept. 1st, 1900 (p. 717). In our opinion any teacher who is accustomed to coach for the final examinations of the various examining bodies would be found quite competent. Our correspondent had better procure specimens of past examination papers and direct the attention of the tutor selected to the course of study therein indicated.

*L.R.C.S. Edin.*—If our correspondent will consult THE LANCET for Sept. 1st he will find the information which he requires.

*Mr. P. McKay.*—Our correspondent will find the list which he requires in THE LANCET of July 14th, 1900 (p. 143).

*York.*—There can be no objection to anyone who is qualified for it applying for the post.

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Sept. 6th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation Vacuo. | Maximum Temp. Shade. | Min. Temp | Wet Bulb | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Aug. 31 | 30·31 | S. | ... | 108 | 77 | 56 | 58 | 60 | Hazy |
| Sept. 1 | 29·94 | S.W. | 0·26 | 84 | 68 | 59 | 61 | 61 | Raining |
| " 2 | 30·12 | W. | 0·23 | 86 | 64 | 55 | 56 | 60 | Cloudy |
| " 3 | 30·37 | N.E. | 0·01 | 108 | 64 | 51 | 53 | 57 | Cloudy |
| " 4 | 30·41 | S.W. | ... | 95 | 67 | 47 | 49 | 51 | Hazy |
| " 5 | 30·26 | W. | ... | 104 | 71 | 50 | 53 | 55 | Hazy |
| " 6 | 30·18 | N.W. | ... | 101 | 71 | 50 | 53 | 55 | Fine |

**During the week marked copies of the following newspapers have been received:** *Hertfordshire Mercury, Yorkshire Post, Bristol Mercury, Mining Journal, Herts Advertiser, Malvern Advertiser, Reading Mercury, Hertfordshire (Hemel Hempstead) Gazette, Local Government Journal, Southampton Observer, People's Journal, Surrey Advertiser, Leeds Mercury, City Press, Local Government Chronicle, Sanitary Record, Australasian Medical Gazette, Scotsman, Citizen, Architect, Builder, Times of India, Pioneer Mail, Liverpool Daily Post, Meath Herald, Lincoln Leader, Batley Reporter, Leicester Post, Manchester Courier, Birmingham Gazette, Bradford Observer, Pall Mall Gazette, Hull Daily News, Grimsby News, Newcastle Journal, Islington Gazette, Darlington Echo, Staffordshire Advertiser, Literary Digest, South Africa, St. James's Budget, Shield's Morning Mail, Sun, Ceylon Standard, Daily Telegraph, Poole Herald, Madras Standard, South Wales Daily News, Essex County Chronicle, Kentish*

*Observer, Public Health, Norfolk Standard, Worcester Herald, Kensington News, Manchester Evening Mail, Eastern Daily Press, Devon Weekly Times, Lynn Advertiser, Salisbury Express, Physician and Surgeon, Springburn Express, Cambrian Times, Yarmouth Independent, Paddington Mercury, Stirling Journal, Hull Times, Malvern Advertiser, Horncastle News, Isle of Man Times, Weekly Free Press and Aberdeen Herald, Science Siftings, &c., &c.*

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (10th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (11th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**WEDNESDAY (12th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

**THURSDAY (13th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**FRIDAY (14th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**SATURDAY (15th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

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**MONDAY (10th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Skin.)

**TUESDAY (11th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. S. Taylor: Consultation. (Medical.)

**WEDNESDAY (12th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Dr. B. Bramwell: Clinical Lecture.

**THURSDAY (13th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

**FRIDAY (14th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. D. Grant: Consultation. (Throat.)

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THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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ABSTRACT OF THE

# Address in Surgery,

ON

# TUBERCULOUS LESIONS FROM A CLINICAL POINT OF VIEW.

*Delivered before the Canadian Medical Association at Ottawa on Sept. 13th, 1900,*

By EDMUND OWEN, M.B. LOND., F.R.C.S. ENG.,

SURGEON TO ST. MARY'S HOSPITAL, AND CONSULTING SURGEON TO THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND-STREET, LONDON.

MR. PRESIDENT AND GENTLEMEN,—Though the substance of the address which I have the high honour of presenting to you may entirely fail to arouse in you any measure of satisfaction, yet I think I may claim your kind appreciation for its title. For it gives the assurance that I am not going to ask you, even in your imagination, to pass any of this September day in that gloomy room in which Death is made to deliver up his grosser secrets; nor in that other place where, in an atmosphere of methylated spirit and oil of cloves, you are accustomed to unravel the tangled threads of morbid tissues. My remarks will deal with tuberculous lesions as the surgeon meets them day by day in hospital ward and operating theatre and in private practice. It is a good thing for a surgeon now and then to get away from pathologists and morbid histologists. In recent years there has been, perhaps, rather too much inclination to apotheosise the morbid anatomist, who, standing high in his suit of sable, looks upon the clinical surgeon as if his chief duty were to supply him with material.

In the title of my address are the words "from a clinical point of view," and desiring to emphasise the fact that the word *clinical* related solely to remarks made and work done in the sick-room and in the theatre, I thought it well to call attention to its exact meaning. But on looking it out in "Liddell and Scott," I found to my dismay that κλίνη was not only *that on which one lies, a couch or bed*, but secondarily, a *bier*. I confess that the discovery somewhat disconcerted me. If a *bier* why not a *mortuary table?* At any rate the word "clinical" is of wider signification than I supposed it to be; so that the pathologist might have right on his side when he claimed that clinical instruction, begun at the bedside, and carried, perhaps, into the operating theatre, is not actually complete until he has written the epitaph.

Even on this side of the middle of the dying century, institutions were in existence in which much pathological work was actually done within the walls of the hospital itself. This, of course, we know to have been quite wrong. But surely we have now gone to the other extreme: the pathological laboratory is constantly getting further and further away from its source of supply. The pathologist is no longer a practitioner of medicine, his interest is not in the case but in the subject.

The clinical surgeon has of late, I think, been a little too much under the influence of the experimental pathologist and bacteriologist. When some important surgical problem awaits a solution which cannot be effected in the ward or on the operating table, the clinical surgeon turns to his enthusiastic and obliging friends in the laboratories who, in order to help him, straightway proceed with careful thought and gentle hands to sacrifice upon the altar of Hygeia some mongrel curs or a few of those tailless rodents which, so far as I can see, have been provided solely for the use of the experimental physiologist and pathologist. Then, because such-and-such a thing happens under such-and-such circumstances in the laboratory to the dog or the guinea-pig, the experimental pathologist is apt to assume that in different circumstances it must happen also in man himself.

No one will think, I trust, from what I have said, that I would underrate the work of the experimental pathologist; it certainly is not so, for I well know that it is to these workers that we owe our knowledge of the precise cause of diphtheria as well as of tuberculosis—of tetanus and erysipelas, and of many other serious diseases. And knowing the cause we have been enabled in many cases greatly to influence the course of the disease by treatment. Indeed, it would be almost impossible to over-estimate the practical value of experimental laboratory work both to the profession and to the public. Nevertheless, there are some of the public who, in their ignorant well-meaning, and in their well-meaning ignorance would once and for all stop such beneficent research. But stranger still, there are some members of our own profession in England who also try to get in the way of scientific progress. Fortunately, however, they have not the power of doing much harm.

Much of my clinical work has lain amongst senior students: I come in contact with them just as they have left the laboratories and are proceeding to put what they imagine to be the "finishing touches" upon their professional education. They have spent many delightful hours in a pathological laboratory and in a white cotton smock; they have cultivated and even tamed bacilli; they have seen how potent they may be for evil, and they are firmly of opinion that if once such germs gain access to a suitable spot in a suitable individual, nothing short of the most vigorous surgical measures can suffice for the eradication of the disease and for the emancipation of the host. This is the students' bacteriological faith and except they act up to it their patients cannot be saved. Many young practitioners also hold that faith. Where do they learn it? Not in clinical surgery.

But is the outlook in advanced tuberculous disease necessarily so hopeless in the absence of active surgical treatment? To answer this very important question I will instance an imaginary case of a young man who a year or so previously hurt his back in a fall at a gymnasium. He has now pectoral neuralgias, and dull pains between his shoulder-blades and in his back, which have probably been ascribed to "rheumatism." Eventually the discovery is made that the third and fourth dorsal spinous processes are unduly prominent, and it is evident that the bodies of those vertebræ have undergone complete tuberculous disintegration. The disease is close behind the arch of the aorta, and the surgeon is unable to get at it. He cannot scrape it, and he cannot even irrigate it with germicidal lotions. I believe that there are some surgeons who would attack it if they could: *rien n'est sacré pour un sapeur;* but fortunately he cannot possibly get at it. What, then, is to be the future of this patient? Is he going to die the death, as the guinea-pig would in the laboratory? Most certainly not. He is to be made to lie about, in the sun if possible, and he is probably going to get well. Everyone here has acquaintance with such an individual, or if he does not know him personally he has seen him in the street. He is rather a short man with peculiarly high, square shoulders, and with a boss between them. And not only has he long since outgrown his tuberculous disease without any operative assistance whatever, but could we see him in his own home we might not improbably find him—and I say it with some regret—surrounded by a crowd of apparently healthy sons and daughters.

Such a case is one of great clinical importance; it shows that a man with an undoubted tuberculous lesion of the first magnitude can completely recover without having undergone any operative procedure whatever. At the end of the nineteenth century it is somewhat unusual for any patient with any surgical affection to be allowed the opportunity of showing what he can do without submitting himself to operation, so that such an account as that which I have just instanced becomes not only important but actually interesting. One rarely hears speak now of the *vis medicatrix Naturæ:* surgical zeal has apparently rendered it not only obsolete but superfluous.

Another instance of the favourable course which undoubted and severe tuberculous disease may run without active surgical interference, is seen in the case of old-standing hip-joint disease, the boy actually "growing out of his trouble." The disease, let us suppose, began at that period of life when it is customary to send a boy to school, and his school-life was frequently interrupted and was continuously clouded by the affection. But he is now a young man at college, and though he walks lame and is precluded from taking an active part in athletics, still he is vigorous, and he has evidently and completely triumphed over his disease. I am not sure that I have in clinical work ever before used the specious expression, "growing out of a disease"; and possibly I might not do so now if I thought that there were any students or unqualified persons present, for its adoption

might prove unfortunate or even dangerous. It is a rather favourite expression, however, amongst parents and other ill-informed persons when confronted with a child with a tuberculous lesion. Would they expect a garden to grow out of its weeds or a field grow out of its thistles? No; it is a popular superstition, but, like most erroneous beliefs, it is founded on a substratum of truth. For, as a matter of fact, many patients do "grow out of" tuberculous disease.

I have failed to discover that iodoform is of any peculiar value in the treatment of tuberculous lesions. At any rate I have long since discarded it, and I have not noticed any falling-off in the results of my practice in consequence. Iodoform is an irritant and a poison; and it is apt to be septic, as germs can grow upon it. Some time since a lady was sent to me for my opinion about a tuberculous ulcer of the anus which a practitioner had long been treating with iodoform. She earnestly begged me to consider if I could not recommend some other local application, as she said that the smell of the yellow powder rendered her "socially objectionable." This was for her a very serious matter, as she kept a fashionable boarding-house, and whilst many members of her household seemed to notice the peculiar odour, some few of her young men "paying-guests" actually appeared to recognise the drug itself.

### THE FORCIBLE STRAIGHTENING OF CARIOUS SPINES.

The direct treatment of the angular deformity resulting from tuberculous disease of the spine is a subject that a few years ago was thrust somewhat vigorously upon us, not only by articles in the medical papers but by the reproduction of photographic representations of ghastly clinical procedures in the pictured journals of the lay press. This is hardly the way in which one would expect solid surgical work to be advanced.

To affirm that the forcible straightening of carious spines must needs be unsurgical simply because it is a reversion to the ways of the bone-setter would be unfair, for the blundering bone-setter sometimes did good by chance. But at any rate he experienced none of that sense of responsibility which a surgeon must feel when he is proposing to straighten a tuberculous spine. It is obvious that in straightening the angle the tuberculous ulcer of the vertebræ must be widely opened out, and that if the neural arches have been already cemented together this rigid support must be broken across. And, supposing that this is done, and that the patient survives the risks which are inseparable from the procedure, will the widened osteal ulcer duly heal and the neural arches again become solid? Possibly so. But—and this is the point—will there be no further recurrence of the hump?

Though I should be grieved to stand in the way of surgical advancement, I do not mind getting in the road and temporarily impeding traffic whilst we are taking time to consider the route, and are assuring ourselves that the stream of surgical practice is going in the right direction. My opinion is that the deformity of Pott's disease does not lend itself to operative treatment; that forcibly to interfere with it is to thwart Nature in her good attempts at effecting a curative consolidation in her own way—and Nature's ways, as a rule, are not unworthy of our respectful recognition. I think, further, that in a short time we shall hear very little about the method.

The humped back of spinal disease is, of course, an opprobrium, and it is small wonder that the surgeon is anxious to efface it. But if he had given proofs of such laudable anxiety at the beginning of his treatment of the case he would probably have had no hump to deal with. I have no hesitation in saying that, even at the present time, the treatment of spinal disease in its earliest stages is too often half-hearted and sometimes actually blameworthy. It may be urged by way of excuse that at the very beginning of spinal disease the symptoms are so equivocal that the practitioner hesitates even to whisper his opinion, lest the disappearance of the symptoms should suggest that after all he is an alarmist. He knew that the girl had symmetrical pains in her chest, abdomen, or legs; he knew that she got easily tired at play, or that she was inclined to loll and lie about when others were full of activity, and that, regardless of nursery manners, she persistently sat at meals with her elbows on the table. He suspected spinal disease; he even told the parents that the girl should be kept quiet. He may actually have gone so far as to sketch out a plan of treatment which was designed to secure a certain amount of rest, but he was slack in seeing that even this small measure was carried out. In short he had not the courage of his opinions. So the case was allowed to drift.

Oh, for the spirit of Lady Macbeth who called out to her weak-kneed spouse and fellow-practitioner—

> "Infirm of purpose! Give me the daggers!"

I am a great admirer of Lady Macbeth though I am fully aware that her character is not faultless. She was not the sort of person, perhaps, to be trusted with the dissection of tuberculous glands from the neck or of operating on a case of torticollis, but how splendid she would have been in the treatment of early spinal disease. There would have been no half-measures with her.

### THE TREATMENT OF VERTEBRAL CARIES.

If a practical surgeon were asked what is the proper treatment of early spinal disease he would unhesitatingly say "rest." Yes, absolute and uninterrupted rest. But there is only one way of insuring such rest for a child, and that is by making him lie flat in bed. As I shall set forth directly, he is not to be kept actually in bed all the time; but in every case the treatment is at any rate to be commenced by imprisoning him in a pillowless bed. This, I feel sure, is the only way of successfully inaugurating the treatment of rest. But it is of little use if, when in bed, the patient is allowed to roll about, to sit up for his meals, or to hang over the side of the bed in order to pick up a dropped toy. The details of the treatment must be seriously considered, and the medical man must make it his business to see that they are loyally and thoroughly carried out. He must not content himself merely with giving his instructions; the parents will very likely want careful looking after as well as the boy, or else as soon as the medical attendant has left the house, or at any rate after a short period of rest, the boy will probably be allowed to do pretty well what he likes, and so the case will quietly drift. What the circumstances demand is the presence of a sort of clinical policeman in the house—in the shape of a hospital nurse.

I know that there are all sorts of schemes, corsets, apparatus and braces (as my American friends call them) for treating spinal caries without keeping the child flat. But they are all wrong; wrong in theory and wrong in practice; and if they could be cast into the bottomless pit, and every case of spinal disease could from the beginning be treated by continuous rest in the horizontal position, there should be no more of those unsightly humps to invite speculative interference. Of course, I do not include in my anathema Phelps's box splint, the double Thomas's splint with head piece, or any form of cuirass which takes the child in bodily and keeps him flat. Indeed, the design of each one of them is well-nigh perfect; but what I want utterly and severely to condemn is the modern ambulatory treatment of spinal caries. Indeed, I think it probable that after all the stir about the new treatment of hump-backs by forcible straightening has subsided, a most important beneficial clinical outcome will be that every surgeon will feel himself compelled to be far more careful in the adoption of patient and efficient prophylactic measures in the early days of the disease. Hear what Sir Benjamin Brodie says upon the subject. This is the sentence at the very beginning of his valuable chapter on the "Treatment of Caries of the Spine." "From the first moment, therefore, in which the nature of the case is clearly indicated, the patient should abandon his usual habits, and be confined altogether on his bed or couch."[1]

Naturally one turns also to see what Percivall Pott has to say upon the question of the treatment of the disease which bears his honoured name. And it is somewhat of a disappointment to find him so taken up with the subject of the "Palsy of the Lower Limbs" which follows destruction of the bodies of the vertebræ, that apparently he has not the inclination to discuss general measures. But it is all delightful reading; and even to-day it is brimful of clinical instruction. What a relief it is to read a chapter or two of Pott, or Brodie, or Chassaignac after one has been poring over the pages of some modern text-book in order, as the saying is, to "keep abreast with the times"! Pott seems to put his red velvet sleeve around one's shoulders and to draw one aside from the bustling crowd of the "busy practitioners" (in whose peculiar interest modern text-books are quaintly said to be written), and to talk to one in the delightful manner of those whose literary style has not been spoilt by the habit of counting words on telegraph forms, or

[1] Observations on the Diseases of the Joints, 1850, page 342.

of compiling "copy" of precise length, and in a limited time, for medical publishers!

However, Pott has a few remarks to make about the treatment of the later stages of spinal disease, but I am afraid that they will not prove acceptable to most modern surgeons any more than my own poor remarks on that subject may do. Still, it is a great pleasure to know that one is in good company the while Pott is talking about the treatment by "spinnal supports" and "steel boddices," and as I am telling you what he says I feel his velvet sleeve leaving my shoulders and actually passing around my neck. He says that though the use of these pieces of machinery is so general, and the vulgar prejudice in their favour is so great, he has long been convinced of their perfect inutility; and, moreover, that he is satisfied their effects are mischievous.

Speaking generally, the acceptance of a simple, unromantic clinical method makes a far more serious demand upon the parent's or the patient's confidence than does the bidding of him to do some greater thing. This is understood and acted upon by the quack who, merely to create an impression, inserts in a lengthy prescription some rare and perhaps rubbishing ingredient which he thinks the apothecary will be unlikely to have in stock; who writes out a fussy dietary with unworthy attention to detail, and who, having failed to effect the promised cure, endeavours to preserve an unenvied reputation by sending his confiding patient to some far-distant watering-place. In spite of education people love quackery now just as much as they did in the time of Elisha; and the higher they are in the social scale the more, apparently, they seem to hanker after it. The brief clinical record which we have of the tuberculous lesion of the Syrian Lord Roberts admirably illustrates these points, for,

> "Naaman was wroth, and went away, and said, Behold, I thought, He will surely come out to me, and stand, and call on the name of the Lord his God, and strike his hand over the place."

No; if he was to undergo the water-cure it certainly should not be in a muddy Israelitish stream; he knew of a couple of spas in Damascus which were really high-class! "So he turned and went away in a rage." But being "a great man" he was not obstinate; so he changed his mind, followed out the instruction to the letter, and, to his intense delight, attained the reward which sometimes falls to those who do exactly what their medical attendants tell them. At this point, so far as this address is concerned, the clinical aspect of the case of Naaman ends; but it still contains an important lesson from a public point of view. For when the gallant officer found that his cure was complete he went straight to his good doctor—whilst the tear of gratitude was still in his eye—and begged his acceptance of a substantial and appropriate reward for the great service which he had rendered.

Here, in eastern Canada, it would especially ill become me to speak lightly of the value of cod-liver oil in the treatment of the disease under consideration, but perhaps I may humbly suggest that there are other remedies which may be looked to in the circumstances. As a matter of fact I am a great believer in the value of the oil, but I would not against his will insist on a child taking a dessert-spoonful or even a teaspoonful of it three times a day—as the manner of some is. So forced down, it is apt to upset the stomach as well as to cause diarrhœa, and it may then be found floating upon the surface of the dejections. We are all apt to get too much in the habit of prescribing medical and dietetic treatment by routine, ignoring the fact that constitutions are not equally made to pattern. You have heard of that submissive patient for whom Sir Andrew Clark had laid down a very particular and strict regimen which ended up as follows—"and after dinner one cigar; not a strong one; a single Manilla cheroot." In answer to the illustrious physician's inquiry, a week later, as to how the dietary had answered, the unhappy patient, whilst replying that he was certainly better, pleaded to be let off the cheroot, which had invariably had the result of dispossessing him of his dinner! Possibly, however, after all, it was that cheroot which had played the most important part in effecting the gentleman's improvement.

Cream, butter, bacon, and other fatty foods are all good for tuberculous patients, but I think that there is nothing quite so valuable as cod-liver oil. And if a patient assures me that he *cannot* take it, I often manage successfully to administer it after breaking up a conspiracy amongst his olfactory, optic, and pneumogastric nerves. He probably confesses that he likes sardines; so, without his becoming aware of the trick, I have the preservative cotton-seed oil emptied away, and keep the sardine-box filled with fresh cod-liver oil, of which every day he unconsciously takes a substantial amount. For a tuberculous infant I order systematic inunction of the limbs and body with cod-liver oil every evening after the warm bath. I fully understand that this is apt to make the child "socially objectionable," but this is overlooked when the mother finds that the child is improving, and steadily increasing in weight. A steady increase in weight is a splendid clinical omen in the treatment of tuberculous or quasi-tuberculous patients.

### PROPHYLAXIS.

The extermination treatment of tuberculosis is a subject in which every member of the community should be encouraged to take a personal and intelligent interest. It is a great mistake to allow it to be regarded merely "a doctor's question." And to wage a successful war of extermination the attack should be begun right early. It is a question which is of vital importance for the nursery, the schoolroom, the dwelling-house, the store, the office, the barrack—in fact, it concerns every department and every period of life. The disease is everywhere, and its eradication is, therefore, a matter of concern to everyone. It has not yet been shown that the offspring of tuberculous parents are born actually tuberculous, but it is beyond question that they are very prone to inherit a peculiar physical condition which renders their tissues an easy prey to the germs of the disease. The family history of many patients who at the threshold of life become the subjects of enlarged glands, or of chronic affections of the bones or joints, gives incontrovertible evidence of there being a marked hereditary disposition in the matter of tuberculosis.

So comes the question, ought there to be a law preventing those who are undoubtedly tuberculous taking upon themselves the responsibility of parentage? There are some who would answer this affirmatively and without hesitation. But what would the Church in general say to it, and what would the tuberculous curate in particular say to it? He would tell us that he reads in the very beginning of his Book that he is to "Be fruitful and multiply"; and, to do him justice, it must be admitted that in England, at any rate, he does his best to carry out this instruction to the very letter. But let him finish the injunction—Man was to be fruitful that he might *replenish* the earth. Now, though I do not claim to be in possession of peculiar knowledge on this point, I cannot think that the Architect of the Universe who "saw everything that He had made and, behold, it was very good," could have desired that this beautiful world was eventually to be stocked with so large a proportion of tuberculous rubbish. I am fully conscious of the fact that in suggesting the desirability of preventing the marriage of tuberculous subjects I am advancing a somewhat extreme measure, but surely the subject enters very largely into the question of prophylaxis. It is one, moreover, that will have to be deliberately approached and dealt with some day, and that, perhaps, soon. I do not think that our Houses of Parliament as at present constituted will be anxious to occupy themselves with an attempt to solve this question, vast as its Imperial importance is, but I think that the county councils which we have lately established through England might find the task not uncongenial. The question is fully as important as that of water-supply, or of protection from fire, or of the isolation of infectious disease, each of which is already in their grasp. Indeed, I think that it falls in under the last heading. And what scope it would afford for discussion!

You will remember that when Horatio and Marcellus joined Hamlet on the platform after the appearance of the ghost, and showed great anxiety to know what had been the subject of his remarks, Hamlet tried to put them off by telling them that his communication had been something of quite a commonplace nature, on which Horatio ejaculated:—

> "There needs no ghost, my lord, come from the grave,
> To tell us this."

I do not know what space the "perturbed spirit" had traversed in order to deliver his address to the unhappy prince, but I have travelled about 4000 miles to deliver mine. And if you feel inclined to suggest that there was no need for one to come so far to tell you that which I have just unfolded—that it is commonplace, and by no means worth my long journey or your short one—I shall conclude with Hamlet's retort,

> "Why, right; you are i' the right;
> And so, without more circumstance at all,
> I hold it fit that we shake hands and part."

As a matter of fact, I have not, like the ghost, temporarily escaped for the purpose of this communication from a place where sulphur, burned in the open, is the ordinary domestic fuel, but I am here in response to a kind and highly flattering invitation from yourselves. I had, indeed, made arrangements for spending an autumn holiday which certainly did not include two weeks of sea-sickness; but when I received your President's command (for so I regarded your invitation) I at once scattered my personal plans and considerations to the winds and decided to accept it. And let me tell you that coming to Ottawa is not to me like going amongst strangers, though it is my first visit here; it arouses in me a feeling somewhat like that experienced by a man who is taking a homeward journey, for my father was a Canadian. From my infancy I have had pictured to me, and have been encouraged to interest myself in, your forests and rivers, your orchards and wide fields of waving corn, your green pastures and still waters, and your lingering snows (kindly notice that I have put the snows *last*). I have also constantly heard from my childhood of the intense loyalty of the peoples of this great and fertile country, and of the loving devotion of its sons and daughters to that dear Lady who is, indeed, a Mother to us all.

Lastly, let me tell you that your complimentary invitation came to me just after those dark days of trial in which an ambitious, a cunning and an unscrupulous race had been endeavouring for ever to overwhelm us. Dark indeed were those days; but darker still would they have been had we not known that your strong-limbed and keen-eyed sons were standing by us in our time of need. It is certainly not for a humble individual like me to presume, or to attempt, to say what the feeling of undemonstrative England may be towards Canada: I allude to this and to other circumstances only that you may in some measure see with what pride I accepted your invitation, and in order that you may the more fully appreciate the sincerity of the thanks which I herewith tender you for thus directing my course to Ottawa, with an inclination Eastwards to Nova Scotia—and to Halifax—where, in 1812, my good father was born.

# An Address

ON

# THE PREVENTION AND TREATMENT OF POST-PARTUM HÆMORRHAGE.[1]

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GENTLEMEN,—Post-partum hæmorrhage may be defined as hæmorrhage occurring after the birth of the child and either before but usually after the delivery of the placenta. If it occurs within a period of 24 hours it is said to be primary, but for purposes of discussion we may say clinically that post-partum hæmorrhage occurs soon after delivery or, if later, before the usual period that the medical attendant leaves his patient believing her to be safe.

## AMOUNT OF BLOOD LOST.

It has been stated that as a result of careful estimates made in lying-in hospitals the average amount of blood lost in childbirth is one pound, but while this may be accurate scientifically, yet for practical purposes it would convey little information to tell a medical man engaged in private practice that when the blood lost at a confinement by one of his patients exceeded, say, from 16 to 20 ounces he was to regard it as a case of post-partum hæmorrhage. In practice we soon come to know that every patient is a rule to herself as to the amount of blood she loses during the birth of her child. Some lose more, others less, and it is probable that, as Dr. Giles has pointed out, there is a "physical temperament" characterised by copious pigmentation and the brunette complexion in which the tendency to hæmorrhage is greater, and among such the normal amount of loss at the time of labour would be above the average. A woman may be said to suffer from post-partum hæmorrhage when she has a sudden excessive loss of blood after childbirth or when a slighter amount continues to flow, and when at the same time there is either uterine inertia or traumatic lacerations of the parturient canal, the effect of the hæmorrhage being shown by her constitutional condition, as evidenced by her appearance (variations in pallor) and by her pulse (rapid, low tension and the intervals between the beats not well marked).

## PATHOLOGY.

In order that we may treat post-partum hæmorrhage it is necessary to know what are the usual pathological conditions present in cases of bleeding setting in immediately after delivery, and the causes may be grouped under two heads. A.—Hæmorrhage due to uterine atony, the bleeding in these cases arising from the uncompressed vessels in the placental area. B.—Wounds of any part of the parturient canal without any necessary inertia.

By far the most numerous cases fall into Group A; indeed, some would restrict the term "post-partum hæmorrhage" to cases of atony of the uterus, but for purposes of diagnosis and treatment I shall also have to speak of cases arising from traumatic lacerations. However, I ask your attention mainly to the first division:—

### A.—CASES OF HÆMORRHAGE AFTER DELIVERY WITH A RELAXED UNCONTRACTED UTERUS.

In the majority of labours post-partum hæmorrhage sets in without our having had any warning to put us on our guard against its occurrence, but in some cases our suspicions as to the possibility of our having to deal with such a serious complication may have been aroused beforehand. The following are the conditions which may lead the accoucheur to suspect the onset of post-partum hæmorrhage.

I. *History.*—(1) Hæmorrhage at a previous confinement; (2) rapidly succeeding pregnancies, especially met with amongst the poor, time not being given for the uterine muscle to assume its normal condition; (3) a combination of want of exercise and the taking of too much food and stimulants, as seen among the better classes; (4) elderly primiparæ; and (5) patients with pre-existing metritis.

II. *During pregnancy.*—(1) Over-distension of the uterus (twins, hydramnios, &c.); (2) presence of a tumour in the uterus (myoma) preventing uterine contraction; (3) albuminuria; (4) extreme mental depression seen often in cases following the death of the husband; and (5) excited vascular system, especially towards the end of pregnancy.

III. *During delivery.*—1. The character of the pains in the second stage of labour. "The pains are of this kind—they are strong and quick; they do not gradually culminate into a strong pain and subside again, but they are sharp, quick, and cease almost suddenly, and the intervals between the pains are long in proportion to the length of the pains."[2] 2. A pulse keeping rapid towards the end of delivery, with low tension and of a jerking nature. This state of pulse is quite different from that met with in nervous women at confinement or in those who have taken chloroform. In both of these conditions the pulse may also be quick, but there is a distinct interval between the beats and there is evident vascular tension.

By some it is thought the administration of chloroform during a confinement predisposes to the occurrence of post-partum hæmorrhage. At the Nottingham meeting of the British Medical Association in July, 1892, I read a paper entitled, "Does Chloroform Promote Post-partum Hæmorrhage?" in which I endeavoured to show that this anæsthetic has no effect in causing post-partum hæmorrhage provided that in all cases care is taken not to effect delivery too rapidly and also to manage the third stage of labour according to modern teaching. Subsequent experience has confirmed me in the view I have stated, but I need hardly

[1] Introductory Address to a discussion on "The Prevention and Treatment of Post-Partum Hæmorrhage" in the Section of Obstetrics and Gynæcology, British Medical Association, Ipswich, August 3rd, 1900. An abstract of this address and of the debate which followed upon it have appeared in THE LANCET (August 25th, 1900, p. 606 et seq.), but the importance of the subject warrants a fuller publication.

[2] Whittle: Brit. Med. Jour., Sept. 27th, 1873.

say that in all cases in which in obstetric practice chloroform is given to the surgical degree a competent person should be asked to administer the anæsthetic.

### PROPHYLAXIS OF POST-PARTUM HÆMORRHAGE.

There is no complication met with in obstetric practice of which it can be more truly said that its treatment is its prevention, and the best proof of this aphorism can be found in the circumstance that while students and medical men in the early years of practice dread the condition, as they get more experience they become less fearful of it and really meet it less frequently. I propose to speak first of the prophylactic measures to be used to prevent its occurrence in every case, and subsequently to say something as to the measures to be adopted under those special conditions which I have mentioned as leading us to suspect its onset.

### PROPHYLAXIS TO BE ADOPTED IN ALL CASES.

The two measures which should be adopted in every case to prevent post-partum hæmorrhage are—(1) the proper management of the third stage of labour; and (2) the important principle never to deliver in the absence of pains.

1. *The management of the third stage of labour.*—Of no condition in obstetric practice may it be said with greater truthfulness that "meddlesome midwifery is bad" than of the management of the third stage of labour. This is due partly to the teaching of Credé, but still more to inaccurate knowledge as to what occurs in the uterus after the birth of the child. There are two factors in the third stage of labour—(*a*) the separation, and (*b*) the expulsion of the placenta with the membranes. Nature should be allowed to separate the placenta, and then if she is not equal to the second task the accoucheur can assist in helping her to expel the already separated placenta. The great mistake is an attempt made at once by the obstetrician to express the placenta from the upper or contractile part of the uterus—a line of practice liable to be followed by retention of membranes, post-partum hæmorrhage, and even septic poisoning—instead of waiting until certain signs indicate that nature has separated it. For the sake of clearness and because of its enormous importance as a preventive of hæmorrhage after delivery let me point out the best method of managing the third stage of labour.

As soon as the head of the child is born the left hand of the accoucheur is placed on the woman's abdomen over the fundus of the uterus, the ulnar edge of the hand looking towards the vertebral column. The child's eyes are wiped and a finger ascertains if the cord is round its neck. During the subsequent birth of the child the left hand of the accoucheur follows down the fundus. Immediately after the child is born the woman is turned on her back, the advantage of this most important step being twofold, as it enables the uterus to be easier and better controlled by the accoucheur's hand, while it prevents (especially in multiparæ) the entrance of germ-laden air through the relaxed vulva. As soon as pulsation has ceased the nurse ties the cord, one ligature being placed in the usual way near to the child's abdomen, the other close to the vulva of the mother (care being taken gently to draw down the cord so as to leave no loop in her vagina). The hand of the accoucheur never leaves the fundus (except in the case of a child born in white asphyxia, when the medical man must look after it and the nurse takes his place in controlling the fundus). No attempt should be made to massage or stimulate the uterus; all that is required is simply to control the uterus with the hand and to ascertain when the placenta has separated. This can easily be diagnosed by the following signs: 1. A sudden rising up of the uterus which may have previously been largely in the pelvis. 2. A swelling detected above the pubes due to a bulging forward of the lower uterine segment. It is very much in the position of a distended bladder and is sometimes mistaken for it. 3. Greater mobility of the uterus. 4. Expulsion of a few more inches of the cord as shown by the fact that the ligature placed at first close to the patient's vulva has now advanced from that position a few inches.

The separation of the placenta, as indicated by these signs, takes place in about from 20 to 30 minutes. When once the placenta has separated and has left the upper active and contractile portion of the uterus then firm pressure is made by the hand of the accoucheur over the fundus during the height of a pain and the placenta is expelled out of the lower uterine segment and vagina; the nurse then takes charge of the after-birth, gradually turning it round and round to get the membranes thoroughly away. The hand of the accoucheur still controls the uterus, and while he is doing this the nurse floats the placenta and membranes in a basin of water so that he can see if there is any lobule of placenta left behind or if there is a piece of chorion wanting, indicating the presence of a placenta succenturiata. Supposing the examination of the placenta and membranes shows there is nothing left behind, the nurse bathes the patient's vulva with a mercurial lotion (all blood, &c., being removed), applies a pad wrung out in antiseptic lotion, and the binder is put on, but the accoucheur never lets go control of the uterus until this is completed. In this way the uterus is left in a state of permanent retraction.

2. The other important measure as a prevention of post-partum hæmorrhage is not to deliver in the absence of pains. As examples of the abuse of this principle I may cite such a condition as "secondary uterine inertia" where a labour comes to a standstill. The pains cease and the woman and her friends (Smellie's "Gossips") urge the medical man to deliver her. It may be she is well on in the second stage, but her pulse is quiet and her uterus on abdominal examination is relaxed and there is no rise of temperature. The medical man yields, tired it may be after sitting up all night and anxious to visit other patients; he easily slips on the forceps and delivers, but later severe hæmorrhage sets in, the uterus not having contracted, and the woman is in imminent peril. Here the proper line of action should be to give a dose of opium; the woman will then fall asleep and after a time pains will come on again and she will probably deliver herself without any assistance.

Another example of the terrible mistake of delivering in the absence of pains is afforded by the way cases of placenta prævia are sometimes managed. It is well known that one of the best methods of treating placenta prævia is by bimanual version, a foot being brought down so as to dilate and plug the lower part of the uterus with the child's leg and thigh. Too often it is forgotten that time must be allowed for uterine pains to come on and deliver the child after it has been turned; the delivery is hurried after the child has been turned, and, as a result, hæmorrhage occurs from an atonic uterus, while the forced delivery, by tearing the tissues of the lower part of the uterus (which, owing to the implantation of the vascular placenta, are as soft as blotting-paper), causes also a bleeding due to traumatic laceration of the parts.

### PROPHYLAXIS TO BE ADOPTED IN SUSPECTED CASES OF POST-PARTUM HÆMORRHAGE.

When from the symptoms I have mentioned we suspect the occurrence of hæmorrhage after delivery the following precautionary measures should be adopted:—1. During pregnancy the patient should be advised to take exercise and keep her skin (baths) and bowels (purgatives) acting. She should avoid all stimulants of any kind and if there is albuminuria a milk diet should be enforced. 2. During confinement the fœtus should be delivered slowly, its birth being followed down by the hand on the fundus, and it is good practice (provided the head or breech presents) to puncture the membranes when the os is nearly fully dilated. By this measure the pains are increased in energy and it also favours tonic contraction of the uterus after expulsion of its contents. Further, from the very onset of labour the patient should be kept lying, and as soon as the os is fully dilated I have found the practice recommended by the late Dr. McClintock of giving two teaspoonfuls of liquid extract of ergot most useful.

In cases where I suspected the occurrence of post-partum hæmorrhage I have prescribed for a couple of weeks before delivery 10 grains of chloride of calcium thrice daily. This practice gave good results, but whether the medicine or the careful management of the third stage of labour deserves the credit it is, of course, difficult to say. Dr. Lombe Atthill of Dublin in cases where from the experience of previous labours he anticipated post-partum hæmorrhage or where in the progress of tedious labours the uterus became exhausted, so that he suspected hæmorrhage after delivery, gave in the former case for three weeks before the expected labour a mixture of liquor strychniæ with infusion of ergot, adding iron if the patient was anæmic and hydrochloric acid if she was plethoric. He gave this mixture for from seven to ten days; then, after ceasing its administration for 48 hours, he let the patient continue to take it. The mixtures are as follows: liquid extract of ergot, two drachms; solution of

strychniæ, one drachm; diluted hydrochloric acid, two drachms; infusion of ergot to six ounces, a measured tablespoonful to be taken thrice daily. In anæmic women the hydrochloric acid was replaced by one drachm of iron and ammonium citrate. In the latter case (exhausted uterus in a tedious labour) he recommends a dose of ergot with 10 drops of liquor strychniæ in the first dose and five drops in the next, if necessary. Endometritis in a married woman at the child-bearing age should be carefully treated.

### TREATMENT OF POST-PARTUM HÆMORRHAGE.

As there is hardly any complication met with in midwifery needing greater pluck and more resourceful and prompt action on the part of the attendant it is good practice in all confinement cases to see, as the second stage of labour is advancing, that everything is conveniently ready, such as hot water, the douche, with double-current intra-uterine tube (Bozeman's or Budin's), &c. The accoucheur, fortified in this way, acts with much greater self-reliance should hæmorrhage suddenly set in Supposing the placenta and membranes have all come away and that then suddenly bleeding sets in with a relaxed inert uterus, what should be our line of practice?

1. I think the first measure to be adopted is external uterine massage. By this means the uterus is stimulated to contraction, clots are expelled, and often this method is sufficient of itself to arrest the hæmorrhage.

2. Should this plan fail then I recommend the use of hot water. A double-current instrument (Budin's or Bozeman's) should be employed, and it is a great advantage at the same time to draw down the uterus by catching the anterior lip of the cervix with a vulsellum forceps. Certain precautions in the use of hot water are necessary. 1. Temperature. In maternities a bath thermometer is of use as indicating the proper temperature (118° F.) to be used, but in private practice the best rule is to use the water at that temperature which the hand immersed in it will bear. 2. Amount. The hot water should be used in large quantities. 3. The intra-uterine tube should be passed up to the fundus so that the whole inner surface of the cavity is bathed. 4. Antiseptic. Some use a little creolin in the hot water. I prefer salt—a teaspoonful to the pint. Never use any corrosive in the hot water, the objection to it being that, owing to the open state of the uterine vessels, absorption takes place rapidly with the risk (I have seen its occurrence) of mercurialism. Cold water should not be employed. It is not sterile and its low temperature has a prejudicial effect on the anæmia, while the hot water is distinctly stimulating.

3. The introduction of the hand into the uterus. As there is no operation I believe so dangerous to a parturient woman as the introduction of the hand of her attendant (owing to the admitted difficulty of rendering it aseptic) into the uterus, this practice should only be done when the indications are clear. If hæmorrhage sets in before the placenta comes away and if, owing to adhesions, external abdominal massage fails to expel it, then the hand must be introduced to separate and withdraw the placenta. Again, if a lobule of placenta or a piece of outlying after-birth is retained (I have mentioned the signs indicating both of these conditions) the hand should be introduced to remove the retained parts which prevent by their presence the uterus contracting on its open vessels. After the hand has been withdrawn the uterus should be carefully douched with a hot creolin lotion. In the absence of the clear indications I have mentioned the use of the hand inside the uterus is, I believe, bad practice. No doubt it stimulates the uterus to contract, but hot water will do this equally well, and there is not the same risk of septic poisoning as when the hand is introduced.

4. Should the preceding measures have failed then we may try bimanual compression, but my own experience of it is that it is very fatiguing to the accoucheur and trying to the patient; and I prefer—

5. Gauze plugging of the uterus. A word about its technique. You may, as the text-books teach, need three lengths of four or five yards, each from three to four inches broad, but I have been struck with the fact that when the uterus is drawn down with the vulsellum in many cases very much less of the gauze is needed. The plan I can recommend from personal experience is to carry in your obstetric bag one of Dührssen's sealed tins of sterilised iodoform gauze. This tin takes up little room, it can be opened quickly (as a tin of Brand's essence), and it contains sufficient gauze to plug the uterine cavity. I get it through Fannin, the instrument maker in Belfast, from Berlin. Great care should be taken to plug the uterus tightly up to the fundus. The hold given by the vulsellum forceps allows sufficient counter pressure when you are packing the cavity of the uterus. The gauze acts by stimulating the uterine muscle to contract, but also by insinuating itself into the mouths of the bleeding vessels and so directly compressing them.

6. Drawing downwards the uterus. Should we meet a case where, notwithstanding the gauze packing, hæmorrhage continues I think we should first (on the assumption that our previous technique has been at fault) remove the gauze, wash out the uterine cavity with a creolin douche, and re-apply—packing very firmly—the gauze. If notwithstanding the hæmorrhage again returns I would strongly recommend the firm drawing down as far as possible of the uterus with tenaculum forceps passed through the lips of the cervix. This method acts, I think, by kinking and compressing the uterine arteries, as is seen often in the operation of vaginal hysterectomy. In such circumstances Professor Schauta of Vienna thinks atheromatous vessels are present in the placental area. He advises laparotomy in hospital practice, or in private practice eversion of the uterus into the vagina by pressure on the fundus, so that the bleeding vessels may be caught, or an indiarubber ring (as recommended by Kocks) or a gauze bandage may be fastened round the everted uterus so as to cut off the circulation. The compression should not be maintained for more than six hours to avoid gangrene, and Professor Schauta prefers that the vessels should be caught directly rather than that pressure should be applied to the whole uterus. When the bleeding is stopped the uterus is to be re-inverted. I have no personal experience of this method: I simply mention it on the authority of the distinguished Viennese obstetrician.

7. Injection of iron. I have not used the injection of perchloride of iron solution for the past five years. It is a remedy not without danger; it causes a certain amount of superficial injury of the uterine wall, which forms a suitable nidus for the growth of germs; and if it fails plugging cannot be done owing to the effect that the iron has on the tissues. I have been told that gauze plugging has replaced the use of iron in bad cases of post-partum hæmorrhage in the Rotunda Maternity Hospital.

The treatment which I have mentioned applies to cases of uterine inertia giving rise to hæmorrhage after the delivery of the placenta. Should bleeding set in before the after-birth is delivered pressure should be at once used to bring it away, and if this fails the hand should be introduced to separate and withdraw the placenta. Should a portion of the placenta remain or a piece of membrane, or should there be the suspicion of a uterine tumour, the hand must also be introduced for diagnosis and treatment. In all such cases the uterus should afterwards be most carefully douched out with a hot creolin lotion.

### B.—POST-PARTUM HÆMORRHAGE FROM WOUNDS OF ANY PART OF THE PARTURIENT CANAL.

This division includes the class of cases described by the older obstetricians as post-partum hæmorrhage with a contracted uterus. The wounds or lacerations may occur in the perineum, the crura of the clitoris, or the vessels of the bulb, the vagina (of greatest importance when the wounds are at the upper and posterior part often involving the large vessels of the cervix), the cervix, or the uterus itself.

A word or two about the diagnosis of the source of the bleeding in these cases.

1. *The history.*—It is after forceps or unaided labours that vulvar or vaginal wounds are most apt to occur, while lacerations of the cervix are more usually met with in breech and turning cases.

2. *Examination.*—The best time to distinguish between atony of the uterus and a wound of the parturient canal as a source of bleeding is when, by massage, you have made the uterus to contract. If the hæmorrhage is from uterine inertia the blood is suddenly driven out of the uterus, but in lacerations there is a continuous oozing, the uterus remaining contracted. If the uterus is washed out by means of a double-channelled tube the return fluid is clear if there is no uterine inertia, while if there are lacerations blood is still seen to flow at the sides of the tube from vagina or vulva. If blood comes from a wound of the vulva ocular inspection will demonstrate its source and its florid

colour; if with a contracted uterus there is no wound of the external parts, then a careful examination of vagina and cervix will show where the wound is in cases of hæmorrhage.

### TREATMENT OF LACERATIONS.

The perineum if torn should be stitched up. Hæmorrhage from a wound of the vascular anterior part of the vulva (often produced by one of the blades of the forceps) may be stopped by a gauze pad and pressure or a suture may be passed by a curved needle. Wounds of the vagina must be stitched, and if the cervix is lacerated it can be drawn down and sutured, or a gauze plug may be applied.

A very rare cause of post-partum hæmorrhage is a wound of the uterus, or it may be due to a previously existing intra-uterine tumour which has been injured and torn during labour. Here diagnosis and treatment follow upon a careful digital exploration of the uterus. If possible the tumour should be removed and a gauze plug applied. In the rare cases of hæmorrhage due to a tear of the uterus gauze plugging should be used.

### THE AFTER-TREATMENT OF POST-PARTUM HÆMORRHAGE.

When the hæmorrhage has ceased the subsequent anæmia demands most careful treatment. The patient should be kept quiet, her head low, the lower part of the bed being raised to facilitate the weak circulation. Subcutaneous injections of ether and strychnine are most useful, but our sheet anchor is saline transfusion, experiments having shown that in animals bled almost to death they will recover if a normal saline solution is introduced into the circulation. If the heart gets something to act on it can be kept going until the natural vascular fluids have time to form again. The saline solution (one teaspoonful of salt in a pint of warm sterilised water) may be introduced direct into the veins; this is the best method, but it takes time and often cannot be done without skilled assistance. On the other hand, the solution may be given by enema or, which is I think better, into the tissues by means of a large hollow needle and funnel which are connected by tubing (the instrument makers now provide the apparatus). Half a pint may be injected into the tissue under each breast. The amount of saline fluid to be used or re-used depends on the patient's condition—two, four, or six pints. It should be injected slowly at a temperature of 98° F. and we should continue it until the pulse gets slower and increases in volume. In addition to these measures in the treatment of the anæmia the patient should be encouraged to take nourishment (such as concentrated meat juices, milk, &c) which is quickly absorbed.

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# THE CHEMICAL EXAMINATION OF GASTRIC CONTENTS.

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DURING the last 20 years no branch of medical science except bacteriology has received the attention of so many observers as the chemical examination of gastric contents. Two causes may be assigned for the rapid advances made in this period. The first, and perhaps the more important, is the introduction of the use of the stomach-tube, an instrument which enables us to study the various processes of digestion at its different stages. Previously to the adoption of this tube all we knew about digestion was obtained from observations made upon cases of gastric fistulæ and of vomiting. We can thus understand why our knowledge on this point was so small. The second cause results from the researches of the great French philosopher, Berthelot, who was the first to place the chemical analysis of stomach contents upon a firm scientific basis.

The processes of digestion are very often examined after giving test meals and the stomach contents are drawn off at different moments after the meal. When making a series of systematic analyses it is best to adopt a definite routine in this procedure. All kinds of meals have been suggested by different physicians and the greatest extremes have been adopted. Some have found that 10 ounces of dry bread and half a pint of water have served every purpose they wished, while others have prepared a menu of six courses probably with a view of overcoming the instinctive prejudice which a patient shows to having his stomach interfered with in so unpleasant a manner. The simpler the meal, however, the better, and in the cases considered in this paper the test meal consisted of eight ounces of bread cut in thick slices and covered with a little butter, together with half a pint of weak tea containing sugar but no milk. Two hours later the stomach contents were drawn off.

In a particular case it is always as well to consider whether anything will be gained by giving the patient the test meal and drawing it off from the stomach. In a case of long-standing dilatation of the stomach due to carcinoma pylori there is always a great deal of residual fluid which has fermented, so that it would be futile to give a test meal with the hope of learning anything about the digestive processes going on. If we are desirous of making investigations on this point the stomach must be washed out until the washings are clear and sweet. Then the test meal may be given to advantage.

There is a practical point worth mentioning with regard to drawing off the gastric contents. In some instances after the test meal has been given it may be impossible to draw off anything whatsoever. Sometimes kneading the abdominal wall over the stomach region or getting the patient to cough will cause ejection of the stomach contents through the tube, but when these methods are without avail just sufficient water should be poured down the tube to convert it into a syphon. This quantity of water should be measured, and in making a quantitative estimation of the constituents of the specimen a corresponding correction should be made.

The gastric contents, when obtained, will probably contain a certain amount of solid material which has great avidity for the acids present. If we were to filter straight away some loss of acid would be entailed, but this is avoided by shaking up the gastric contents in a stoppered bottle until the solids are broken into small pieces. The material is then filtered with a corrugated funnel and an analysis of the filtrate made.

### THE ANALYSIS OF THE FILTRATE.

An alkaline reaction is only found when the patient has been taking alkaline drugs or when a pancreatic fistula is opening into the stomach. An acid reaction may be due to free hydrochloric acid alone or to organic acids—lactic, acetic, butyric, or, rarely, to the presence of acid salts; but the commonest cause of all is hydrochloric acid in combination with proteids. I would lay special stress upon the last-named cause as it is a point overlooked in many of the standard works on the subject and also by a great number of investigators. In all I have examined 200 specimens of gastric contents, but have found absolutely free hydrochloric acid on one occasion only. This was a specimen from the

Clinical Research Association which Dr. F. G. Hopkins asked me to examine. Dr. Hopkins has found free hydrochloric acid several times in specimens sent to him for analysis. Free hydrochloric acid and free lactic acid are never present together.

The presence of free acids and hydrochlor-proteids can be shown in two ways. (*a*) By means of Congo red. A piece of filter paper is dipped into a saturated aqueous solution of Congo red and allowed to dry. This changes from red to blue when brought in contact with free hydrochloric acid, free organic acids, hydrochlor-proteids, or any combination of them. (*b*) By means of benzo-purpurin. The test is applied in a similar way to the previous one, but the colour changes from purple to black under the same conditions as above. Now the free acids which may be present are hydrochloric acid, lactic acid, acetic acid, and butyric acid, and of these the two latter are volatile.

*Distinguishing tests for free hydrochloric acid.*—Many tests have been proposed from time to time for the detection of free hydrochloric acid. A great many are very delicate when applied to aqueous solutions of hydrochloric acid but are untrustworthy when used for the purpose of detecting the acid in stomach contents. Without exception, they are based upon colour reaction. The test which I have always applied and which I believe to be the most elegant as well as the most reliable was first introduced by Gunzberg. A test solution is made up as follows: phloroglucin, two grammes; vanillin, one gramme; absolute alcohol, 30 cubic centimetres. This reagent when not in use should be kept in the dark, as otherwise changes may take place which will render the test inaccurate. To perform the test a couple of centimetres of the stomach contents are placed in a porcelain dish, and two or three drops of Gunzberg's solution are added. We now evaporate slowly on a water bath (not to dryness), and should free hydrochloric acid be present a characteristic rose-red ring appears around the dish just above the level of the liquid which is due to the production of red crystals. There can be no mistake about the colour when it is obtained.

Another test to which I call attention is known as the tropaolin test. A solution of tropaolin 00 in alcohol and water is used for this purpose. When the solution is concentrated it possesses a reddish-yellow colour which, when in contact with mineral acids, changes to a characteristic reddish-pink. This test is not always reliable. Its accuracy depends upon the quality of the tropaolin from which the solution is prepared. This substance varies a great deal according to the chemist from whom it is obtained, and even the same chemist often fails to make a substance which possesses identically the same properties each time.

*Hydrochlor-proteids.*—I have already stated that only one specimen of gastric contents which I have analysed contained free hydrochloric acid, but it must not be inferred from this that the acid has not been secreted by the gastric epithelium. Hydrochlor-proteids were present in every case, and it is to this point I wish to draw special attention. We desire to know whether the acid is being secreted or not, and if the former be the case in what quantity. Considering the amount of proteid material present in the food we cannot wonder that free acid is most often not found. As soon as the acid is secreted it unites with the proteid to form hydrochlor-proteids. These bodies will react to the litmus, Congo red, and benzo-purpurin tests, and with an aqueous solution of silver nitrate they will give a white flocculent precipitate which is soluble in ammonia solution. They can be titrated by means of standard alkalies, but the constituent hydrochloric acid cannot be detected by means of Gunzberg's test. We thus see that the hydrochloric acid of the stomach contents may be either free or in combination with proteids. The mere fact of its absence, as determined by Gunzberg's test, should be no source of alarm. It is only when we fail to find acid proteids that we know that hydrochloric acid is not being secreted. Speaking generally we may say that gastric juice does not contain free hydrochloric acid in the true chemical sense of the term. We have proof of this in the experiment of Bernard, who shewed that a very weak solution of hydrochloric acid would dissolve oxalate of lime but that gastric juice possessed no such property. Again, Blondlot proved that gastric juice does not decompose calcium carbonate, while the most dilute solution of free hydrochloric acid decomposes this body at once. Berthelot[1] inferred from his experiments that the hydrochloric acid of the gastric juice behaves as if it were united with a feeble organic base, such as leucin or peptone, and not as if it were in a free state. Now the process of digestion can go on without the presence of free hydrochloric acid. This can be shown by the following experiment which I have devised. A fairly concentrated aqueous solution of egg albumen is taken and a known quantity of a standard solution of hydrochloric acid is added to the extent of 0·25 gramme per 100 cubic centimetres. If the egg albumen be in sufficient quantity this solution will not give the characteristic colouration with Gunzberg's reagent, showing the absence of free hydrochloric acid, and yet, on the addition of pepsin, peptone is formed after the product has been kept at a constant temperature of 37° C. for five or six hours. Should the solution of egg albumen be very weak, on adding the same amount of hydrochloric acid and applying Gunzberg's test we might have an indication of the presence of free acid. For this test to give a positive result the hydrochloric acid must be more than sufficient to combine with all the proteids present, and this applies to albumoses and peptones just in the same way as to albumens. But time is an important factor in the artificial production of acid proteids. Were some two or three hours allowed to elapse before applying the test we might find that all the acid had gone into combination with the proteids and that although immediately after its addition the hydrochloric acid was more than sufficient to combine with the proteids yet after the lapse of this period of time the above combination had taken place.

*Test for lactic acid.*—For this purpose a solution is made up which is known as Uffelmann's reagent. It consists of 10 cubic centimetres of a 5 per cent. carbolic acid solution and 20 cubic centimentres of distilled water. To this is added one or two drops of solution of perchloride of iron and an amethyst blue colouration is obtained. The solution should be prepared fresh each time as it does not keep. In the presence of lactic acid the blue colouration is changed to yellow; in that of acetic acid to a brownish tint. Hydrochloric acid has no effect on this reagent. The brownish colouration due to acetic acid is not at all reliable and may not be obtained even when the acid is in large quantities. There are no good qualitative tests for acetic and butyric acids in the stomach contents.

## QUANTITATIVE ANALYSIS OF GASTRIC CONTENTS.

The object of a quantitative analysis is to determine in the first place the amount of hydrochloric acid present, either free or combined with proteids, and in the second place the amount of organic acids, which will indicate whether fermentative changes are taking place in the organ or not.

We should first estimate the total acidity of the filtrate from the stomach contents. 20 cubic centimetres are a convenient quantity to use for titration. If it be colourless or pale yellow, as it often is, there is no need for dilution, but should the filtrate be of a dark colour it will be necessary to add water until the tint has almost disappeared. A saturated alcoholic solution of phenol-phthalein is the best indicator to use, and two or three drops are ample for any titration. The advantages of phenol-phthalein over litmus are that the colour-change at the critical point is so definite as to be easily appreciated even by the uneducated eye and, secondly, that the operation can be carried out in the cold, and boiling is not, as in the case of litmus, necessary to ensure an accurate result. A decinormal solution of sodium hydrate is the alkali against which the acid is titrated. The result is best expressed in terms of hydrochloric acid. For instance, suppose 10 cubic centimetres of decinormal solution of sodium hydrate be required to neutralise 20 cubic centimetres of the gastric contents (1 cubic centimetre of decinormal sodium hydrate solution being equivalent to 0·00365 gramme of hydrochloric acid) the total acidity of 20 cubic centimetres of gastric contents is equivalent to 0·0365 gramme of hydrochloric acid, or the total acidity of 100 cubic centimetres of stomach contents to 0·182 gramme of hydrochloric acid. This is the most convenient way of expressing the acidity and it is the one generally adopted by investigators on the subject. It should be borne in mind that this is not to say that the acidity is 0·182 per cent.

The presence of free hydrochloric acid not being necessary for the digestive processes our method of estimating this acid should be so chosen as to take account of that part of the acid which is physiologically effective—that is to say, the part which is combined with the proteids—albumens, albumoses, and peptones—found in the stomach contents. It is mainly due to the investigations of

[1] Annales de Chimie et de Physique, quatrième série, tome xxvi., p. 396.

Berthelot that we are enabled to separate the organic acids from free hydrochloric acid and hydrochlor-proteids and to estimate each in an accurate manner. Berthelot found that on shaking an aqueous solution of any organic acid with ether and allowing the two fluids to separate part of the acid passes into the ether, while the remainder clings to the water. The ratio between these two parts he proved to be a constant quantity—the co-efficient of partage—the value of which is a fixed characteristic for each particular acid. All organic acids behave in this way to a considerable though variable extent. Inorganic acids when agitated with ether are not thus affected.

It is generally believed that ether will not extract all the lactic acid found in the gastric contents, but by performing the estimation in the manner which I am about to describe a determination can be obtained which possesses sufficient accuracy to serve every clinical purpose. 20 cubic centimetres of filtered stomach contents are placed in a stoppered cylinder and 30 cubic centimetres of ether are added. The cylinder should then be shaken vigorously for 20 minutes. Then it should be placed away for several hours, or it may be left all night, after which the shaking process should be repeated for another 20 minutes. This mode of procedure is very efficacious in removing the lactic acid. In some experiments which I have performed I added a known quantity of a standard solution of lactic acid to some specimens of vomit, and after treating them in the manner indicated above the yield was never less than 90 per cent. of the acid which had been added. Similar results were also obtained when I added the lactic acid to hydrochlor-albumen which I had artificially prepared. Again, in many determinations which I have made I have extracted with ether four or five times, but if the above course were adopted for obtaining the first extract no trace of lactic acid could be found in the subsequent extracts.

The ethereal extract is drawn out of the cylinder by means of a pipette and placed in a porcelain dish along with a little distilled water. The ether is evaporated over a water bath and the lactic acid passes into the distilled water and can be titrated with a decinormal solution of sodium hydrate, phenol-phthalein being used as the indicator. This gives the amount of free lactic acid. What remains in the cylinder should be gently boiled for a few moments to drive off whatever acetic or butyric acid be present and then titrated in the same way. This will yield the total amount of physiologically-effective hydrochloric acid. Both these results are best expressed in terms of hydrochloric acid, so that an easy comparison may be made with this acid. If the sum of lactic and combined hydrochloric acids be the same as the total acidity we may assume that acetic and butyric acids are absent. A quantitative estimation of these two volatile acids can be obtained by distilling a known volume of gastric contents and titrating the distillate with a standard alkali.

### DIAGNOSTIC SIGNIFICANCE OF THE VARIATIONS OF HYDROCHLORIC AND LACTIC ACIDS.

I will first consider the case when the amount of physiologically-effective hydrochloric acid is normal—i.e., when about 0·22 gramme per 100 cubic centimetres are present and there is no lactic acid. This condition may indicate a normal state of affairs, or at least the absence of any serious structural lesion of the stomach. Such a result is of the greatest practical importance in cases of vague gastric symptoms which may accompany almost any internal disease. When all the symptoms point to the stomach the occurrence of normal acidity indicates nervous dyspepsia or some intestinal trouble. In chronic gastritis we find diminished secretion of hydrochloric acid, and since the subjective symptoms of this disease and nervous dyspepsia are very similar the examination of the stomach contents materially assists us in differentiating the one from the other. Naturally there is no hard-and-fast line. Lessened hydrochloric acid may occasionally occur in nervous dyspepsia, very rarely it may be absent, and the normal amount is not unfrequently found in atony of the stomach. When we find a constant diminution in the production of hydrochloric acid, with no evidence of any fermentative changes, as evinced by the presence of lactic acid, we may suspect chronic gastritis, but the same condition may occur in cases of gastric ulcer, atony or dilatation of the stomach, or sometimes in nervous dyspepsia. Patients suffering from incipient carcinoma may not secrete the normal amount of hydrochloric acid, but in these cases lactic acid may be found to be present.

An increase in the secretion of hydrochloric acid is found in a considerable number of patients suffering from gastric ulcer. In one case which I examined the amount of physiologically-effective hydrochloric acid was 0·6 gramme per 100 cubic centimetres of filtered stomach contents, and in a second case it reached as high as 0·58 gramme in 100 cubic centimetres of filtrate. Boas describes some cases where the acid was altogether absent, and says that this condition occurs sometimes in advanced chronic gastritis, gastric neuroses, and cancer. I believe that Boas refers to *free* hydrochloric acid, although in his paper no distinction is made between free acid and hydrochlor-proteids.

The conditions which favour the formation of lactic acid are stagnation of the gastric contents and absence of free hydrochloric acid. The lactic acid bacillus which is responsible for the formation of the acid is reported by many observers to be killed by free hydrochloric acid, although the contrary opinion is held by Ewald. Lactic

*Analyses of Gastric Contents in Cases of Carcinoma Pylori; the Results are Expressed in Grammes of Hydrochloric Acid per 100 Cubic Centimetres of Filtered Stomach Contents.*

| — | Total acidity. | Physiologically-effective hydrochloric acid. | Lactic acid. |
|---|---|---|---|
| *Case 1.* | | | |
| (*a*) Vomit... ... ... ... ... ... ... | 0·23 | 0·178 | 0·05 |
| (*b*) ,, ... ... ... ... ... ... | 0·23 | 0·152 | 0·08 |
| (*c*) Drawn off by a tube ... ... ... | 0·212 | 0·163 | 0·05 |
| (*d*) ,, ,, ... ... ... | 0·23 | 0·18 | 0·05 |
| (*e*) After test meal and washing out stomach daily for 10 previous days ... ... ... ... ... | 0·25 | 0·25 | — |
| *Case 2.* | | | |
| (*a*) After test meal ... ... ... ... | 0·281 | 0·228 | 0·05 |
| *Case 3.* | | | |
| (*a*) Vomit... ... ... ... ... ... ... | 0·09 | 0·09 | — |
| (*b*) Drawn off by a tube ... ... ... | 0·10 | 0·09 | — |
| (*c*) ,, ,, ... ... ... | 0·14 | 0·118 | 0·02 |
| (*d*) ,, ,, ... ... ... | 0·132 | 0·120 | 0·012 |
| *Case 4.* | | | |
| (*a*) After test meal ... ... ... ... | 0·202 | 0·136 | 0·06 |
| (*b*) Vomit ... ... ... ... ... ... | 0·176 | 0·172 | — |
| *Case 5.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·151 | 0·148 | 0·002 |
| (*b*) ,, ... ... ... ... ... ... | 0·143 | 0·142 | 0·001 |
| (*c*) ,, ... ... ... ... ... ... | 0·144 | 0·142 | 0·001 |
| *Case 6.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·29 | 0·165 | 0·12 |
| (*b*) ,, ... ... ... ... ... ... | 0·243 | 0·162 | 0·08 |
| (*c*) ,, ... ... ... ... ... ... | 0·251 | 0·168 | 0·082 |
| *Case 7.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·12 | 0·09 | 0·03 |
| (*b*) After washing out and test meal | 0·22 | 0·20 | 0·01 |
| *Case 8.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·142 | 0·10 | 0·041 |
| (*b*) Drawn off by a tube ... ... ... | 0·16 | 0·12 | 0·04 |
| (*c*) After washing out and test meal | 0·202 | 0·171 | 0·03 |
| *Case 9.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·205 | 0·16 | 0·04 |
| (*b*) Drawn off by a tube ... ... ... | 0·20 | 0·18 | 0·02 |
| (*c*) After washing out and test meal | 0·221 | 0·20 | 0·02 |
| *Case 10.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·105 | 0·051 | 0·053 |
| (*b*) ,, ... ... ... ... ... ... | 0·14 | 0·08 | 0·06 |
| (*c*) Drawn off by a tube ... ... ... | 0·14 | 0·09 | 0·045 |
| (*d*) After washing out and test meal | 0·17 | 0·13 | 0·04 |
| *Case 11.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·18 | 0·14 | 0·03 |
| (*b*) After washing out and test meal | 0·23 | 0·22 | — |
| *Case 12.* | | | |
| (*a*) Vomit ... ... ... ... ... ... | 0·12 | 0·06 | 0·05 |
| (*b*) ,, ... ... ... ... ... ... | 0·12 | 0·05 | 0·06 |
| (*c*) After washing out and test meal | 0·18 | 0·17 | 0·005 |

acid has been proved to be absent in innocent stomach affections, such as chronic gastritis, atony, &c., even in the faintest traces.

The absence of lactic acid does not absolutely exclude carcinoma, as it may be understood that the conditions favourable to the formation of this acid are not found in every case. Yet, in view of the statistics on the point, the absence of lactic acid is strong evidence against the existence of cancer. This should be borne in mind in a large class of doubtful cases of chronic gastritis where the constitutional symptoms—emaciation, the general appearance of the patient, and the diminished secretion of hydrochloric acid—lead us to suspect malignant disease.

The absence of free hydrochloric acid was demonstrated in all the above cases, but, as the table shows, physiologically-effective hydrochloric acid could be found without exception in all cases. This was a variable quantity and varied in the same patient from time to time. We also observe that when the stomach is washed out and a test meal given there is more physiologically-effective hydrochloric acid and less lactic acid than is found in vomit.

Lactic acid was present in all the cases on some occasion or other. The largest amount I have found is that quantity which is equivalent to 0·12 gramme of hydrochloric acid per 100 cubic centimetres. This was found in Case 6. In Case 1 and Case 11 it disappeared entirely after repeated washings and in all but Case 3 it was found in the stomach contents when the patient was admitted to the hospital. Six days after admission, however, in this case lactic acid was found to the extent of 0·02 gramme per 100 cubic centimetres. expressed as hydrochloric acid. There was no mistake about the diagnosis as the growth was removed by operation. Out of 21 cases examined by Boas lactic acid was present in 20 and Ewald found it in 22 out of 24 cases. Boas states that he did not find hydrochloric acid in any of his cases, from which I infer that he is referring to *free* acid.

In conclusion, something may be learnt by examining the vomit and stomach contents of patients suffering from diseases other than those of the stomach. In both anæmia and Bright's disease there is a deficiency of physiologically-effective hydrochloric acid. In heart disease there seems to be a difference of opinion, some believing that there is no change, while others hold that there is diminished secretion of hydrochloric acid. I have examined the stomach contents of 10 patients suffering from heart disease and have found that the amount of physiologically-effective hydrochloric acid was lessened in all of them. This is of importance from the point of view of treatment, for under these circumstances digestion can be artificially aided by the administration of suitable drugs.

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## A CASE OF TOTAL GASTRECTOMY.

BY DR. VIEIRA DE CARVALHO.

THE patient was a woman, aged 46 years, a native of São Paulo, Brazil, and was examined by me for the first time on March 25th, 1900. She was a weak, almost cachectic mulatto, who said that she had suffered from stomach trouble for years, these troubles becoming much worse during the last six months. Lately it had become impossible for her to get nourishment, since on swallowing anything she was seized with acute gastric pains, followed after some hours by vomiting of the food taken, mixed not infrequently with dark blood. Her condition becoming daily worse she resolved to enter the hospital.

She was extremely emaciated, weighing only 31 kilogrammes (68 lb.), but showed outwardly nothing else worthy of note. Palpation revealed the presence of a tumour of about the size of a turkey's egg in the epigastric region on the right side, close to the costal margin. This tumour was moveable, painless even under pressure, and did not seem to give the patient much trouble. Examination of the patient, the history of the case, and the gastric symptomatology convinced me that it was a case of malignant tumour of the pylorus, and I resolved to operate as soon as possible, my intention being to perform gastro-enterostomy. I therefore had the patient prepared for the purpose of operating on her the next day. The preparation consisted of general antiseptic bathing, covering the entire abdominal surface with moist salicylated cotton, ordering a free purge, and total abstention from food for 12 hours prior to the operation, keeping up the strength with alcoholic stimulants. I know that it is the practice of some eminent surgeons to wash out the stomach with antiseptics before operations on this organ. I am not in favour of this procedure, as it causes fatigue and prostration; a patient already weakened by frequent vomiting should not be harassed by the introduction of the Faucher tube. Moreover, I was sure that the stomach would contain no food at the time of the operation, as any that might have been taken would be rejected by the repeated vomiting. I also consider the antiseptic value of washing out a cancerous stomach to be purely theoretical.

Before the operation the patient had a weak, slow, but regular pulse, 60 to the minute; the respirations were 20. Everything being in readiness she was chloroformed by my colleague, Dr. Mattoso. I then made a median incision embracing the region between the xiphoid cartilage and the umbilicus. The abdominal cavity being opened I endeavoured to confirm the diagnosis and ascertain the exact site of the lesion. I saw that there was a malignant tumour of the pylorus, with slight adhesions to the neighbouring organs affecting the greater part of the lymphatics of the stomach. In view of this state of things I gave up the idea of a simple gastro-enterostomy and began to think of a total gastrectomy, in imitation of Professor Carl Schlatter.[1] Having resolved upon this procedure I began to isolate the tumour, cutting, away the omentum between ligatures, carefully uncovering the part of the duodenum not involved, breaking up an adhesion between the tumour, the duodenum, and the head of the pancreas. The adhesions were broken up at the cost of a slight laceration of the pancreatic gland causing a hæmorrhage which was controlled by ligat ng *en masse* with catgut. The tumour and the duodenum being freed I secured this part of the intestine with a Kocher clamp five centimetres below the limit of the neoplasm; a second clamp compressed the pylorus close to the tumour. As I separated the tumour from its adhesions and drew it out I isolated with antiseptic gauze the peritoneal cavity from contact with the diseased organ to be removed to avoid any accidental contamination. Between the two clamps I divided the duodenum through the sound tissues and with corrosive sublimate gauze I disinfected carefully the cut surfaces and the exposed mucous membrane of the intestine. This done, I gradually isolated the stomach from below upwards and from right to left, cutting the peritoneal folds between the clamps, extirpating at the same time the lymphatic ganglia involved, which were numerous. Having freed the stomach from its ligaments I made strong traction downward, bringing the cardiac end as low as possible, and close to the diaphragm I applied to it a Kocher clamp; a little below I placed a second clamp and between the two clamps I cut through the cardiac portion of the stomach. This part of the operation was very difficult, as the right lobe of the liver, very large in this patient, embarrassed my movements. In consequence of having been obliged to apply the clamp just as I did the section of the stomach was slightly oblique; later when the sutures were applied the diameters of the pylorus and the cardiac end of the stomach did not correspond. After careful disinfection of the cut surfaces and of the exposed mucous membranes I commenced the suturing. It was difficult to bring together the two extremities that were to be united. I made the suture with fine silk, in a double row, as advised by Hartmann[2] and Terrier—a process too well known to need describing here. The suturing being completed, the parts united and the whole neighbourhood were again disinfected with a solution of sublimate of moderate strength (1 in 1000). The isolating pieces of gauze were now removed as were also the clamps. On account of the powerful retraction of the œsophagus the recently joined parts were drawn immediately into the abdominal cavity. I then cleansed the peritoneum and closed the abdomen with triple sutures, one above the other. The operation lasted an hour and twenty minutes, leaving the patient in a state of profound shock, with the pulse almost imperceptible, the respiration superficial, and the skin covered with cold, clammy sweat. The means employed to restore her were successive injections of ether, caffeine, and strychnine, hot applications, and placing her in a position with

[1] For Professor Schlatter's full account of this case see THE LANCET, Jan. 15th (p. 141) and Nov. 19th. 1898 (p. 1314).

[2] See Dr. Hartmann's letter on p. 840 of this issue of THE LANCET.

the head lowered. As soon as the circulation began to improve I made an injection of one and a half litres of artificial serum. The effect of the serum was rapid and in a few hours the condition of the patient was encouraging. I ordered nutritive enemata every six hours. In the evening the condition of the patient was good. She was perfectly conscious; the respirations were normal, the extremities were warm, the skin was moist, the pulse was strong but very rapid (140 to the minute), and the temperature was 36·7° C. Small doses of alcohol (Todd's mixture) were ordered.

On March 28th the patient's general condition was good. Her pulse was strong, 140 per minute; the respirations were 20 per minute; and the temperature was 37·4°C. 400 grammes of normal urine were passed. Three nutritive enemata per day were prescribed, with small doses of milk. As the patient complained of intense thirst I ordered Vichy water *ad libitum* in small doses. On the 29th her general condition continued good. Her tongue was clean, her temperature was 37°C., her pulse was 120, and her respirations were 20 per minute. 900 grammes of normal urine were passed. Nutritive enemata were continued with small doses of milk and broth. The patient complained of hunger. Her tongue was clean. On the 30th her general condition was good, her tongue was clean, her temperature was 37° C., and her pulse was 120. 800 grammes of urine were passed. Nutritive enemata, milk, broths with somatose, Vichy water and alcohol were continued. On the 31st there was nothing new to be noted. Her temperature was 37° C. and her pulse was 120. 900 grammes of urine were passed. The patient continued to complain of hunger. On April 1st her general condition was good. Her tongue was clean, her pulse was 110, and her temperature was 37° C. 900 grammes of urine were passed. She had two copious movements of the bowels, the fæces being firm and yellowish, with a few coagula of milk, indicating good digestion. On the 2nd her general condition was good. The pulse was 120. 900 grammes of urine were passed and there was a small movement of the bowels. Her diet was continued as before. On the 3rd her general condition was excellent and there was nothing new to record. The dressings were now removed and it was found that primary union had taken place. The superficial sutures were then removed. Food was ordered to be given in small quantities every two hours. On the 4th all was still going on well. The patient had a ravenous appetite and begged for more solid food. She wished at any risk to eat a mixture of beans and flour. Examination of the removed stomach showed that the operation was reasonable, for besides a tumour ulcerated at the pyloric end and extending upward over the great curvature of the stomach there were numerous ganglia involved in sundry parts of the organ.

In giving this account of what I judge to be the first total gastrectomy done in Brazil I have no other than a strictly scientific end in view. I am of those who think there is no merit in being the first to repeat an operation, however rare. Surgical processes and difficulties do not vary with the latitude. At all events, I think it right and proper to record this new case in the interest of the bibliography of the subject. It raises to four the number of successful total gastrectomies, three being recorded in the masterly work of Hartmann and Terrier on the subject published at the end of 1899. Later, should my patient survive, I intend to present a detailed work on the case, for the absence of the stomach opens a wide field for the study of digestion. Who knows how much we may have to reform our knowledge of the subject, from the sensation of hunger to the digestion of meat; from the need of gastric hydrochloric acid to the function of the pancreatic juice?

São Paulo, Brazil.

## HYSTERICAL SOMNOLENCE AND STATES OF DOUBLE CONSCIOUSNESS.

BY ETHEL M. N. WILLIAMS, M.D. LOND., D.P.H. CAMB.

THE study of the abnormal phenomena of consciousness found in connexion with hysteria and allied states of mental enfeeblement throws, I think, much light on those states of double and multiple personality which are so mystifying at first sight. In these strange conditions the same individual seems to live at different stages of his existence under two or more different forms. He differs in character, in knowledge, and in powers. Often the person of one phase has no knowledge of the life and affairs of the others. He calls himself by another name, he repudiates acts which he performed, and he is ignorant of persons and of affairs with which in another state he was perfectly familiar. He is apparently, in all things except the outward form, another man. Suddenly it may be memory has been lost, all his old recollections have been for the time obliterated, while a new life, a new memory, a new ego have commenced for him. After the lapse of a longer or shorter time a kind of awakening takes place; he returns to his first "normal" condition while the intervening second state is apparently wiped out. The two lives may alternate without being confused through many years. Other states may be added to these, and as many as four or five may alternate with one another in this way.

It is easy to see how in a less scientific age a belief in the supernatural nature of such phenomena would be certain to arise. Persons subject to such alterations of personality were looked upon either as possessed by devils or as inspired by God. They were either burnt as witches or were honoured as oracles. In either case they were looked upon as possessing powers and knowledge not possessed by ordinary mortals. The different treatment depended usually upon whether their pronouncements were pleasant or the reverse to those in power.

These changes in personality are, we know, dependent upon, and caused by, changes in consciousness. Personality is built upon a highly developed consciousness with the idea of the ego superadded. This consciousness is made up of memory and character—character itself being largely built up from, and modified by, memory. It is the events of a man's past life—or rather the memory-images of those events—that have, at any rate to a large extent, made him the man he is. Delete any considerable part of the memory store of any man and you will have made him a different person, for you will have taken away the ideas and motives which coloured his life and directed his conduct. I am prudent, for I have learnt in the school of experience the results of imprudence; I am cheerful or depressed, courageous or cowardly, my courage or my cheerfulness being largely dependent upon my memory store.

These memory-images are of course not always on the surface of the field of present consciousness. In the deeper strata of the consciousness of each one of us there are hosts of old memory-images believed to be lost, for we cannot call them up at will into that surface of our minds which forms the field of present consciousness; yet they still live within the limits of our memory, though not within those limits of which our present consciousness is cognisant. In normal mental life the elements composing the field of consciousness are constantly changing, yet those changes are usually small—at any rate they are never of the nature of mental upheavals and never so sudden as to cause a change in the idea of the ego. Yet suppose that by some means the present level of our consciousness were suddenly broken up, so that the memory-images which compose it were submerged, while other memory-images forming representations which belonged to a past stage in our existence, when they supported possibly a vastly different personality, were to rise up and replace them. We must remember that the memory-images which present stimuli are awaking in our minds are not the only ones those stimuli might awake. Then, if the memory-images thus thrown upon the shores of our minds—the flotsam and jetsam of our mental shipwreck—formed a fairly complete picture of that mind at some past stage in its career, the personality reproduced would be that past self divested of all powers and thoughts, and therefore of all character built upon them, which have been acquired during the years which have intervened, and re-endowed with ideas and powers which have been lost through the lapse of time. For those ideas and powers were not really lost but merely buried and hidden.

This condition is, in my experience, a very fairly common one to meet in cases of hysteria and allied states of mental enfeeblement, though it is by no means always recognised. The clinical picture is often something of the following. The patient has complained constantly both of insomnia and also that she (for it is usually a woman) is always drowsy, never properly awake. It is quite noticeable that her field of consciousness is curiously contracted and incomplete. She sees and perceives all that is going on about her, yet abnormally few associated ideas are aroused. She knows her friends and in a limited way she recognises the

scenes among which she lives, but she does not know about them in the way she used to do. To recognise her most intimate friend is a mental effort, while most of the ideas which clustered round and made their intimacy have slipped away from her mind. At length she falls asleep, but the sleep is unrestful and broken by disturbing dreams. When she wakes it is under a new phase of personality. She is no longer the person who went to sleep, but one who existed perhaps years ago. She thinks and feels as she did in that past. She usually only knows the things and recognises the persons whom she then knew. (This last statement is not invariably true. I have more than once seen the patient recognise in a partial sort of way persons whom she did not know in the life she had gone back to live. It rarely, if ever, happens that the revival is quite pure and unmixed with elements belonging to other phases of consciousness.) Occasionally, too, elements reappear derived from books or from the experience of others which have incorporated themselves with her consciousness in the past. I think that in these cases the change of consciousness has always come about in the dream. The patient has begun to dream of her past life, and then on waking has waked into that consciousness of which she has dreamed. Sometimes the disintegration of the elements of consciousness is still more complete. The consciousness into which the patient wakes contains but a few even of the elements which it possessed in the past. Thus the personality is very incomplete, the consciousness more contracted than was ever the case in health.

This obliteration of a part of the field of consciousness is probably always present to a greater or less extent in the abnormalities of consciousness which we are discussing. All such conditions have their origin in a more or less complete state of amnesia. The normal unit of consciousness has been broken up. The self has been disintegrated. Much that went to build up the vessel has been for the time lost in the shipwreck, while parts of the structure which were overlaid and hidden in the perfect and completed vessel come now again to the surface.

A case of this kind where it is possible to trace the origin of the elements of the newly-assumed personality gives one the key to those more complicated cases—found mostly in the records of continental authors though seen occasionally among ourselves—where the assumed consciousness is of so complex a nature that it is at first sight difficult to see how it has been built up out of the disintegrated consciousness of the patient. Yet this difficulty only arises when we forget the innumerable memory-images which go to build up the mental self of each one of us and the immense number which are ordinarily submerged or inhibited by the comparatively few which form the basis of our present consciousness.

It is easier from this point of view to understand those cases in which a person in an abnormal state of consciousness exhibits powers or knowledge which he did not consciously possess while in his normal condition. We have all possessed knowledge in the past which we can no longer call up at will. In the mental shipwreck it is just these forgotten fragments which get tossed up to the surface. Again, certain of our powers are, in the course of normal life, held in check by other more special powers or by knowledge more recently acquired. Children's muscular combinations are not inhibited by the knowledge of possible results or overlaid by other more special or more recently acquired combinations, so we are often astonished by the ease with which they learn to dive, swim, ride a bicycle, walk a tight rope, &c. This is also doubtless the explanation of the marvellous physical feats occasionally performed by somnambulists. The abyss below the precipice does not exist for them for they have no mental picture of it.

Exactly the same thing applies to mental powers. The phenomena of dream memory may be noticed in this relation. The dream state is a state of partial consciousness, and by reason of the absence of some elements of the normal self certain of the remaining ones may stand out with unusual prominence. It occasionally happens that in a dream we recollect a matter which in our waking moments has evaded our utmost efforts to recall it. Sometimes a piece of information which the dreamer in his waking moments has forgotten that he has ever possessed but which is now of the greatest importance to him drifts up to the surface of the dream consciousness. He wakes possessing information which so far as he can tell has come to him for the first time in his sleep. It is small wonder if in a less critical age such occurrences have been attributed to supernatural intervention.

This explanation, however, does not cover all cases of additional powers and knowledge exhibited by the subjects of these abnormalities of consciousness. Such persons occasionally exhibit powers which they have never at any stage of their existence consciously possessed. A servant girl was in the habit while in a state of abnormal consciousness of reciting long passages from Greek and Hebrew authors which she had heard her master read but of which in her normal state she could not repeat a word. A girl who in her normal state could play but little on the piano, while in a state of abnormal consciousness played brilliantly and without her notes a long and difficult passage which in her normal state she could not play at all without her notes and only very imperfectly with them. Such cases as these are not a mere revival of powers which the subject possessed in the past. The power has never been possessed by the normal, or what I will call the principal, personality. By the side of this principal personality there have existed the elements of another consciousness, submerged beneath the normal conscious self. But now there has been a partial break-up of the normal self which has allowed the rising to the surface of this secondary self with its powers and its knowledge whose existence has been absolutely unsuspected by the principal personality. So we get an alternation of personalities, the principal normal self and the secondary self each with their own capacities. Powers possessed by the one state and knowledge acquired by it are very often not at the service of the other self and are not even suspected by it. The same thing occurs to a limited extent in the phenomena of distracted attention even in healthy persons and still more markedly in hysterical and hypnotic conditions. The secondary consciousness may see, hear, feel, and even say and do things that are not participated in by the principal consciousness which is engaged elsewhere. Automatic writing as seen in hysterical and hypnotic subjects belongs to the same class of phenomena. In these cases the anæsthetic right hand will, if a pen be put into it and the hand be screened from the patient's sight, write answers to questions though owing to the anæsthesia the subject is quite unconscious that the hand is even holding a pen and much more what it is writing. A secondary personality, which under normal circumstances is subconscious, may be said to speak through the anæsthetic limb. This secondary personality is usually completely overshadowed by the principal personality and it is by this means alone that unity and clearness of thought can be obtained. In certain abnormal states, as hysterical and hypnotic states, states produced by auto-suggestion such as are seen in the trances of mediums, the principal personality is dethroned and with it goes intellectual unity, while instead we get a usually highly contracted field of consciousness with, it may be, certain powers curiously augmented.

To maintain the existence of this usually subconscious personality we do not need to call any supernatural ideas to our aid. We merely want to grasp the fact that our mental self is made up of innumerable elements, and that only a very small proportion of these are contained in the field of our normal consciousness. The great majority, like the stones which form some great building, are normally hidden from view, concealed and overlaid in the walls and foundations. So it is with the structure which is the normal self of each one of us. Yet those same stones might form either a totally different building or a heap of ruins. The consciousness of the hysteric is like a building whose walls are in a state of unstable equilibrium, always threatening to collapse, and when this does happen the elements immediately pile themselves together into a different form.

The study of hysteria and allied states brings us to the conclusion that the key to the understanding of the whole situation is the recognition of the state of partial amnesia. The anæsthesias, the paralyses, the losses and perversions of special senses can be understood only as temporary blanks in the normal consciousness, as temporary fallings away of stones from the walls of the building. It must be remembered that we have evidence that the anæsthetic limb does feel, the blind eye does see, the deaf ear hears, but the results of that seeing and hearing do not form part of the principal normal consciousness. The emotional and moral changes of the hysteric, are, I think, to be understood in the same way. The motives and ideas which in the normal state directed conduct are swallowed up in the break up of consciousness. Other motives are uncovered—usually less complicated, less disciplined, and more

coloured by the sense of self. The exact nature of the mental and emotional changes will depend upon the character of the new consciousness, and it is, I think, a grave mistake to let the diagnosis depend upon the exact nature of these changes and so to cut off cases of hysteria where the moral change is of a certain nature from closely allied cases where the moral change is a different one. So we might trace out all the features of the hysteric. It is a state of deprivation, of loss of powers, ideas, guiding principles, even though occasionally some one power or idea towers up out of all proportion to its development in the normal personality.

The phenomena of sleep and dreaming and of the hypnagogic or half-awakened state furnish us with examples of the genesis of double consciousness in the healthy life. Sleep is the resting time of consciousness. The lower centres are active, but those particular combinations of higher centres with which consciousness is conjoined are quiescent. In quiet dreamless sleep this rest of consciousness is complete and I believe sleep to be always dreamless in states of perfect health—of physical and mental equilibrium. Often, however, some slight irritant, either internal as a stimulus from stomach or intestine, or external as a noise, a light, or an unaccustomed position, breaks up this perfect equilibrium, rouses some of the higher centres, and with them an incomplete consciousness. There is a partial awaking of the psychic life but it is always incomplete. The dream consciousness is never co-extensive with the fully roused consciousness of normal active life and sometimes differs very widely from it.

We often notice in dreams a certain vagueness and confusion in our ideas of personality arising from this imperfect consciousness. We do something in our dream which in real life would cover us with shame and confusion, yet we merely wonder at it as we should in our waking moments at the deed of someone with whom we had no concern. The lack of power of forming a judgment and the want of resource of dreamers which have been noticed by everyone are in the same way due to the imperfect consciousness. Again, most of us have in dreams committed deeds from which we should not only shrink in waking life, but the motives leading to such deeds would be so completely inhibited by other ideas and motives that they would not present themselves to us as temptations. Our full consciousness is not awake, our ordinary motives and ideas are many of them inactive, and so in our dreams we are different persons, actuated by other motives, and driven to other deeds. Truly has dreaming been called a temporary insanity.

The hypnagogic or half-awakened state is only seen in health when the subject is suddenly awakened from a deep sleep before he has been sufficiently rested. In hysterical and post-epileptic conditions a more developed half-awakened state is seen, lasting for a longer time. It is the transition between sleep and waking, and so is marked by an impaired and enfeebled consciousness. The half-awakened person sees and perceives everything, but he is wanting in associated ideas. He cannot correlate facts, draw conclusions, or form judgments. He is therefore in a peculiarly suggestible state—open to the conclusions and judgments of others. He can be made to believe impossible statements and to accept opposed conclusions. The ideas usually associated with these statements and conclusions are inactive; therefore the evidence which would naturally occur to the mind and prevent their acceptance is absent. As is usual in states of great suggestibility the ideas and statements most easily accepted are those of a sorrowful and depressing nature.

The close relation between the hypnagogic state and hysterical and hypnotic conditions is easily seen. Not only do we in hysteria and allied conditions find the hypnagogic state to be unduly developed and prolonged, but the changes of consciousness seen in hysteria approach those of the hypnagogic state. Both are states in which consciousness is unusually feebly developed. In each of them in consequence the thoughts, feelings, memory-images that existed in the normal mind are many of them absent, while those that exist are less under the control of voluntary attention. In hysteria this may go on to the complete disintegration of the normal consciousness and to the formation, as we have described, of abnormal states of consciousness and so of personality.

There is another abnormality of consciousness closely allied to sleep which occurs, I believe, frequently in cases of hysteria and mental exhaustion, but which is not often noticed as it is mistaken for a faint or for an attack of *petit mal*. This is a temporary but complete loss of consciousness. It occurs usually without any warning and even while the patient is reading, talking, or walking. The attack may last from a few seconds, when it may pass unnoticed by companions, to many minutes. The loss of consciousness is absolutely complete; there is no possibility of rousing the attention until the attack has passed off, so it is impossible to wake the patient from an attack. At the same time the lower centres are more active than in normal sleep, as shown by the fact that an easy sitting position is often maintained. I have several times noticed that the patient may wake from one of these attacks in a condition of altered personality, as we noticed was the case with ordinary sleep.

I do not think that one is justified in labeling these attacks as *petit mal*. In my experience they occur in subjects in whom there is neither any personal nor any family history of epilepsy. They are never accompanied by any of the ordinary stigmata of epilepsy, as the cry, the emission of urine, or the biting of the tongue. They occur only in conditions of mental exhaustion and they totally disappear on the recovery of the normal mental health. They are not ordinary faints, as there is no change in the heart's action or circulatory disturbance of any kind. They are, I consider, merely the expression of an exhausted consciousness most nearly allied to the snatches of momentary sleep, "dog sleeps," of which we have all had experience when deprived of sleep for an unusually long time. Only in this condition as the exhaustion is abnormal so the lapses of consciousness are abnormal in their depth, and in them the threatened mental disintegration may be completed.

All the conditions touched upon above are characterised by a peculiar susceptibility to suggestion. Dreams are usually suggested by some external circumstance. Heavy bedclothes may produce a dream of fetters, a noise may suggest a battle or a storm. This suggestibility is the expression of the contracted or exhausted consciousness. Voluntary attention has failed, associated ideas are absent, so the ordinary judgments and correlations of ideas do not take place. This, of course, is normal in sleep and is only pathological when it becomes chronic. All these conditions seem to fit into one clinical picture beginning with the natural exhaustion of sleep and leading on to the pathological exhaustion of the post-epileptic, hysterical, and allied states.

The question now naturally arises as to whether there is any pathological condition common to these various states. In hysteria, I think, we invariably find an exceptionally feeble tone of the vaso-motor system. The blood-vessels react very slowly to any stimulus. The pupils are widely dilated. Red patches on the skin produced by pressure are very slow to disappear. The amount of urine passed may be at one time very much above, at another very much below, the average. The same phenomena are seen more markedly in post-epileptic conditions. This points to some irregular distribution of vaso-motor tone.

It seems probable that this irregularity in the calibre of the blood-vessels also affects the vessels of the brain. We now know that the blood-vessels of the brain possess vaso-motor nerves and such a supposition is by no means invalidated by the recent work of Dr. Leonard Hill since the total fluid contents of the brain need not vary. A study of the cerebral circulation in sleep, dreaming, and the half-awakened state gives weight to the view that in these states also there may be some irregular cerebral anæmia. There is a good deal of difference of opinion as to the state of the cerebral circulation during sleep. Some authorities consider that there may be some partial congestion. Mosso, on the other hand, believes that there is a state of anæmia at least of certain portions of the brain, the vessels dilating in dreaming or on partial awakening. In the hypnagogic state, the passage between sleeping and waking, the tone of the vessels must alter from that normal to sleep to that of waking. It is curious to note that anything calculated to restore quickly the vascular tone, as cold applied to the face and head, causes the hypnagogic state rapidly to disappear. It is only suggested that this may be a single pathological condition underlying these various states of exhaustion. We must suppose there are many others.

I have, of course, made no attempt to explain these strange conditions of changed and multiplied personality. I have merely tried to bring them, for purposes of study, into line with other simpler and more easily investigated states

and to show their relation to the phenomena of dreaming and sleep-waking. From these simpler states it is so much easier to pick out the thread which unites the whole.

Newcastle-upon-Tyne.

A NOTE ON

# THROMBOSIS IN THE VEINS OF THE PELVIS AND LOWER EXTREMITIES AFTER OPERATIONS.

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*(Translated from the Swedish by I. Walker Hall, M.B. Vict., Senior Demonstrator of Physiology, Owens College, Manchester.)*

SOME remarks of mine upon this subject appeared in the Upsala *Lakare Förenings Förhandlingar* of January, 1899, and in the *Centralblatt für Chirurgie*, 1899. The results obtained during 18 months following July, 1897, led me to suggest that after every herniotomy or abdominal operation the patient's bed should be raised at its lower end some 10 to 50 centimetres (from 4 to 19 inches) in order mechanically to assist the venous blood flowing from the lower extremities towards the heart, and so preventing thrombosis. This could be best accomplished by placing square pieces of wood under the feet. By such means the change in the position of the body caused the blood to flow along a plane inclined towards the inferior vena cava, and if the shoulders were not raised equally so towards the right auricle. Such a raising of the bed must therefore also make the flow of the blood from the veins in the true pelvis and from the exterior genitals more rapid than in the horizontal position. When the blood-stream has reached the inferior vena cava it will certainly be impelled towards the heart by the negative pressure in the thorax at every inspiration. Since January, 1899, this procedure has been adopted up to date in my practice and no case of thrombosis in the pelvic or lower extremity veins has occurred during three years. As a rule the foot of the bed is raised from 15 to 30 centimetres (from six to 12 inches) but during convalescence it can be lowered to from 10 to 15 centimetres (from four to six inches), and the latter height ought to be maintained in many cases even when the patient has returned home. In cases of cardiac lesions or cardiac debility and in those of local venous changes the elevation is even more important. The elevation should then be from 25 to 40 or 50 centimetres (from 10 to 15 or 19 inches) for the first few days. Cardiac tonics, digitalis, camphor, strychnine, and subcutaneous or intravenous saline injections should be administered before and after narcosis in all cases of cardiac debility. With famished and emaciated patients subcutaneous injections may be given of from 500 to 1000 cubic centimetres (from 17 to 35 ounces) of solution of grape sugar (strength from 5 to 10 per cent.), as well as injections of olive oil, from 50 to 200 cubic centimetres (from one and a half to seven ounces) in 24 hours with from 2 to 3 per cent. of alcohol. The injections can be given in such a way that from 5 to 10 per cent. dextrose and from 2 to 3 per cent. alcohol may be added to normal saline solutions, but 10 per cent. dextrose solution causes pain during and after injection and shows a little sugar in the urine. It is equally important to suit the narcosis as far as possible to the patient's condition (viz., morphia, $CHCl_3$, ether combined with local anæsthesia, &c.) in order to maintain the circulation and in this way prevent thrombosis.

According to Ziegler thrombosis is caused (1) by slowing of the blood-stream, and (2) by local vascular changes. In laparotomy and hernia patients there are several conditions leading to slowing of the blood-stream and more particularly in the veins of the lower extremities. Many have weak hearts from long illness and are feeble almost to starvation point. Hence after the anæsthetic one often fears fatty degeneration of the cardiac muscle. Furthermore the circulation in the calf of the leg in weak patients may be almost stagnant from the continued supine position, and if there are any varicose veins (especially saccular, where the sacs communicate with the main vessel by narrow orifices) the blood readily stagnates. Laparotomy patients are also frequently troubled by more or less "meteorism" and each increased tension of the bowels increases the intra-abdominal pressure, diminishes the extent of inspiration, lowers the negative intra-thoracic pressure, and so lessens all the forces which promote the venous flow from the iliac veins to the right auricle.

Local vascular changes, phlebitis, fatty degeneration of the endothelium, &c., may be primarily local, or secondary to infective or autotoxic conditions. Primary vascular changes are always found in patients with varices and in those who have recently suffered from blood clotting. I believe that nothing predisposes more to thrombosis after operations than previous coagulation in the larger veins of the lower extremity or pelvis. Experimental and microscopical evidence points to the probability that a thrombus in circulating blood commences from deposits of the blood plates ("Blutplaettchen") on the vessel walls, between which a small or large number of leucocytes are found. This gathering together of small granules is called "conglutination" by Eberth. If the blood-stream is sufficiently slow coagulation may ensue from the fibrin ferment which is set free from the white blood corpuscles during the act of conglutination. As the result of this united conglutination and coagulation the vessel lumen is rapidly occluded. Distally the coagulation extends in the vessels to the nearest large branch, where the blood-stream is again free. Proximally the blood will also be clotted if the local circulation is sufficiently slow. Hence, we may find a thrombus extending very quickly from the foot all the way upwards through the crural to the iliac veins in a patient who at first only complains of pain in the calf.

In flowing blood fibrin ferment is very quickly destroyed, hence a rapid or normal circulation ensures such destruction. If we then wish to prevent the formation or spreading of a thrombus it is necessary to combat all causes of local stasis. For the pelvic and lower extremity veins the raising of the lower end of a patient's bed should be of considerable mechanical assistance in promoting the flow of blood towards the inferior vena cava and right auricle. The value of this aid may be increased and the patient made more comfortable by frequently altering his position in the bed, and lightly rubbing the feet and legs, provided that he has not already a thrombus. If any varices exist on the distal side of the operation wound in a lower extremity the part should be bandaged from the foot to such a point, the leg should be elevated, or, better, the bed should be raised. This procedure exerts a very much more noticeable influence upon the circulation. By its use I believe we may largely prevent thrombosis following surgical operations, parturition, and those diseases which are accompanied by intense anæmia and auto-intoxication, in which a tendency towards the complication of thrombosis exists.

I consider myself also entitled to ask physicians to use this suggestion of "bed elevation" for preventing thrombosis. Anæmic patients often rest and sleep better after such an arrangement of the bed. Patients with medium-sized varices on their feet or legs if their limbs have not been bandaged during the day often feel restless and tired with aching in their legs at bedtime and are consequently unable to sleep for several hours. For such persons an elevation of from eight or 12 to 15 centimetres (from three or four and a half to six inches) should be employed at night. After a few nights' experience of the position in question these patients will sleep better and the unpleasant sensations in their limbs will entirely disappear.

Upsala.

THE MEDICAL DEPARTMENT OF MCGILL UNIVERSITY.—Some $60,000 (£12,000) is now being expended in new class-rooms which are to be ready for the opening of the regular session in October. When the call to arms came for volunteers to serve the Empire in the South African campaign McGill University sent many of her students and not a few from the medical department. Two of these have met a soldier's death and now fill honoured soldiers' graves in that far south land—Mr. E. P. O'Reily, son of Dr. O'Reily of Hamilton, Ontario, and Lieutenant Border, the only son of Canada's Minister of Militia, himself an M.D. McGill can be consoled in her loss by the thought that her two sons have died fighting for Queen and Empire.

# HEATSTROKE IN INDIA: AN EXAMINATION OF SOME STATISTICS RELATING THERETO.

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THE purpose of this paper is not to discuss the whole question of the occurrence of heatstroke in India but rather to find out how far certain statements made in Dr. Sambon's article on "Sunstroke as an Infectious Disease" are borne out by an examination of the medical statistical records of the European army in India—statements which have proved so "infectious" that they have been repeated with but little discrimination in several recent publications dealing with the disease. The first criticism suggested by a perusal of Dr. Sambon's article is that one is somewhat at a loss to find out how from available records Dr. Sambon was able to discriminate between cases of syncope produced by heat and the more severe form of heatstroke to which he wishes to give the name "siriasis," a term which savours more of atmospheric influences than Dr. Sambon should care to countenance. It is easy to say that cases which do not seem to agree with one's theory "are only cases of syncope." In order to avoid this error in the following tables I have taken only fatal cases of heatstroke. Dr. Sambon says that in syncopal cases "immediate recovery is the rule," therefore we are safe in concluding that the fatal cases recorded in the following tables are examples of what he would call "siriasis," but which we prefer to call by the expressive and simpler name of "heatstroke." Dr. Sambon has fallen foul of the expression "heat-apoplexy," which, however, is the term sanctioned by the Royal College of Physicians of London in their "Nomenclature of Diseases," the use of which is officially enjoined for all medical statistical returns in India. Dr. Sambon may be assured that medical men in India do not confuse the cases they call heat-apoplexy with cerebral hæmorrhage or other such disease.

The statements of Dr. Sambon which will be here examined are as follows:—1. New arrivals are more liable to be attacked than natives or old residents ..... acclimatisation reduces the susceptibility to siriasis. 2. Siriasis is not always found in the warmest regions. 3. Siriasis prevails only in the "lowest regions," in "coast districts," or in the valleys of great rivers. 4. Its altitudinal range is even more restricted than that of yellow fever—this range is put down by Manson (p. 206) and by Allchin ("Manual of Medicine," vol. i., p. 13) as 600 feet. 5. It is prevalent in Lower Burma.

Taking the first statement we admit at once that Europeans newly arrived in India are more liable to be attacked by heatstroke than the natives of the country. It would be strange if it were otherwise; as Manson writes of the natives of tropical countries, "Their physiological activities are attuned by custom and habit to the conditions to which they were born." The following table shows to what an extent this is true.

TABLE I.—*Number of Admissions and Deaths from Heatstroke in Europeans in India and Natives.*

| Year. | European army, average strength 68,000. | | Native army, average strength 124,000. | | Native prisoners, average strength 110,000. | |
|---|---|---|---|---|---|---|
| | Admissions. | Deaths. | Admissions. | Deaths. | Admissions. | Deaths. |
| 1898 ... | 369 | 79 | 31 | 11 | 122 | 40 |
| 1897 ... | 257 | 51 | 32 | 11 | 103 | 52 |
| 1896 ... | 268 | 49 | 46 | 26 | 110 | 41 |
| 1895 ... | 143 | 60 | 34 | 12 | 71 | 37 |
| Total | 1037 | 239 | 143 | 60 | 406 | 170 |
| — | Deaths per mille = 3·5. | | Deaths per mille = 0·48. | | Deaths per mille = 1·5. | |

We now come to a consideration of the statement about new arrivals contrasted with old residents (Tables II., III., and IV.).

TABLE II.—*Heatstroke in Relation to Length of Residence in India. Deaths per 1000 of Strength.*

| Year. | First and second year. | Third to fifth year. | Sixth to tenth year. | Eleventh to fifteenth year. | 15 years and upwards. |
|---|---|---|---|---|---|
| 1894 ... ... ... | 1·06 | 0·73 | 0·44 | 0·67 | — |
| 1893 ... ... ... | 0·40 | 0·38 | 0·63 | — | — |
| 1892 ... ... ... | 1 00 | 0·72 | 1 03 | 1·40 | 3·85 |
| 1891 ... ... ... | 1·74 | 0 59 | 0·43 | 1·81 | 3·27 |
| Average* ... ... | 1·02 | 0·61 | 0·63 | 0·99 | 1·68 |

*Liability Percentage.*

| | | | | | |
|---|---|---|---|---|---|
| 1894 ... ... ... | 36 | 25 | 15 | 23 | — |
| 1893 ... ... ... | 28 | 27 | 45 | — | — |
| 1892 ... ... ... | 12 | 9 | 13 | 18 | 48 |
| 1891 ... ... ... | 22 | 7 | 5 | 23 | 42 |
| Average* ... ... | 21 | 12 | 13 | 20 | 34 |

* Averages calculated on average strengths yearly.

TABLE III.—*Heatstroke and Length of Residence. Deaths per 1000 of Strength.*

| Year. | Under 1 year. | 1 to 2 years. | 2 to 3 years. | 3 to 4 years. | 4 to 5 years. | 5 to 10 years. | 10 years and over. |
|---|---|---|---|---|---|---|---|
| 1895 ... | 1·46 | 0·89 | 0·97 | 0 28 | 0·25 | 1·27 | 0·54 |
| 1896 ... | 0·63 | 0·78 | 0·69 | 0·35 | 0 23 | 1·31 | 1·51 |
| 1897 ... | 2·25 | 0·44 | 0 54 | 0·20 | 0 25 | 0·34 | 1·12 |
| 1898 ... | 0·87 | 1·69 | 1·17 | 0·63 | 1·16 | 1 49 | 1·55 |
| Average... | 1·31 | 0·94 | 0 84 | 0·36 | 0·46 | 1·12 | 1·19 |

*Liability Percentage.*

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1895 ... | 26 | 16 | 17 | 5 | 4 | 22 | 10 |
| 1896 ... | 11 | 14 | 13 | 6 | 4 | 24 | 27 |
| 1897 ... | 44 | 9 | 11 | 4 | 5 | 7 | 22 |
| 1898 ... | 10 | 20 | 14 | 7 | 14 | 17 | 18 |
| Average... | 21 | 15 | 14 | 6 | 7 | 18 | 19 |

TABLE IV.—*Heatstroke in Relation to Age. Deaths per 1000 of Strength.*

| Year. | Under 20 years. | 20 to 25 years. | 25 to 30 years. | 30 to 35 years. | 35 to 40 years. | 40 years and upwards. |
|---|---|---|---|---|---|---|
| 1898 ... ... ... | 0·47 | 1·10 | 1·00 | 1·71 | 4·24 | 4·89 |
| 1897 ... ... ... | — | 0·82 | 0 60 | 1·16 | — | 2·49 |
| 1896 ... ... ... | — | 0·53 | 0·58 | 1·96 | 2·75 | 5·26 |
| 1895 ... ... ... | — | 0 84 | 0·76 | 1·88 | 2·20 | — |
| Average ... ... | 0·13 | 0·82 | 0·73 | 1·69 | 2·34 | 3·14 |

| | *Liability* | | *Percentage.* | | | |
|---|---|---|---|---|---|---|
| 1898 ... ... ... | 4 | 8 | 7 | 13 | 32 | 36 |
| 1897 ... ... ... | — | 16 | 12 | 23 | — | 49 |
| 1896 ... ... ... | — | 5 | 5 | 18 | 25 | 47 |
| 1895 ... ... ... | — | 15 | 13 | 33 | 39 | — |
| Average ... ... | 1 | 9 | 8 | 19 | 26 | 35 |

The above tables show that Dr. Sambon's statement contains only part of the truth, and baldly stated as above it is certainly misleading. The tables give the ratio per mille mortality of the disease for eight years, they cannot be grouped in one table owing to an alteration in the headings. In both tables, however, we find that new arrivals do suffer more than others, but this is only part of the truth, for it is shown that this liability decreases for a few years following the first, and then more or less steadily increases in proportion to the length of residence in India.

There is no need here to invoke the analogy of other diseases, the explanation is simple enough. It will be admitted by everyone who has lived any length of time in the tropics that recklessness and carelessness are characteristic of the new arrival in any hot country. Again to quote Manson: "The new arrival in the tropics does not think much of exposing himself to the sun, the rain, and the wind, the old resident is very chary of going out without his sun-hat and his white umbrella. ..... The new-comer may look upon these precautions as signs of effeminacy. They are not so. Experience has told the old resident that neglect means an attack of fever. ..... The new-comer sits up late, eats, drinks, and smokes as in Europe; the old resident goes to bed betimes and eats, drinks, and smokes in moderation. ..... To a great extent acclimatisation means experience, education, an intelligent adaptation of habits." These remarks apply with much force to the new-comer in his relation to exposure to the sun or great heat, and this carelessness is to a large extent sufficient to account for the greater liability of new-comers to attacks produced by the sun or heat. During the next few years the young man grows wiser, there is no acclimatisation but there is experience; nevertheless, the sun does not spare him altogether, and as he grows older, in spite of precautions, he seems to become more and more liable to the effects of heat till his percentage liability becomes at least equal to that of the first years of his inexperience. This, at least, the above tables seem to indicate, but bearing in mind the fact that the number of soldiers of the British army in India at the higher ages is considerably less than at the younger ages I do not put the case stronger than this. The per mille ratios quoted would bear a stronger statement than this, but ratios dealing with large numbers cannot with complete accuracy be compared with ratios based on small numbers, though to avoid this fallacy I have taken figures for eight years. Therefore, instead of Dr. Sambon's statement quoted above, these tables show that new-comers and old residents are the most liable to the effects of great and prolonged heat, whilst Europeans are at their best in resisting these influences in the intermediate years of their residence in India. It may also be added that M. Brault in his newly published volume, "Maladies des Pays Chauds," thinks the early years the least dangerous; he writes: "Sans doute les deux premiers étés passés sous les climats chauds sont les moins pénibles." M. Brault mentions, but does not accept, the "infectious" theory.

Dr. Sambon's next statement to be considered is that siriasis is "not always to be found in the warmest regions." Always remembering the great importance of the predisposing causes in the production of heatstroke I am inclined to challenge Dr. Sambon's statement as regards the warmest regions, although it is not clear what he means by the expression "warmest." Most decidedly it can be shown that where the heat is the fiercest and the most continuous it is there that we find heatstroke most prevalent and most fatal.[1]

The following table (Table V.) gives the death-ratios from heat-stroke in the 12 geographical groups into which India is divided for the purposes of medical statistics. I purposely chose to consider fatal cases only and therefore, as said above, presumably cases of what Dr. Sambon would call "siriasis."

TABLE V.—*Heatstroke in Relation to Geographical Groups in India. Death-rates for Four Years per 1000 of Strength (European Troops).*

| Year. | I. Burma Coast and Bay Islands. | II.* Burma Inland. | IV. Bengal and Orissa. | V. Gangetic Plain and Chutia Nagpur. | VI. Upper Sub-Himalaya. | VII. North-west Frontier, Indus Valley, and North-west Rajputana. |
|---|---|---|---|---|---|---|
| 1898 ... ... ... ... | — | 0·38 | 0·84 | 1·35 | 2·04 | 4·22 |
| 1897 ... ... ... ... | 0·83 | 0·37 | 0·83 | 1·17 | 0·81 | 0·60 |
| 1896 ... ... ... ... | — | 0·37 | 0·41 | 1·20 | 1·18 | 1·86 |
| 1895 ... ... ... ... | 0·81 | — | 0·88 | 0·42 | 0·16 | 3·47 |
| Average† ... ... | 0·40 | 0·28 | 0·75 | 1·03 | 1·23 | 2·52 |
| Order of prevalence ... ... ... | 8 | 9 | 5 | 4 | 3 | 1 |

| Year. | VIII. South-east Rajputana, Central India, and Gujerat. | IX. Deccan. | X. Western Coast. | XI. Southern India. | XII.*a* Hill stations. | XII.*b* Hill convalescent depots and sanitaria. | India. |
|---|---|---|---|---|---|---|---|
| 1898 ... ... ... ... | 1·16 | 0·12 | 0·66 | 1·14 | — | 0·32 | 1·17 |
| 1897 ... ... ... ... | 1·79 | 0·68 | — | 0·63 | 0·28 | — | 0·91 |
| 1896 ... ... ... ... | 1·09 | 0·30 | — | — | — | — | 0·70 |
| 1895 ... ... ... ... | 1·42 | 0·62 | — | 0·53 | — | — | 0·84 |
| Average† ... ... | 1·36 | 0·43 | 0·16 | 0·57 | 0·06 | 0·01 | 0·90 |
| Order of prevalence ... ... ... | 2 | 7 | 10 | 6 | 11 | 12 | — |

* Column III. is omitted as there are no European troops in Assam.
† Averages calculated on actual cases and annual strengths.

Anyone who has lived in India will admit that for downright fierceness of the summer heat night and day no part of India is less tolerable than the North-west Frontier, the Punjab, and Sindh, and here it is that, as the above tables show, there is the greatest mortality from heatstroke. Those who have lived in Attock, Nowshera, Hyderabad (Sindh), or Peshawur in the hot weather will bear witness to the fierceness of the heat, which lasts from May till October, scarcely interrupted by the onset of the monsoon in the end of June. Next for high mortality comes the group which comprises South-east Rajputana, Gujerat, and Central India, closely followed by the upper sub-Himalayan group and then that of the Gangetic Plains. When it is remembered that these groups contain the following stations it is scarcely necessary to say more about the heat—viz., Lahore, Sialkot, Amritzur, Allahabad, Muttra, Lucknow, Cawnpur, Benares, Deesa, Ahmedabad, Jhansi, Indore, and Agra. Next on the mortality list we find Bengal and Orissa, with a distinctly lower rate per mille. The heat in Bengal and Orissa is certainly trying, but it is broken by the rains early in June; the fierce heat is not so continuous or so prolonged, the nights are somewhat cooler, and we find, consequently, a lower death-rate from this affection. Next to Bengal and Orissa we find Southern India with the following stations—Madras, St. Thomas's Mount, and Pallavarum, all close to the sea-coast, and Bellary (1483 feet) and Bangalore, 3021 feet above sea-level. Still lower on the list we find the high land known as the Deccan, with most of its stations over 1000 feet high—viz., Kirkee, 1837 feet; Poona, 1909; Satara, 2185; Belgaum, 2473; Secunderabad, 1752; Jubbalpur, 1306; Saugor, 1753; and Kamptee, 941 feet. Below this, again, comes the group consisting of the coast of Burma and the Bay Islands; here the mortality ratio falls to 0·40 per mille or one-sixth of that

[1] The following remark from an editorial article in the *Medical Review* of May, 1900, is worth quoting: "By diverting attention from the means by which siriasis may be to a great extent prevented in the army and by which many valuable lives may be saved the infectious theory is calculated to do a great deal of harm."

of Group I. On the Burma coast and in the Andaman Islands the heat is tempered by the sea-breezes and the rains come early and heavy. Still lower comes Inland Burma, with its damp relaxing climate. The stations on the West Coast show a still lower rate; they are Bombay, Cannamore, Calicut, and the small station of Mallapuram, close to the Shivarai Hills. The Hill stations, of course, show a still smaller rate. The above table therefore shows that heatstroke is the most fatal where the heat is fiercest and most continuous night and day. The same tables also dispose of Dr. Sambon's other statement that siriasis only prevails in "the lowest regions and coast districts." As a matter of fact, the lowest regions are the Burma coast, the Bay Islands, and the West Coast, and it is exactly here that the very lowest ratios for heatstroke are obtained.

I now come to Dr. Sambon's statement about the restricted altitudinal range of heatstroke, which the other writers have arbitrarily fixed at 600 feet. Turning again to Table V. we find that in the group which heads the list for mortality the worst two stations are Peshawur and Nowshera, with the heights above sea level of 1165 and 1100 feet respectively. In the next group we have the following stations, considerably above 600 feet—viz., Mhow, 1903; Indore, 1806; Nowgong, 770; Jhansi, 860; Nasirabad, 1461; and Neemuch, 1461 feet. In Group VI. which comes third on the list we have Attock, 891 feet; Campbellpur, 1200; Delhi, 715; Rawulpindi, 1707; and Roorkee, 884 feet. Taking as low as fourth place on the mortality list we meet the group of the Gangetic Plain with its stations under 600 feet. On the other hand, when we take the groups with the lowest elevations—viz., the coast towns of Burma, the Bay Islands, and the West Coast—we find all the towns have elevations little removed from the sea-level, and here we find the very lowest ratios for this disease. This shows the absurdity of laying down a law limiting the disease by an arbitrary level like 600 feet. In fact, the influence of height has little effect *per se* till we reach levels where elevation is combined with coolness of the atmosphere as in the hill stations, most of which are well over 5000 feet above sea-level.

It has already been shown that the incidence of fatal cases of heatstroke is greatest in those parts of India where the night and day heat is fiercest and most continuous;[2] it can also be shown that the disease is by far the most prevalent in the months when the heat is greatest. The following table (Table VI.) gives the monthly distribution of heatstroke cases in the European army of India for seven years, 1888–94.

TABLE VI.—*Monthly Distribution of Heatstroke cases in the European Army in India (for seven years).*

| Year. | January. | February. | March. | April. | May. | June. | July. |
|---|---|---|---|---|---|---|---|
| 1894 ... ... | 1 | 1 | 1 | 3 | 35 | 81 | 27 |
| 1893 ... ... | — | 1 | 1 | 2 | 17 | 35 | 13 |
| 1892 ... ... | 1 | 1 | 8 | 5 | 29 | 72 | 84 |
| 1891 ... ... | — | 1 | 3 | 5 | 35 | 56 | 93 |
| 1890 ... ... | — | — | 3 | 15 | 18 | 63 | 11 |
| 1889 ... ... | 1 | 1 | 5 | 16 | 30 | 102 | 44 |
| 1888 ... ... | 1 | 4 | 6 | 9 | 26 | 74 | 42 |
| Total ... | 4 | 9 | 27 | 55 | 190 | 483 | 314 |

| Year. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|
| 1894 ... ... | 25 | 15 | 5 | 1 | 2 |
| 1893 ... ... | 37 | 7 | 7 | 2 | — |
| 1892 ... ... | 13 | 5 | 4 | — | 1 |
| 1891 ... ... | 20 | 6 | 6 | 2 | 1 |
| 1890 ... ... | 4 | 7 | 3 | — | 3 |
| 1889 ... ... | 11 | 16 | 2 | — | 2 |
| 1888 ... ... | 25 | 22 | 6 | 1 | 2 |
| Total ... | 135 | 78 | 33 | 6 | 11 |

N.B.—The annual reports of the Sanitary Commissioner only give the monthly distribution of heatstroke for the above seven years.

[2] In 1898 the "mean maximum" heat recorded was greatest in geographical groups No. VII. and No. VIII. of Table V., and in these areas the table shows the highest ratio for heatstroke (*Indian Weather Review* for 1898).

From this table it is seen that the following cases occurred month by month—January 4 cases, February 9 cases, March 27 cases, April 55 cases, May 190 cases, June 483 cases, July 314 cases, August 135 cases, September 78 cases, October 33 cases, November 6 cases, and December 11 cases. Here, again, is clearly seen the predominating influence of great heat in the incidence of this disease. The cases reach their lowest level in the coldest months and rise steadily and progressively through the hot months of April and May till they culminate in the truly fierce and extremely oppressive heat of June, in the dreaded period before the bursting of the monsoon rains, which as they spread steadily from the sea-coasts bring a refreshing coolness to all the land. In July and August, as the rains spread further inland and the temperature falls, the number of heatstroke cases gets gradually less till they reach a very low minimum in the delightful cold-weather months.

I have shown that the statistics of the British army in India show that heatstroke is most fatal and most prevalent where the heat is greatest and most oppressive and at the time of year when these influences are at their maximum. It will require much more evidence than has yet been produced to make those who have had experience of the disease in India accept a microbial or any other cause which seeks to minimise the great and predominating influence of fierce and continuous heat. While looking upon heat as the most important factor we must also bear in mind the great influence of the usually mentioned predisposing causes, as age, length of residence in the tropics, occupation, exposure, unsuitable clothing (as the tight-buttoned and belted uniform of soldiers), intemperance (perhaps especially beer-drinking), over-fatigue and overcrowding, want of ventilation, and previous illnesses.

Simla.

## POISONING BY CARBON MONOXIDE.

BY C. R. ELGOOD, M.D. LOND.

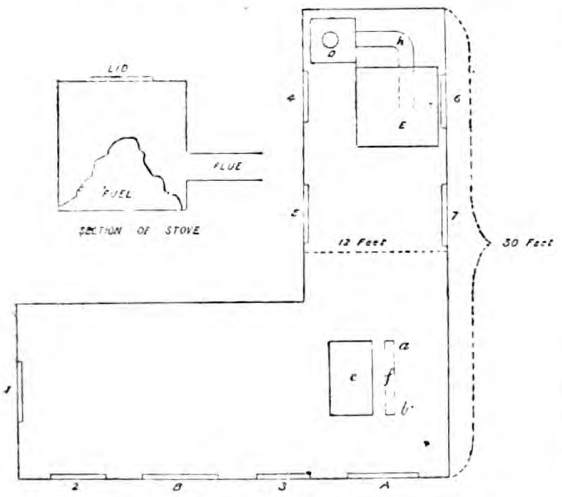
TWO women, aged 58 years and 31 years respectively, inmates of a workhouse, were at work in a large laundry provided with a stove and a good-sized hot-air chamber for drying clothes. At 6.45 in the evening another woman on entering the room found them both lying on the floor near one end of the room about four feet from a closed door leading into an airy wash-house. In both cases the bowels had acted involuntarily. The women were found lying close to each other at the foot of a form in front of a long table. The elder woman had her feet on the form on which it appeared that she had been sitting and she was covered with vomit. A nurse who was summoned found her completely stiff all over. Her arms were drawn up and her eyes were fixed and looked strange. The nurse sprinkled her with cold water and removed her from the room, when she became very sick and apparently revived. On my arrival, at 7.45 P.M., I found the patient in a bed in the infirmary. She was not breathing, there was no pulse, and no cardiac sounds could be heard with the stethoscope. There was, however, a good colour in her lips and face; so much was this the case that in spite of the fact that the woman had not been observed to breathe since she was found an hour before, artificial respiration was resorted to and was kept up for some considerable time until its obvious uselessness was apparent to all, for she never gave a gasp.

The younger woman was at the time of my visit lying in the next bed to the other; she was groaning and crying and at the same time opening her eyes widely and staring wildly round. The pupils were fully dilated and insensible to light, though they reacted in a quarter of an hour after. The breathing was noisy, rapid, and panting in character, 10 or 12 respirations following each other quickly in succession and then ceasing for a few seconds, but there was no regular cycle. No pulse could be felt at the wrist and no cardiac impulse was perceptible. There was present a rapid semiflexion and pronation of both forearms by which means the hands were brought together as if for the purpose of rubbing them. It was quite a coördinated movement and one apparently accompanying the return to consciousness. In a quarter of an hour the patient became much more conscious. She was very excited and seemed frightened and complained of pain in the head. In another

quarter of an hour a faint pulse was perceptible at the wrist. The treatment which was employed comprised friction to the limbs and cardiac region and hot coffee and enemata of brandy and milk were administered. The next day she was much better. Her pulse, however, was still small and weak and it was also irregular and intermittent. The woman was perfectly conscious and rational and gave the following account of the occurrence. As far as she remembered, she said, the first thing she noticed to be wrong was a "swimmy" feeling in the head, and she sat down on the form with her companion. After this she remembered nothing till she saw the medical officer by the side of her bed. She also stated that she had closed the windows in order that the master might not see the fire which, as subsequently transpired, the women had augmented for the purpose of cooking some potatoes which were placed on the lid of the stove. She made a rapid recovery.

The body of the elder woman was removed to the mortuary on the same evening as that on which the death had occurred. The corpse was the occasion of a good deal of uneasiness to the nurse who had to "lay it out," for, from the appearance of the body, she could not bring herself to believe that the woman was actually dead. There was no rigor mortis at 10 P.M. on that evening, but it was well marked at noon on the next day. The post-mortem examination was made about 40 hours after death, when rigor mortis had not passed off. The body was well nourished and very fat, and the face had a remarkably fresh appearance. Over the areas where hypostatic lividity is usually present a bright rose-red colouration was seen, in many cases spreading upwards in patches—e.g., on the back of the forearms and cheeks. On opening the body the blood appeared to be brighter than normal and all the organs were of a brighter colour than is usual. The intestines were still warm. The walls of the heart were thin and there was a good deal of fat around them. The cavities of the heart were empty. The valves and large vessels were healthy and there was no sign of a clot anywhere. The right lung was half the size of the left, the parietal and visceral layers of the pleura on this side being connected by old adhesions in the neighbourhood of the diaphragm and posterior thoracic wall. On section the lower and back parts of this lung were seen to be dark in colour and of firmer consistence than is usually found. The tissue, however, was everywhere crepitant and it floated in water. The left lung was of normal size and on section its colour was seen to be somewhat darker than usual, but otherwise it was healthy. The spleen was very friable and was gorged with blood. The kidneys were healthy. They exhibited the rose-red colouration more than any other organ. The other organs were all normal. The blood was everywhere fluid and no clot was seen at all.

The room in which the accident happened was quite 14 feet in height. It was of the shape of a reversed letter L, each limb measuring about 30 feet by 12 feet, and there was a stove for heating the drying apparatus in a recess in a corner below the level of the floor. On entering the room on the same evening the blue flames of carbonic oxide could be seen issuing from between the lid and the top of the stove. The air was very hot and oppressive, but was not unbearable for a time. The plan appended, which is copied from one made at the time, may help to explain the shape of the room and the position of the two women. On looking into the stove (over which there was an opening in the roof about a foot square) when it was empty it was seen that the exit pipe was placed rather nearer the bottom than the top, so that there was plenty of room to pile up fuel above its level, thus blocking up the flue and sending the fumes into the room instead of up the pipe. As it transpired from the evidence which was given at the inquest that a big fire had been made up it was concluded that this was the cause of the accident.




A, Door leading to wash-house. B, Door leading to quadrangle. 1, 2, 3 Casement windows, four feet from ground, all closed but opening easily. 4, 5, 6, 7, Ventilating windows, six feet from ground, also closed. D, Stove. E, Drying chamber. *h*, Hot air pipe. *a*, Position of body of the elder woman. *b*, Position of body of the younger woman. *c*, Table at which the two women were sitting. *f*, Form.

The fumes given off by the smothered combustion of coke vary according to the quality of the fuel. As a general rule, one expects to find, in addition to carbonic oxide and carbonic acid, sulphurous acid, sulphuretted hydrogen, light carburetted hydrogen, and olefiant gas.[1] The four latter gases, however, are so irritating to the lungs and so perceptible to smell that they seldom or never cause poisoning by themselves, but frequently even prevent the first two gases from producing ill effects, for the obvious reason that they give warning of danger. In this case there was no smell of gas in the room when I entered it, though the flames of carbonic oxide could be seen burning in the stove, and it is certain that no warning smell was appreciated by the two women. We may, therefore, conclude that carbonic oxide or carbonic acid or both were accountable for the catastrophe. These two gases, though their separate action on the body is so diverse, seem to help one another greatly in producing fatal effects. It is known that it takes 10 per cent. of carbonic acid alone to destroy life, and 5 per cent. of carbonic oxide in the atmosphere has a similar result; but if the two are combined, as little as a half per cent. of carbonic oxide with 5 per cent. of carbonic acid is a fatal dose,[2] and from the appearances then noted after death it would seem that the carbonic oxide plays the principal part.

The classical symptoms ascribed in the text-books to charcoal vapour (which may be considered as carbonic oxide, carbonic acid, aqueous vapour, and impure air)[3] are headache, pulsation in the temples, giddiness, vertigo, nausea, vomiting, convulsions, great prostration, and cardiac weakness, drowsiness, insensibility, and coma. Judging from the two cases just related and the comparative frequency with which I have found the symptom recorded in reported cases, I think that the involuntary expulsion of fæces may be added to this list. There is no doubt, too, that the poison has a powerful action on the central nervous system. Dr. Alexander Scott[4] describes a condition of mental weakness of long standing in a case under his care as illustrating the length of time that the brain retains the poison. The periodicity not infrequently observed in the symptoms as the patient regains consciousness points, I think, in the same direction. On more than one occasion a fall of body temperature has been noticed in those poisoned by carbonic oxide.[5] Of the remaining symptoms the subjective ones of pulsation in the temples and nausea were the only ones not elicited in the cases described. An illustration, too, is afforded of the insidious nature of the poison so often noticed as evidenced by the absence of any effort to escape. In this case both the women who were affected were lying close to the door which, as old inmates, they well knew led to the wash-house and fresh air.

In this connexion we cannot resist referring to the graphic account of wholesale poisoning by carbonic oxide which occurred in the disaster at the Snaefell mine as given by Dr. A. E. Miller.[6] A rescuing party was overtaken by the gas—which it was subsequently found was caused by some smouldering timber supports—and one of their number (Dr. Le Neve Foster) kept writing a description of his sensations as long as his pencil would trace words. He wrote:

[1] Taylor and Stevenson's Principles and Practice of Medical Jurisprudence, vol. ii., p. 112.
[2] Bernard: Substances Toxiques, p. 212.
[3] Taylor and Stevenson: loc. cit., p. 104.
[4] THE LANCET, Jan. 25th, 1896, p. 217.
[5] Brit. Med. Jour., vol. ii., 1895, p. 1514.
[6] Ibid., vol. ii., 1898, p. 32.

"We all sat without moving or trying to escape. The foot of the ladder was close by, yet none of us made any effort to go to it and ascend even a single rung. We none of us tried to walk a dozen steps which would have led us to the other side of the shaft partition where we all knew there was a current of better air." The same paper alludes to the remarkably fresh and life-like appearance of the corpses as they were brought to the surface, and what is still more interesting, as it bears somewhat on the treatment, we read that as soon as a warning was given that there was foul air about there was a rush among the men for the ladders and a general climbing commenced. It was soon observed that of these men, who were really poisoned before they knew it, only the elder ones got up to the top, and nearly all those "well under 30" fell down and were recovered afterwards only when they were dead. This Dr. Miller ascribed to cardiac failure consequent on the greater exertion made by the younger men to escape, it being conjectured that the elder ones took matters more leisurely and so put less strain on their heart muscles. It appears to me that, though this explanation may not appeal to all, its important bearing upon treatment seems to lie in the consideration as to whether continued vigorous efforts at artificial respiration may not by exhausting a semi-exposed patient do more harm than good.

The symptom of convulsive rigidity which was present in the only one of these two women who was found alive is so commonly stated to be present that it calls for a little remark. These spasms have been supposed to be asphyxial in their nature. They have been mostly observed to affect the extensors of the trunk and the flexors of the limbs, for in asphyxia, as Sir T. Lauder Brunton has shown, these groups of muscles overcome their antagonists and thus opisthotonos and flexion of the limbs are produced.[7] It will be remembered that the arms of the younger woman were described by the nurse as "stiff and drawn up." Whether this be the correct interpretation of the symptom or not it is well to recollect that at least two gases are present in poisoning by coke or charcoal vapour, and it is quite possible that some of the symptoms we find may be produced by either gas acting separately.

I have only been able to find one case of poisoning by the pure gas carbonic oxide. This is recorded in an old edition of Beck's Medical Jurisprudence.[8] A man at Dublin inhaled the gas for an experiment and was nearly killed. In him the poison certainly acted promptly on the central nervous system and the heart, for total insensibility and lifelessness came on at once and lasted half an hour. On introducing oxygen gas into the lungs he recovered with convulsive agitation and quick and irregular pulsation, and for some time after recovery total blindness, sickness, and vertigo were present.

One would imagine from *à priori* reasoning that as carbonic oxide forms such a stable compound with hæmoglobin there is but little chance of setting free this combined hæmoglobin, and that the only method of treatment would be to remove some of it and inject fresh into the system. And this experience fully proves to be the case. A case is related where a man was saved by this means after being in an apparently hopeless state for 48 hours.[9] He was bled to 800 grammes, and 110 grammes of defibrinated blood were injected. The record of successes is certainly not so large as one would hope. In 1885, 23 cases were collected in which transfusion had been resorted to. Recovery had ensued in eight.[10] We are not told, however, whether the blood was defibrinated in every case, nor even whether blood was used in every instance; for I note that Halstead of New York[11] has stated that saline injections are equally serviceable in the case of animals poisoned by carbonic oxide. Although he quotes Kühne as an authority for his statement, one is at a loss to understand by what means such a proceeding would be likely to do good.

I have already alluded to the possible harm that might result from the prolonged use of artificial respiration. Alone it certainly seems to be but of little use, but with the aid of such adjuncts as the inhalation of oxygen, slapping and friction over the cardiac region, and faradaisation of the phrenics it has proved of great service. The fall of temperature has suggested the use of the hot bath, and certainly the external application of warmth and the avoidance of undue exposure of the body while artificial respiration is being carried on are things to be most carefully attended to.

It has been kindly pointed out to me by Dr. E. Casey that no allusion to this subject of carbonic oxide poisoning is complete without a reference to the growing use of so-called "water-gas" as an illuminant. True water-gas, or the gas produced by the action of steam upon carbon, consists of about equal volumes of hydrogen and carbonic oxide with small quantities of nitrogen and carbonic acid.[12] This, of course, would not be of much use for illuminating purposes. The term, however, is very loosely applied and generally includes gaseous mixtures used for illumination which are distinguished from coal gas by the large quantity of carbonic oxide they contain. The main point is that the high percentage of carbonic oxide usually entails a loss of the characteristic odour of illuminating gas and hence the great danger arising from an escape of water-gas into a bedroom during the night. Water-gas as used for illuminating is said usually to contain about 30 per cent. of carbonic oxide while ordinary coal gas contains only 7 per cent. of carbonic oxide.[13] Since the introduction of water-gas into New York the deaths from burner escapes are said to have increased tenfold and in one State of America a law has been introduced limiting the percentage of carbonic oxide to 10 per cent.[14]

Windsor.

[7] THE LANCET, Jan. 25th, 1896, p. 217.
[8] T. K. Beck and J. B. Beck: Elements of Medical Jurisprudence, London, 1836, p. 90.
[9] Annales d'Hygiène, tome ii., 1843, p. 1155.
[10] Brit. Med. Jour., vol. i., 1888, p. 1185.
[11] Medical Times and Gazette, vol. i., 1884, p. 508.
[12] Thorpe's Dictionary of Applied Chemistry.
[13] Asclepiad, 1885, p. 287.
[14] Ibid.

## GENERAL NERVOUS SHOCK, IMMEDIATE AND REMOTE, AFTER GUNSHOT AND SHELL INJURIES IN THE SOUTH AFRICAN CAMPAIGN.

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THE following notes of nine cases—out of a total of over 60 cases seen during the past two and a half months—with similar symptoms affecting the nervous system sufficiently illustrate some of the results, immediate and remote, which have been noticed as occurring in soldiers invalided home from the front. It is likely that in the near future the country will be deprived of a large number of our most capable and experienced men if the cases continue to occur in such frequency.

CASE 1.—At Colenso on Dec. 15th, 1899, Corporal —— was in the firing line when a bullet struck him in the left ear, entering the external auditory canal, rupturing the membrana tympana, and lodging in the mastoid process. A Mauser bullet was extracted from behind the ear at Pietermaritzburg Hospital, it being deeply imbedded in the bone, six days later. The patient was unconscious for six hours after the injury; he vomited, and blood escaped from the ear, the nose, and the mouth. Some loss of power down the left side was experienced for a month after. The wound healed well, the patient recovering power of the left side, but he still remains deaf in the left ear, with continual noises.

*Present condition.*—The patient is a thin and pale man with an anxious, careworn expression; he is only 32 years of age but looks older. His movements are slow and laboured. His body surface is cold and there is want of general muscular tone. There is a small, almost imperceptible, scar behind the left ear, over the mastoid process. The external auditory canal is normal in appearance; the membrana tympanum is gone, but no other abnormal appearance can be detected in the middle ear. He is somewhat deaf in this ear, but nothing very marked. He complains of giddiness, languor, and inability for sustained exertion of body or mind. His memory is bad and is getting worse; he is nervous and shaky, easily upset and put out, he suffers from sleeplessness at times, and his vision is dim with constant noises and lightness of head. The muscle movements are slow and impaired and he has continuously suffered with headache since the injury and in spite of every care is steadily losing weight.

CASE 2.—At Spion Kop a private of the 2nd Battalion King's Own Royal Lancashire Regiment, aged 24 years, was wounded in the left ankle, injuring the fibula and traversing the limb, and making its exit behind the tendo-Achillis. The aperture of entry was larger than that of exit. The injury was sustained whilst reinforcing the firing line. A comrade removed his boot and sock and applied the first and final dressing. The patient made an uninterrupted recovery after one month of the local injury.

*Present condition.*—Beyond some impairment of muscle movements on the plantar surface of the foot and slight stiffness around the ankle the local symptoms around the seat of injury are *nil;* there is wasting of muscles of both legs and impaired movements. There are areas of hyperæsthesia and anæsthesia and muscle reflexes are much exaggerated in both limbs; there are tremors of muscles and night twitchings of muscles of the chest and upper extremity. The patient feels very unsteady and shaky, with noises in the head and giddiness. His memory is bad and failing. The patient suffered from nerve shock and panic at Spion Kop before being wounded owing to the alarming character of the surroundings.

CASE 3.—At Colenso on Dec. 15th a private of the 2nd Queen's Regiment was wounded in the left groin with a Mauser bullet over the kidney, traversing the abdominal cavity, causing subsequent hæmaturia and peritonitis, and travelling along the inside of the right thigh and becoming lodged on the under and inner surface of the right patella, whence the bullet was removed 14 days later. The loin wound healed in 10 days and the incised wound near the patella healed rapidly after extraction of the bullet. The injury was sustained while lying down with the right leg raised.

*Present condition.*—The patient complains of abdominal pain and pain in the legs and general weakness; he is incapable of continued exertion, bodily or mental. Formerly he was a smart soldier. The pains do not follow the course of any nerve trunks, and a general nervousness and weakness are noted of the upper as of the lower extremities. The patient is pale and thin with general vaso-motor impairment, and his circulation is sluggish. His age is 27 years.

CASE 4.—At Colenso on Dec. 15th a private of the 2nd Royal West Surrey Regiment whilst in the firing line was knocked senseless by the explosion in close proximity of a nine-inch shell. The patient was not actually hit by a portion of the shell, but by the turning up of the ground. Subsequently the patient had partial loss of power down the right side in South Africa, which afterwards got better, but since coming home on July 7th he has had another attack of unconsciousness accompanied with some loss of power more noticeable on the right side.

*Present condition.*—There is distinct loss of power on both sides of the body. The patient is very nervous and shaky, suffering from twitching and especially over the right side, giddiness, noises in the head, dimness of sight, and some deafness. The skin is cold and the muscles are soft and flabby; the reflexes are exaggerated with tremors of the hands and tongue. A general condition of neurasthenia is noted.

CASE 5.—At Spion Kop on Jan. 21st a private was in the firing line when he was shot in the left temporal bone, rupturing the tympanum and passing through the mastoid process. He was unconscious, but made a good recovery from the immediate effects.

*Present condition.*—The patient is now thin and nervous, with distinct loss of power in the upper part of the body. This is general evidence of vaso-motor impairment of the skin, muscles, and subcutaneous tissues. He has vertigo, headaches, flushing, and periods of stupidness and unconsciousness. His memory is bad and is getting worse. The patient describes his nerve break-down as due to shock and panic at Spion Kop, even before receiving his wound, as the result of heavy shell-fire and rifle-fire from the Boers, who were invisible and well under cover whilst the English troops were freely exposed. The patient is only 28 years old.

CASE 6.—At Spion Kop a private was wounded in the right thigh with a Mauser bullet. The wound occluded by a first and final dressing and the patient made a rapid recovery from the local wound.

*Present condition.*—The patient has weakness, pain, and tremors in the muscles of the back and both lower limbs. His gait is unsteady and he is incapable of sustained or arduous exertion. There is no apparent loss of power. The apertures of entry and exit have healed, showing only small scars. The body-surface is cold and there is want of muscular tone. He is in a dull, lethargic mental state.

CASE 7.—A private was wounded at Colenso on Dec. 15th in the abdomen and thigh with a Mauser bullet, escaping the abdominal cavity, since which date he has had constant lightning pains in the legs and shooting into the loins and he is now quite unable to do duty.

*Present condition.*—The patient has pain, hyperæsthesia, and tenderness over the superficial and deep nerve trunks. His movements are impaired and painful. The gait is unsteady. The scars of the bullet wounds are quite healed. There is general unsteadiness of speech with restlessness. The patient's age is 27 years.

CASE 8.—A private was wounded at Slingersfontein on Feb. 12th in eight places—the hip and back, the right leg and the left arm—the bullets traversing structures and the wounds healing rapidly, since which date he has suffered from general weakness.

*Present condition.*—The patient has general tremors of most muscles of the trunk and loss of muscle tone. The surface of the body is cold. The patient's speech is slow and hesitating and he is very nervous and shaky, and unfit for long-continued mental or bodily exertion.

CASE 9.—At Spion Kop on Jan. 24th a private was wounded in the right foot with a Mauser bullet and sprained his left ankle in falling. The bullet wound did well.

*Present condition* —The patient has loss of power and general tremors of both legs and lightning pains shooting up both legs and into the spine, especially the left leg. The patient is scarcely able to walk. There are twitchings and tremors about the face, which has an anxious and pinched appearance. He sleeps little owing to night pain. The muscles of the lower extremities are wasted and reaction of degeneration is noticed. There is some tenderness along the course of the great nerves.

*Remarks.*—The most noticeable features in our large military hospitals at present to be seen amongst South African invalids sent home for gunshot injuries are the almost total want of further surgical interference required, or any marked deformity, and the trivial nature of the entrance and exit apertures produced by the Mauser rifle bullet. In all the cases coming under my care I have had none in which the bullet-wounds were not healed, and although in many cases these were very numerous they have produced little or no deformity. The number of cases of injury from shell-wounds have been proportionately very small. The apertures of entry and exit of bullet-wounds in most cases are of a similar size and the scar is markedly small with no evidence of previous laceration or contusion of surrounding parts. The history of most of these patients immediately after the wounds is that of rapid healing by first intention with little or no suppuration; from inquiries made of patients the practice of antiseptic occlusion by first and final field dressings—whether that be on the field or in the field hospital—being responsible for the rapid healing and entirely successful results of the wounds themselves. Nearly all the cases observed had been subcutaneous flesh wounds, escaping or uninjuring bones and joints in the most marvellous way, although traversing tissues and cavities in close proximity to both. The lodgment of bullets in the soft or bony parts or in the cavities, necessitating removal, is an extremely rare occurrence, due, I take it, to the high velocity and shape of the projectile. The only cases I have seen here were lodged fragments from an exploded shell.

The clinical fact of most interest undoubtedly is the large number of cases of functional impairment of nerve sense and motor power, associated with psychical symptoms akin to nervous shock or those observed after railway accidents. These nerve symptoms do not bear any ratio to the extent or size of the wounds inflicted, but have been noted by me as being more common in injuries of the lower extremities and the head, and in cases that look originally to be not severe. The implication of nerves or their sheaths is not a marked feature and in most instances there is no local evidence of the bullet or its course having been near the track of a nerve. The effects are of sufficient importance to the military authorities and to the profession generally by reason of the necessity there is at present, and probably will be in the future, before the campaign in South Africa is concluded, of invaliding a large body of our best and most seasoned and experienced soldiers out of the service as unfitted for future service as soldiers, thus denuding our army of these experienced and gallant men. A large number of such cases have come before me, where after six months' or shorter periods of complete rest and every

care, the patient's nervous system shows no signs of recovering its former steadiness and there is nothing for it but to invalid them out of the service as permanently unfit.

Again, the prognosis in such cases is extremely unsatisfactory and no definite one can properly be given under a year, whereas the military authorities require it much earlier. The surrounding circumstances of modern gunshot wounds have apparently lost much of the seriousness recorded of these injuries in most text-books, and it would appear that the resulting nerve shock and injury to the nervous system are the most frequent sequelæ and at the same time difficult to prevent and treat, but those towards which, in my opinion, our efforts must be directed. The absence of local nerve lesion or injury producing the nerve change is significant, and the number of cases observed would not support the theory of these symptoms occurring in nervous persons only. It would be interesting to ascertain the actual numbers of men who have been invalided out of the service as the result of the South African campaign after bullet wounds and shell injuries whose permanent disability is purely shattered nerves. If possible the engagement in which the patient was wounded should be ascertained. Badly conceived projects by generals and commanding officers causing panic and disaster may then be found to be largely responsible for the development of such nervous cases quite apart from surgical injuries.

Aldershot.

# A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

**Nulla autem est alia** pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

## FRENCH HOSPITAL AND DISPENSARY.

### A CASE OF PLASTIC BRONCHITIS WITH ITS POST-MORTEM APPEARANCES.

(Under the care of Dr. A. VINTRAS.)

PLASTIC bronchitis is an exceedingly rare disease, but it has been recognised from very early times and Galen has mentioned that solid masses of fibrin may be expectorated.[1] In 1897[2] Clarke and Lister explained the real method of formation of the casts and showed that they were not due to the coagulation of blood. Up to the present time more than 100 cases have been recorded, even if allowance be made for some which were probably not instances of true plastic bronchitis. The case recorded below is almost typical of the disease. Hæmoptysis is a very frequent symptom, for it occurs in about one-third of the cases, and epistaxis has also been observed.[3] The treatment by inhalations of lime-water appears to have been suggested[4] by Kuchenmeister's observation of the solubility of diphtheritic membrane in lime-water,[5] though Dixon[6] had pointed it out long before. For the notes of the case we are indebted to Dr. Henry Dardenne, physician to the French Hospital.

The patient was a man, aged 68 years. He had been for seven years a soldier in the French army and had served all his time in Africa. Since then he had had no regular occupation. He was admitted into the French Hospital on August 18th, 1894, under the care of Dr. Vintras. He complained of cough, shortness of breath, hæmoptysis, and pains across the chest both in front and behind between the shoulder-blades. His illness began three months previously after allowing his clothes, which had been soaked through with the rain, to dry on him. He remained after this for two days in bed. Since that time he had been troubled with fits of coughing which were now and again very severe. A month previously to admission he noticed for the first time that after one of these fits his expectoration was tinged with blood, very thick, and almost gelatinous in consistence. He used to feel better for a day or two and then he would have another attack of coughing. These also became more severe. A week before admission he spat about three ounces of dark coagulated blood. He had for 12 hours a very severe pain across the chest in front, and this, together with a most distressing cough, lasted until he had expectorated some very thick and dark matter. His breathing then became much easier. He had before this always enjoyed good health. His habits had always been regular and he never drank to excess. There was nothing particular in his family history. His father died at the age of 78 years from cerebral hæmorrhage, his mother at 50 years of age from pneumonia. He remembered nothing about his grandparents. An uncle of his suffered from asthma and died from kidney disease. The patient was 5 feet 11 inches in height and was very emaciated. His weight six years before was 12 st. and on his admission it was only 10 st. His features were sharp and his complexion was sallow and pasty. His lips and ears were slightly cyanotic. His conjunctivæ were slightly jaundiced. The alæ nasi moved freely with each inspiration. The veins of the cheeks were dilated. His expression at times was very anxious and careworn. His temperature was normal. On examination his chest was found to be barrel-shaped. Its mobility was deficient. The sterno-mastoids stood in bold relief and could be seen to contract on inspiration. The vocal fremitus and resonance were normal. The chest was tympanitic in front. The right base behind was somewhat dull. On auscultation rhonchi and sonorous and sibilant râles were present over the whole chest both in front and behind. At the right base behind there was a respiratory murmur very indistinct and the vocal fremitus here was slightly impaired. The pulse was regular, full, incompressible, and beating at the rate of 100 per minute. The arteries were tortuous and indurated. The apex beat could be felt and seen in the sixth left intercostal space, half an inch outside the mamillary line. The heart-sounds could not be distinctly heard and neither the superficial nor the deep cardiac dulness could be detected owing to the emphysematous condition of the lungs. The teeth were decayed. The tongue was large and flabby, the papillæ were very prominent, and there were here and there a few superficial fissures. It was coated with a white fur except at the tip and edges. He had at times some difficulty in swallowing his solid food and this had increased within the last fortnight. He complained of no morbid sensations either before or after food. His appetite was good. His bowels were regular. The other systems appeared to be normal. On August 22nd, four days after the patient's admission, Dr. Dardenne was hastily summoned to the patient. He found him suffering from intense dyspnœa and he seemed to be on the verge of suffocation. His face was livid and covered with a cold perspiration. His eyes were bloodshot and looked as if they would come out of their sockets. The muscles of forced inspiration were acting powerfully and both hypochondriacal regions receded during inspiration. His breathing was about 60 per minute. His voice could scarcely be heard and the patient complained of pain and of a sense of pressure in the epigastrium and between the shoulder-blades. He had an incessant and harassing cough, and this would at times be relieved by the expectoration of a thick, sanguinolent fluid. Suddenly his face became quite black and he gasped for breath. His body was shaken with a severe fit of coughing. Tracheotomy appeared to be inevitable. However, with considerable effort he succeeded in expectorating a dark mass of the size of a cherry-stone, and this was followed by about two ounces of dark, semi-clotted blood. He felt instantly relieved and sank back exhausted. On floating the little black mass into water it turned out to be a perfect cast of a middle-sized bronchus with its ramifications. It was yellowish in colour and three and a half inches in length. For the next two or three days he spat some muco-purulent fluid and felt much easier. The respiratory murmurs were more distinct at the right base behind. The pains had disappeared and he expectorated no casts, only some dark blood and mucus. On the 26th he had another attack of dyspnœa, not so severe as the previous one, but he complained of the same severe pain in the epigastrium and between the shoulder-blades. On this occasion he expectorated about 15 casts. They were this time very soft and friable and much whiter than the first one. Peculiar adventitious sounds were to be

[1] De Locis Affectis, Book i., chapter i.
[2] Philosophical Transactions, vol. xiv.
[3] S. West: Practitioner, August, 1889.
[4] Wilson Fox: Diseases of the Lung and Pleura, 1891, p. 51.
[5] Oestreichische Zeitschrift für Praktische Heilkunde, 1863.
[6] Medical Commentaries, 1785, vol. ix.

heard before he had the last fit. Some authors have called these "bruits du drapeau." For a week after this he complained of no pain but of a feeling of lassitude and expectorated a sanguinolent fluid. On Sept. 2nd the patient had another attack and died suddenly. Artificial respiration and tracheotomy were of no avail.

*Necropsy.*—On post-mortem examination 15 hours after death rigidity and lividity were well marked. Both lungs were adherent and extremely emphysematous. The thoracic viscera were removed *en masse* together with the tongue, the trachea, and the œsophagus. On slitting the latter open a soft, rapidly growing epithelioma was detected about half an inch above the tracheal bifurcation. It extended for an inch above and below this and was firmly adherent to the trachea which was also compressed by the growth and at this point could hardly admit a small goose quill. A cast was found projecting from the right bronchus into the trachea and blocking the already strictured lumen of the latter. It measured two inches in length and was milk-white in colour. The mucous membrane of the right bronchus was intensely congested. Only one small cast was also detected in one of the tubes of the right middle lobe. Both lungs were crepitant but intensely congested. There was no trace of tubercles anywhere. The heart was enlarged and weighed 15 ounces. The valves were healthy and competent. The right ventricle contained some coagulated blood; the left was empty. The brain and spinal cord were congested and so were the liver and kidneys.

*Nature of the casts.*—When first expectorated they were either by themselves or rolled in the form of a little ball coated with thick muco-sanguinolent fluid. In colour they were pale yellow. The ends of the casts were bulbous, thus showing that they had extended into the infundibula, and the large cast could be inflated. On its surface there were some bulgings, this most likely caused by the more or less rapid deposit of fibrin. In consistence they were tolerably compact and to some extent elastic. On cross section concentric layers of a lamellar fibrillated structure were seen, and between the layers there were inclosed leucocytes, pus corpuscles, and some cylindrical epithelium—but very few blood corpuscles. Crystals of Charcot were not present. The casts were insoluble in water, but were soluble in lime water to a great extent. The casts, in my opinion, were made up of fibrin and not of mucus or of a coagulation necrosis of the bronchial epithelium, as was once thought. The alveolar vessels were congested. The treatment consisted in the intervals in the patient taking every three or four hours inhalations of lime water and internally a mixture of iodide of potassium and some expectorant. During the fits nitrite of amyl was tried but with no benefit. A mixture of A.C.E. and apomorphine subcutaneously seemed to shorten the attack.

*Remarks by* Dr. DARDENNE.—Plastic or fibrinous bronchitis is a very rare disease, and there are very few cases reported where its post-mortem appearances have been noted. In the above case I had every possible opportunity to observe its clinical characters, the deceased being at the time an inmate of the French Hospital. I have since met with another case in private practice.

## ROYAL NAVAL HOSPITAL, GREAT YARMOUTH.

### A CASE OF HYDATID DISEASE OF THE LIVER DISCOVERED BY THE PRESENCE OF DAUGHTER CYSTS IN THE MOTIONS.

(Under the care of Surgeon F. H. A. CLAYTON, R.N.)

THE cases are few in number in which an hydatid of the liver has discharged its contents through the common bile duct and still rarer are the cases in which recovery has followed, for in most of these cases, though some part of the cyst has escaped into the bowel, the remainder has required an operation for its removal or has been found post mortem. The comparative infrequency of hydatids in this country and the peculiar features in this case render it well worth recording.

The patient was a strong and healthy-looking man, aged 38 years, an attendant at the Royal Naval Hospital, Great Yarmouth. The only point of any significance in his previous history was that 12 or 14 years ago he was engaged in looking after some greyhounds. His illness commenced about Dec. 27th, 1899, when he was put upon the sick list, complaining of headache and diarrhœa, but with no chill or rigor. His temperature remained between 102° and 103° F. for four or five days, with a morning fall of about a degree, and showed some tendency to steadily rise. With this he was passing three or four pea-soupy motions daily; his tongue was furred, dry, and typhoid-like, and his liver was somewhat enlarged, but beyond slight pain and tenderness in the right hypochondriac region he complained of little. With liquid diet and the administration of an intestinal antiseptic all symptoms disappeared, although there was for some time a slight nocturnal rise of temperature. He returned to duty on Jan. 16th, 1900, three weeks after admission. On March 4th he suffered from considerable colicky pain about the epigastrium, shooting round to the right loin, but was free from this when seen on the next morning, although he was somewhat jaundiced. Jaundice increased during the day and the liver was found considerably, though uniformly, enlarged. Under treatment symptoms rapidly disappeared, and as he was anxious to return to work he was discharged to light duty on the 13th. On the 16th he relieved the gate-porter on a cold day without wearing a great-coat, although warned to avoid chill, and almost at once began to shiver and could not get warm. He was seen next day and complained of the shivering and of the same pain as before, but less severe, and also of anorexia and general malaise. His temperature was again 102° but fell to normal during the next three days, and the jaundice, which reappeared the day following admission to the sick list, was likewise evanescent. This time he was kept on the sick list for several days after apparent recovery and was first allowed to go home on the 30th. Here he partook of some cake and a glass of beer, and afterwards during the entire night suffered far more severely than before from a return of the same colicky pain, and on coming in next morning he was described as being bent like an old man. When seen this had again passed off, but, as before, his temperature was raised and a return of the jaundice soon made itself evident.

On searching the motion passed on this day for gallstones about a dozen cyst-like bodies were found which varied in size from a pea to a large bean. Some of them (apparently the larger ones) were ruptured, and all contained turbid fluid, and were white and membranous looking. A microscopical examination of the contents of one revealed numerous scolices with their rings of hooklets and several stray hooklets. These bodies were found on various occasions afterwards, usually smaller and unruptured, except after a similar attack on April 19th. With them much slimy gelatinous matter and fragments of white membranous material, apparently portions of cyst wall, had also been passed, and at times some had been bile-stained. Latterly few cysts had been seen and only the fragments of the wall. These were always of much the same size—that of a small pea. The liver enlargement had at this time (March 31st) increased but was still uniform; there was slight epigastric tenderness but nowhere any suggestion of a thrill or localised enlargement. His appetite remained poor and he displayed great susceptibility to draughts though he complained of no definite chilliness. He also had slight occasional epigastric pain and tenderness but otherwise remained well until April 19th, two days after being allowed out in the grounds, when he had another severe attack of pain all the afternoon. On this occasion he was seen to be pallid, collapsed, and covered with clammy sweat. An injection of morphia (one-sixth of a grain) almost at once relieved him. This attack was previously followed by transient jaundice. He passed a motion which was clay-coloured containing several more ruptured large cysts. His urine on one or two occasions after the attacks had been very thick with urates and contained much bile, otherwise it presented no abnormality, and there was no sign of respiratory, circulatory, or nervous involvement. After this attack the patient steadily improved and was discharged to duty on May 2nd. Although his liver is still much enlarged and he continues to pass fragments he is gaining flesh and remains well, and up to the present time (August) he has had no return of symptoms.

*Remarks by* Surgeon CLAYTON.—As to the nature of the case there can be little doubt that there was a degenerating cyst in the liver discharging into the alimentary canal. The constant sequence of events—pain resembling biliary colic, followed by jaundice, which was always transient—the effect of morphia—the uniform size of the fragments passed, and the rupture of the larger cysts, strongly suggest: (1) that the cyst was discharging through the biliary passages; (2) that at times portions became impacted, producing the colic; and (3) that by

spasm and irritation or by rupture and discharge of the irritating contents of a cyst into these ducts the jaundice was caused. It may be noted that on two occasions following the pain larger and ruptured cysts have been seen, and the temperature may also perhaps be explained by this rupture of the cysts. The short duration of the jaundice negatives the idea of pressure. The interesting points about the case were as follows: 1. The absence of suppuration, for although the cyst was in direct communication with the bowel no suppuration had apparently taken place in it—a fact, perhaps, due to the direction of the bile-flow and its antiseptic nature. Evidence of this absence of suppuration was afforded by the improvement in his general condition, a gain of 11 lb. in weight since May, by the absence of fever chills or sweating, and so on. Blood examinations carried out at various times with the Thoma Zeiss hæmocytometer show no leucocytosis. The rupture into the bile passages therefore must probably have been a result of pressure atrophy. Other points of interest are to be found (2) in the resemblance of the attacks to those produced by gall-stones and (3) in the possibility that without the examination of the motions this case would have joined the ranks of those undetected unless on the post-mortem table.

## CHILDREN'S HOSPITAL, BIRMINGHAM.

### TWO CASES OF CRANIAL MENINGOCELE TREATED BY EXCISION; RECOVERY.

(Under the care of Mr. LEONARD GAMGEE.)

THE successful surgical treatment of cranial meningocele depends chiefly on the absolute asepsis of the operation, but partly also on the strength of the child, for in this operation the two chief causes of death are septic meningitis and collapse. The use of Morton's fluid is much less frequent at the present time than it was when it was advocated for spina bifida by the committee of the Clinical Society of London.[1] At that time it was probably by far the safest method of treatment, but the surgery of the skull and the central nervous system has advanced greatly since then, and now in suitable cases excision gives much better results.

CASE 1.—A girl, aged six weeks, was admitted into the Children's Hospital, Birmingham, on March 31st, 1898. Growing from the back of the head was a tumour of the size of a large Tangerine orange. The overlying skin was normal in appearance and the tumour could be felt to possess a narrow pedicle, which passed through an opening in the mid-line of the occiput half-way between the posterior fontanelle and the foramen magnum. The swelling was translucent, was partly reducible, and became more tense when the child cried. The child was in other respects healthy and, according to the mother's account, the tumour was increasing in size. Operation was performed on April 1st. A longitudinal incision was made over the tumour and the skin was easily peeled off, the membranous sac, which was found to have a very narrow pedicle, being left intact. The sac wall having been incised it was found to contain clear fluid only and that a canal passed through the pedicle and communicated with the interior of the skull. The pedicle was ligatured with silk and the skin wound sutured. The wound healed by first intention and the patient was discharged from hospital in ten days' time. The child was seen four months after the operation and the condition then seemed to be perfectly satisfactory.

CASE 2.—A boy, aged 11 weeks, was admitted into the Children's Hospital on May 10th, 1900. Growing from the back of the head was a tumour having the same general physical characteristics as the one in the last case. The tumour was attached by a pedicle passing through an opening in the bone situated midway between the posterior fontanelle and the foramen magnum. The swelling was oval in shape and the greatest circumference was 10½ inches. On May 11th the following operation was performed. A skin incision was carried round the tumour a short distance from the pedicle and the sac was incised and found to contain nothing but clear fluid. Through the pedicle ran a canal communicating with the interior of the skull. The sac and the skin overlying it were next cut away. As the pedicle was too broad to be contained in one ligature the opening in the membranes was closed by a continuous silk suture and the skin edges brought together. The wound healed by primary union and the patient was discharged perfectly well at the end of a fortnight.

*Remarks by* Mr. GAMGEE.—The treatment of cranial meningocele by excision of the sac seems to hold out greater hope of success then does that by injection of iodine solution. When the tumour has a narrow pedicle the operation is simplicity itself and it is only when the pedicle is thick that any difficulty is experienced. Even then the difficulty is not great and can be overcome by leaving sufficient of the sac wall to make flaps, which can be sutured together. Unfortunately, it is in comparatively few cases of cranial meningocele that the patient is in a condition to withstand the shock of operation.

[1] Transactions of the Clinical Society of London, vol. xviii., p. 383.

# Reviews and Notices of Books.

*Préparation et Coloration du Système Nerveux.* (*Preparation and Staining of the Nervous System.*) Par BERNARD POLLACK. Traduit de l'Allemand par M. JEAN NICOLAÏDI. Paris: Georges Carré and C. Naud. 1900. 8vo, pp. 212. Price 5*s*.

PROFESSOR LAUNOIS provides a preface to the French translation of Dr. Pollack's well-known work, in which attention is drawn to the great advances made in the technical examination of the nervous system during the past 25 years.

In the opening chapter, on Taking Out the Brain and Spinal Cord, Dr. Pollack makes some practical observations which are of special value when these organs are to be submitted to subsequent histological examination. The methods usually employed in dissecting the brain so as to display to the best advantage its various parts are then described. The method of Pitres of transverse vertical sections is rarely used in this country, and yet it is undoubtedly very useful where the brain is to be microscopically examined. The Preservation of the Brain next occupies the author's attention, and here formol necessarily figures largely in the various preserving fluids. The methods of making dry brain preparations, which are very generally neglected in this country, are given at considerable length in Dr. Pollack's book. Laskowski's method with formol is recommended on account of its simplicity. The reviewer has had a considerable experience with Laskowski's method, chiefly using the earlier formula in which there was no formol. This latter procedure can be confidently recommended as producing a durable preparation which shows very little shrinkage and maintains a fairly good colour. The use of formol appears at times to spoil the colour and to increase the shrinking. Dr. Pollack next describes hardening fluids, the different methods of embedding, section-cutting, &c. The important subject of staining is considered under the examination of (1) the nerve-cells; (2) the myelin sheath; (3) the axis cylinder; and (4) the neuroglia. Special sections are given to Golgi's method and to Ehrlich's methylene blue method. The numerous methods are very clearly described seriatim, special attention being given to the more important ones.

The author very wisely follows the plan introduced by von Kahlden of setting out the various points in the methods with the approximate time required for each manipulation. In the section on Golgi's method all the various modifications are fully given. Nothing, however, is said about the criticisms, not always favourable, which have been passed on this method. A full account of the examination of the retina will be found in an appendix. Under the Staining of the Axis Cylinders the author points out and most will agree with him that the methods at present employed here are hardly as efficient as they are for the examination of the other elements. A special section is given to the peripheral nerves. A most useful chapter will be found at the end of

the book in which the author summarises his recommendations and names the methods which are employed in his own laboratories according to the object to be attained.

The practical histology of the nervous system is incomparably more difficult and, at the same time, more interesting than that of any other organ in the body. Hence it is that several guides to this subject have been published by those specially interested in it. It may be confidently stated than none are more efficient than the one which we owe to Dr. Pollack. It is almost indispensable in every laboratory where neuropathological studies receive any attention. The laborious work of translation by M. Nicolaïdi has been admirably done.

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*Canine and Feline Surgery.* By FREDERICK J. G. HOBDAY F.R.C.V.S., Professor-in-Charge of the Free Out-patients Clinique at the Royal Veterinary College, London. Edinburgh and London: W. and A. K. Johnston. 1900. 8vo, pp. x. and 152. Price 5*s*.

THE greater part of the material comprised in this volume has already appeared as a series of articles in the *Journal of Comparative Pathology and Therapeutics*, and it is fully worthy of being published in this more permanent form. The surgery of the lower animals has kept pace to a great extent with human surgery, and a cursory examination of this work will show that antiseptic principles are fully appreciated by veterinary surgeons. The directions for the preparation of the instruments and the operator's hands are all that could be desired. In animals as in man there are dangers to be avoided in the use of anæsthetics, and we learn that three deaths occurred in 800 anæsthetisations in dogs. It is especially risky to anæsthetise a pug on account of the shape of its nose. Very many operations are described, and they range from the opening of abscesses to the operation for strabismus and excision of the spleen. They are adequately treated, and we find many of the surgical appliances introduced within recent years, such as Makins's clamp and Murphy's button, figured and described. The work also contains a few operations which are not usually required in the case of human beings, such as an operation to cause the ears to droop and amputation of the tail. There are 76 illustrations. The perusal of this volume must prove of much interest to those who are only acquainted with the surgery of the human body.

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*An Atlas of Urinary Deposits and the Clinical Examination of the Urine.* By LINDLEY SCOTT, M.A., M.D. London: J. and A. Churchill. 41 plates and illustrations in the text. 1900. Pp. 49 + xli. and Index. Price 15*s*.

THIS should be found a most useful book both for the student, the resident medical officer, and the hard-worked practitioner. Examination of the urine has now become, it is to be hoped, a routine practice in every case whether simple or the reverse, and the student should be bred up to such examinations from his first day in the wards. Dr. Scott commences by giving a very clear account of the composition and physical properties of the urine. Next comes an account of its normal constituents and how to recognise them, which is followed by a description of abnormal constituents, of the bacteriology of the urine, and a note upon the examination of the urine in cases of life assurance. The first portion of the work ends with a tabulated description of the characteristics of the urine in various diseases. The plates, many of which are coloured, are accompanied by a clear description and a small key plan. They have all been drawn from actual specimens, with the exception of Plate XXX. which shows the forms of rare animal parasites. The frontispiece shows the variations in colour due to both normal and abnormal pigments.

## JOURNALS.

*The Quarterly Journal of Microscopical Science.* Edited by E. RAY LANKESTER, F.R.S., with the coöperation of ADAM SEDGWICK, F.R.S., W. F. R. WELDON, F.R.S., and SYDNEY J. HICKSON, F.R.S. Vol. XLIII., Part 3. London: J. & A. Churchill. July, 1900. Price 10*s*.—Almost the whole of this number of the *Quarterly Journal of Microscopical Science* is occupied with an elaborate essay by Mr. F. W. Gamble, M.Sc., and Mr. J. H. Ashworth, D.Sc., demonstrators and assistant lecturers in zoology, Owens College, Manchester, on the Anatomy and Classification of the Arenicolidæ. The authors show that there are three British species—A. marina, A. ecaudata, and A. Grübii. They give a detailed account of the structure of these species as well as of A. Claparedii and of A. cristata. Besides the external features usually relied upon by chætopodists they place great reliance on the characters of the otocysts, prostomium, and nephridia taken together. They give a good bibliography of the species and illustrate their memoir by numerous figures contained in eight plates. The second article is by Major Ronald Ross, I.M.S., lecturer on Tropical Medicine, University College, Liverpool, and Dr. R. Fielding-Ould, acting demonstrator at the Liverpool School of Tropical Medicine, and is entitled Diagrams Illustrating the Life History of the Parasites of Malaria. The diagrams are contained in two plates. Professor Ray Lankester contributes a short article on the Morphological Significance of the Various Phases of Hæmamœbidæ.

*The Journal of Anatomy and Physiology.* Conducted by Sir WILLIAM TURNER, F.R.S., D. J. CUNNINGHAM, F.R.S., G. S. HUNTINGTON, M.D., A. MACALISTER, F.R.S., and J. G. M'KENDRICK, F.R.S. July, 1900. Vol. XXXIV., Part 4. With six Plates and Figures in the Text. London: Charles Griffin and Co.—In this number Dr. Christopher Addison, of University College, Sheffield, continues his report on the Topographical Anatomy of the Abdominal Viscera in Man, especially the Gastro-Intestinal Canal. The article gives the results of numerous necropsies and deserves to be carefully studied by those who are frequently engaged in performing abdominal sections. Dr. Alexander Low, senior assistant in the Anatomical Department, Aberdeen University, gives a description of a specimen in which there is a rudimentary first rib along with 13 pairs of ribs and 25 presacral vertebræ. The subject was a male. Mr. Arthur V. Meigs contributes a paper read at a meeting of the Pathological Society of Philadelphia, upon Endophlebitis. Drawings are given of the appearances presented under the microscope. Mr. Walter H. Gaskell, F.R.S., in an article on the Origin of Vertebrates, deduced from the study of Ammocœtes, discusses the origin of the pro-otic segmentation and the meaning of the trigeminal and eye muscle nerves, and also describes the palæostoma or old mouth as well as the olfactory organ and the meaning of the first nerve. He further gives the evidence of prosomatic appendages in Ammocœtes as furnished by the course and distribution of the trigeminal nerve and finally considers the palæontological evidence which he believes demonstrates the Ammocœtes to be a Cephalopod. Two plates accompany this article. The part closes with the Proceedings of the Anatomical Society of Great Britain and Ireland.

*Journal of Balneology and Climatology.*—The July number of this journal contains, among other things, some good papers with reports of discussions thereon, such as those by Dr. A. S. Myrtle of Harrogate on Personal Experiences of Gout; by Dr. H. Laing Gordon on the Climate of Rhodesia; and by Sir Joseph Fayrer on the Hill Stations of India as Health Resorts. Speaking of the climate

and diseases of Rhodesia Dr. Gordon has something to say on the subject of the mosquito and the production of malarial fever. He has been unable to obtain definite information as to the presence of the anopheles in that country, but Dr. Patrick Manson has received specimens from British Central Africa and has little doubt that it will also be found in Rhodesia. Dr. Gordon considers that in all probability this particular mosquito does exist in the lower levels of Rhodesia, especially near to the Portuguese territories, but it is not, he thinks, at all certain that it flourishes in the elevated districts where malarial fever is undoubtedly also endemic to a certain extent. He quotes some evidence from Enkeldoorn in Mashonaland connecting the malarial fever with soil changes and decaying vegetable matter and with the overturning of virgin soil in farming. He also gives facts regarding the great prevalence of malarial fever among the police in Bulawayo, a prevalence apparently attributable to their improper housing and exposure during the wet season, as shown by the great improvement which ensued on these conditions being removed. The principal medical officer of Rhodesia asserts that the fever is rapidly becoming less frequent, if not unknown, in the towns and centres and that it has also altered to a much milder type. In the discussion which followed the reading of this paper several speakers took part. Dr. A. P. Hillier, who had been 13 years in practice in South Africa and had since been in close correspondence with several of the colonists in Rhodesia, described his experience. Although he cordially recognised that there was no more brilliant piece of original research work than that connected with the investigation of the malarial parasite and its history, he confessed that the occurrence of malaria in South Africa, and especially in Rhodesia, had caused him considerable speculation. Rhodesia, he explained, was a very thinly-populated country and had an area of something like 150,000 square miles, and some of the low-lying malarious districts were uninhabited. If the mosquito be entirely dependent upon man for its stock of the malarial parasite, how and where was it obtained? Certain it was, nevertheless, that casual visitants, such as sportsmen and explorers, to these low-lying districts contracted the malarial fever there from which they very soon afterwards suffered. These and other points, such as why the anopheles should be the only variety of mosquito which acts as the medium for its spread, require to be, as they probably will be, cleared up by future researches into the genesis and life history of the mosquito.

# New Inventions.

## CHINOSOL ANTISEPTIC EQUIPMENT.

THE Chinosol Hygienic Company, of 36, St. Mary-at-Hill, London, E.C., are introducing a series of neat cardboard cases containing an assortment of Chinosol preparations adapted for various antiseptic, deodorant, and disinfectant purposes. The box sent to us contains one bottle of pure Chinosol powder, one bottle of five-grain tablets, one bottle of eight-grain tablets, one bottle of bath and toilet tablets, and two tins of sanitary tablets each containing 45 grains of crude Chinosol. The series includes five boxes, No. 1 to No. 3 being for medical and surgical purposes, No. 4 for hygienic and toilet purposes, and No. 5 for the extemporaneous preparation of a concentrated disinfecting fluid. The powerful disinfectant properties of Chinosol have been established, and this salt possesses many advantages over other preparations, as it is freely soluble, practically odourless, and unirritating.

# THE COST OF MEDICAL EDUCATION.

IT was for several years our habit to place before our readers an estimate of the cost of medical education. We did this that those interested in arriving at the whole amount of this expense—which is by no means limited to such obviously necessary payments as fees, board, and lodging—might have some trustworthy materials before them on which to found a decision about joining a medical school. We obtained our original information from personal communications as answers to a schedule of questions placed by the aid of the deans and registrars of the various medical schools in the hands of a certain number of selected students, who were requested to furnish in the form of replies the data from which a general statement could be prepared for the guidance of others. Although the habits of the individual students necessarily had a great, even a preponderating, effect upon the replies the returns were sufficiently numerous to yield averages, and it was easy to see that the average man spent more money in the metropolitan centres than in the provinces, and that the standard of living and the cost of maintaining a given standard varied from place to place. The most complete statement that we received came from a provincial student, whose great economy in the matter of personal expenses could only be looked upon as an example to distinctly follow. It would have been unfair to expect that every student could live so frugally as to support himself and pay for rent and food (ten months), clothes, washing, recreation, fees, and even "incidental" and "unaccounted" expenses on the small annual sum of £65. But these headings will serve as a plan upon which we can discuss the subject generally—premising that only general information can be given that is worth anything, as a medical student as much as any other young man can make his expenses as large as he wishes, while he can only reduce them to the point that is permitted by the circumstances under which he is studying.

The cost of *rent* is the first item to be considered, and naturally enough is a charge which varies greatly with the locality. A student who occupies rooms in desirable quarters of London will pay from £2 to £3 a week on this account alone, whilst in many large provincial centres lodgings are almost as expensive as they are in London. But such rents are generally shared between fellow students, who make one sitting-room go with two or three bedrooms. We may take it that a student's rent for furnished apartments ought not to amount to more than one-quarter of the sum that he can fairly count upon receiving as income. If his parents can allow him £150 per annum (a large sum and one that is beyond the power of the parents of many medical students to set aside for one child) his rent should not be more than £1 a week. We are calculating that he will reside at his particular centre of education for about ten months during the year. In London it is not always easy to live near the hospital and obtain lodgings for much less than £1 a week, so that if a student can only expect £2 a week from his parents he is absolutely compelled to spend an imprudent proportion of his income in rent. Clearly none of this applies either to the students who live with their parents or those who are studying at a university for an arts degree concurrently. Nothing more definite on this subject can be said than that a careful man can live as a medical student on £80 per annum if he does not spend more than 10*s.* a week on his lodgings; but he will not always find it easy to obtain the lodgings, and every shilling above this weekly sum will make it very hard indeed for him to make both ends meet.

Referring to other centres, the rent of lodgings in Edinburgh is considerably less than in London, but in Dublin it is about the same as in the English metropolis. The cheaper quarters of Dublin are more than unpleasant to live in; they are positively dangerous in many places from their lack of proper sanitation. In Edinburgh there is a sort of residential club known as University Hall which affords facilities of social intercourse and mutual aid, as, for example, in the lending of books, which is practised systematically among the resident students. In addition to these amenities, the institution secures them lodgings at a very moderate monthly rent. Glasgow lodgings again run at about the same level, whilst in Birmingham rent is

cheaper still. The cheapest district of which we have any full information is Aberdeen, where both in the matter of rent and of food we have heard of an economy that is altogether exceptional, 3*s*. 6*d*. a week in summer and 4*s*. 6*d*. in winter, the additional shilling representing the cost of fuel to cope with the Scottish winter. And a shilling will not go far this year when spent in coal. In towns like Cork and Leeds the average rises above this limit, but 15*s*. a week is a somewhat high charge. In the Irish provincial towns the rent of rooms is very low, 5*s*. and 6*s*. being by no means below the average. A somewhat higher rent is asked, but still ranging about 10*s*. a week, in English provincial towns which are in possible touch with a medical school—such as Stockton, or Rugby, or Devonport; but residence in these involves constant railway travelling, and would hardly be adapted for the purposes of a student's career, unless some special considerations influenced the decision with which fine questions of comparative expense would not come into competition. The lodging accommodation afforded by residential colleges, hospitals, and the like institutions should be mentioned. But concerning these a word may suffice. The advantages of residence in a college are manifold, but they are chiefly of the intellectual and social kind. The cost is not less than that of private lodgings thriftily selected. There may also be in some instances impatience on the part of the student of the control imposed by the regulations, which are necessarily devised for the orderly conduct of such institutions. Nevertheless, the select society, and even the inevitable restraint, of such institutions are of great service, especially to young students, who have reason to dread nothing more than solitude and an irresponsible control of any considerable proportion of their own time. On the other hand, the cost of board and lodging in such institutions is not greater than the average cost of the same accommodation in private lodgings in their neighbourhood. A plan that involves no inordinate expense is to place a student in the house of a medical practitioner in the neighbourhood of the school which he is attending. It will be found that when the educational facilities thus placed in his way are taken into account, in addition to the mere commercial value of his board and lodging, the arrangement is usually a very economical one. The opportunities for doing this are, of course, not unlimited, but they are sufficiently numerous to merit mention here. A word of warning must be added. Every man who is willing to receive a student into his house and who offers advantages in the way of private tuition may not be capable of carrying out his promises. The modern curriculum is a severe one, and the preliminary scientific work is more arduous than it was even a decade back. We recommend that the advice of the dean of the school be asked before any bargain is entered upon to place a student with a gentleman who offers board, residence, and tuition to his charges.

Passing to the next heading, that of *food*, we may observe that here again nothing can be said precisely, but we can indicate the minimum sum that can be spent, and variation from this sum must be dictated by the student's purse. The prevalence of high prices or of low prices, as the case may be, affects such figures very little, and we may say that £30 is, we consider, in London the least sum that will meet necessary expenditure on good food. There will be no real economy for student or parent in the attempt to save in this item. We again refer only to ten months in the year. Food at the present moment, like everything in this country, is tending to become more expensive because of the rise in the price of coal.

Lastly, with regard to *fees*, the composition fee which is published by the various schools, and is in a sense a comprehensive charge, may easily be supposed to be more comprehensive than it is. A glance at our tables will show exactly how it is arrived at and what it covers. Broadly, it may be said to include all the professorial fees; but it does not include *books*—that is a matter of course. Equally it does not include *instruments*, and these two items together cannot be fairly written down at less than £8 a year in an ordinary case. We published in our issue of Sept. 1st, p. 646, a brief list of selected books with their prices which, or their substitutes, the student will require to read. He will, of course, follow the advice of the teachers of his school as to the value of any particular manual, while a much larger selection will be found in our Students' Number of Sept. 3rd, 1898, p. 657, *et seq*. Many circumstances may occur to falsify the estimate of an annual expenditure of £8 in books A successful student may largely supply himself with books by prize-winning, or access to a suitable library may minimise his personal requirements in this respect. With instruments, bones, parts for dissection, and the like, the case is somewhat different, and the expenditure under these heads can only be avoided at the expense of the student's education. A niggard hand in such matters makes therefore a grievous mistake, and this should be clearly appreciated at first, otherwise the temptation to undue parsimony will be supported by a grudging mind. Another item which is for very good reason omitted from the composition payment is the *charge for examination fees*. The reason of this will be at once apparent if it is only considered that the teaching bodies and the examining bodies are distinct, and that whereas the composition fee represents a sum payable to institutions of the former class the examination fees are receivable by institutions exercising the examining function. It will be hard to quarrel with an arrangement which is justified by the importance of paying the fee to the right person. Less obvious, but of the same kind, is the explanation of the circumstance that *tutorial* fees are not included in the composition. Many students pass through their curriculum by the aid of lectures and professorial instruction only. This is very possible when only pass examinations are attempted; but for competitive examinations additional instruction is sometimes an indispensable preparatory. Such additional instruction must of course be paid for, but its occasional character prohibits its inclusion with the indispensable items in the comprehensive payment.

To sum up, we have this position: The minimum sum that a student must be prepared to spend in London during a year on board and lodging is £60, though £50 will cover his expenditure in these directions in other centres, and less if he is careful. He can save 20 per cent. of this expenditure by living with a fellow-student to their mutual benefit. He must be prepared to spend £10 more at least in books, or instruments, or both. He will be almost the exception if he does not incur one or two extra liabilities in the way of special tuition during his five years' career. He will require another £10 a year as pocket money, and to these figures must be added his fees and the price of his clothes. We do not think that in London any young man should be asked to attempt to maintain himself entirely and pay all necessary fees and expenses of education as well upon a less sum than £100 a year. That many receive less, and, to their infinite credit, make it suffice and crown the self-denial of their youth with a success that is sweetened by the struggle to obtain it is undeniable; but many more of their fellow-students receive larger allowances and find them inadequate. Upon individual instances, with their innumerable reasons for special treatment, we do not attempt to dwell, and we desire our readers to remember that, roughly speaking, the figures which we now give for London are a little, perhaps 15 per cent., in excess of those that with the practice of economy would be found to apply to the provinces, Scotland, and Ireland.

If a student cannot command personally or by allowance from his parents £100 per annum, and look to receiving it regularly for at least four out of the five years of his curriculum, we consider that he is rash in these exacting days to embark upon our profession. These are almost identical with words that we have previously used in treating this topic, but no alteration in prices or conditions makes them less true.

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HEALTH OF BRISTOL.—At the meeting of the Bristol Health Committee held on Sept. 4th the medical officer of health (Dr. D. S. Davies) reported that during the past five weeks 202 cases of scarlet fever had been notified (against 41 for the corresponding five weeks in 1899), 51 cases of diphtheria (compared with 15 in 1899), and 32 cases of enteric fever had been notified (against 24 for the preceding year).

TYPHOID FEVER AND COCKLES.—At the meeting of the Exmouth Urban District Council held on Sept. 5th the medical officer of health reported that after a careful examination of the recent cases of enteric fever which were attributed to the consumption of cockles he was of opinion that in four cases the evidence was conclusive. He added that every legal measure had been adopted by the Exmouth sanitary authority to prevent the sale of such cockles, but there was some difficulty in taking legal measures, as the Public Health Act scarcely provided for such a situation.

# THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 15, 1900.*


RECENT events in Glasgow with regard to plague are instructive in several ways. The first fact that we are met with in the history of the outbreak is that the original cases of imported plague are not to be traced. The earliest known cases occurred among Glasgow people whose relation, if any, with persons or articles newly come from foreign countries cannot be determined. In other words, the enemy somehow or other eluded the outposts, which in this instance are provided by the system of medical examination of persons arriving at our shores from infected or suspected ports. The next fact is that once the occurrence of plague was established the whole forces of resistance at the disposal of the municipality of a great city, organised by one of the best public health departments which we possess, were at once brought into action. The procedure employed—viz., prompt hospital isolation, medical house-to-house visitation, formation of "cleansing areas," search (with the aid of bacteriology) for cases bearing suspicious similarity to plague, observations of "contacts," along with other administrative measures—was detailed in our last issue. The success that has met this procedure is not open to doubt. Two or three new cases, as was almost to be expected considering that the means of introduction of the plague is unknown, have occurred this week, but there is every reason to consider that the outbreak, if not at an end, has been brought fully under control.

How much can be done by sustained application of well-considered preventive measures when plague appears in a populous British community may also be judged from the account which we print elsewhere of the action taken in Sydney. In this city of nearly half a million inhabitants, including a small Chinese quarter, cases of plague have occurred week after week for nearly six months. Yet, owing to the determined efforts of Dr. ASHBURTON THOMPSON and his staff, the total number of plague cases which occurred during these six months has been scarcely more than 300, and by now the disease appears, for the time at any rate, to have been completely eradicated from the great Australian city. The circumstances of the outbreaks in Glasgow and Sydney give point to certain considerations as regards plague upon which we have more than once insisted. Good as we believe the arrangements made by the port sanitary authorities round our coasts to be, and watchful as we know the port medical officers and the medical department of the Local Government Board to be for cases of imported plague, it is almost certain, from the nature of the disease, that cases will from time to time escape their vigilance. There never were outposts that could not be penetrated. It is essential, therefore, that all sanitary authorities should be prepared for the possible appearance of cases of plague in their districts, whether brought from over-sea or by persons or articles coming from infected places within our island. A little forethought in this direction is the one way to prevent the alarm and panic which the word "plague," with all its seventeenth-century associations of marked doors, death-carts, and plague pits is liable to produce on the public. So far as we know it in colonial and European populations, plague is a disease particularly amenable to preventive measures to the exercise of which we have long been accustomed. Plague does not, like cholera or typhoid fever, become suddenly and widely epidemic through pollution of water-supplies; its ability to infect a population by passing from person to person is limited to a far greater degree than obtains, for example, in the case of scarlet fever; while the infection of plague is clearly not capable of being carried considerable distances aërially, as is that of small-pox and possibly also that of measles. The disease which furnishes to the physician the nearest analogy to plague as regards its method of spread is typhus fever, and the conditions which permit typhus infection—overcrowding, dirt, lack of air, and the like—also seem almost essential to the spread of plague. Rats and fleas, so much considered of late in this connexion, no doubt may in some cases play an important part in propagating the disease. But in this country the opportunities of the rat infecting man after all are not many, while the flea, to produce infection, must needs have come from a person or an animal whose blood contained the plague bacillus—a chance which, save in a severe plague epidemic, may for the common purposes of life fairly be disregarded.

Public health authorities, and therefore the public under their charge, have no excuse for panic, and it is welcome news that signs of panic are difficult to discover anywhere. But every preventive precaution should be taken. We are glad to note that public health authorities all over the kingdom are setting in motion the ordinary means for combating infectious disease, and that the public recognise that measures should be taken before, and not after, a local scare of plague has set in. Some isolation provision should be in readiness whenever such provision is available, efficient disinfection should be practicable, and suspicious cases should be sought out. Few of our towns have the resources of Glasgow, but save for the extensive isolation of "contacts" (which is perhaps the least essential of all the measures there adopted) every place should, if it has any claims to sanitary efficiency, easily be able to take the steps which are needed. Above all, it should be remembered that the best means for prevention of plague, along with a host of other diseases, is steady perseverance in that everyday sanitary work of a community which endeavours to ensure cleanliness, light, and pure air to its members. One other important lesson that may be learnt from the Glasgow experience is the extreme value of the coöperation of the medical practitioner with the health authorities. To the acumen of Dr. THOMAS COLVIN in recognising the suspicious character of the earliest cases Glasgow probably owes much. At this time it would be well in practice to be prepared to entertain the idea of plague, notwithstanding the absence of the disease from the locality where any patient presents suspicious symptoms, and the

lack of any history of his exposure to possible plague infection. If a spirit of precaution as to infectious disease should be the result of the outbreak of plague in Glasgow, that outbreak must be regarded—of course from the strictly medical point of view—as no bad thing for the nation. It is giving sanitary authorities everywhere an excuse for furbishing their weapons against epidemics and strengthening their resources; while it is bringing home to the populations under their charge the fact that terrible disasters can be averted by prompt measures, and particularly by being in readiness against the foe.

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THE movement in favour of hospital reform, which has at various times received much attention in our columns, has for its principal objects the improvement of the general administration of hospitals and the devising of means to prevent misapplication of their benefits. Financial questions may for the most part be safely left to the managing committees of these institutions, who have every incentive to practise economy; for in these days of manifold calls on the purses of the benevolent the stream of charity tends to become broken up into many channels and individual subscription lists feel the effects accordingly. Direct financial questions, however, do not often arise, the funds of most of these charities being excellently administered. The great trouble, as all our readers know, is what is termed hospital abuse. During the last 50 years hospitals have everywhere undergone numerous changes for the better. The dietary is liberal, the cooking is superior to that in many middle-class homes, the personal comfort of the patients is studied, the nursing arrangements are as efficient as those provided for the favoured ranks of society, and the medical men in attendance are, as a rule, the leaders of the profession in their locality in town and province alike. Moreover, class distinctions are now less obtrusive than formerly and the spread of education has imparted a certain amount of refinement to the behaviour of the poorest, so that contact with them no longer corrupts good manners. The natural result of all these causes is that a section of the public, which in other matters would resent being told that they were depending on charity, do not hesitate to betake themselves to the hospitals in time of illness, regardless of the fact that they are thereby competing with and displacing those who are socially much beneath them. The benefits of these institutions are in this way apt to be lamentably misapplied, and the weak spot of our hospital system is that such misapplication is possible. But the difficulty is inseparable from the existence of voluntary hospitals supported by charitable contributions. Charitable contributions are for the benefit of the poor, and if applicants who do not belong to this class are to be excluded inquiries into the circumstances of some patients must be made. If these inquiries are thoroughly prosecuted a great deal of abuse can be prevented; but the investigation into the social status of applicants for hospital relief is apt to be perfunctory, while it is very easily defeated by a little ingenuity on the part of the would-be patients.

Various methods have been suggested for the purpose of reconciling these conflicting interests, or at least of reducing the points of divergence. One of them, which has been put forward again and again with many specious arguments, would abandon the principle of support by voluntary subscriptions and would substitute State aid or maintenance by grants from the rates. Then everyone would have a right to demand from the hospital the assistance for which he had paid in proportion to his means and position. To this proposal there are many and obvious objections, but nevertheless some of the inhabitants of Aberdeen are anxious that the constitution of the Royal Infirmary in that city should be thus modified. Our Aberdeen correspondent writes that at a meeting of the "Citizens' One-Plank" Committee, held early in the month, a report on the proposed municipalisation of the Royal Infirmary was submitted by a sub-committee, in which it was contended that the system of voluntary support was wrong in principle since it allowed a large section of the citizens to evade their responsibilities towards the sick members of the community, while it also left the institution hampered for want of funds. A resolution was thereupon adopted to the effect that "this committee is of opinion that the only way of making adequate provision for the sick is by having the management of the infirmary placed in the hands of some popularly elected board with statutory rating powers at its disposal, and resolves to take whatever steps may be necessary to have that object realised." The "Citizens' One Plank" Committee is in ignorance, surely, of the meaning of its resolution. Our great hospitals are for the most part institutions of long standing, which have become what they are by a process of slow growth and development. They have not only their history but their traditions, they are capable of inspiring *esprit de corps* among those who are connected with them, and they are regarded not without pride by the people to whose needs they minister. They would not retain the same hold on local sympathies or on the popular mind if they became rate-supported institutions. No longer would they attract the money of the rich or the best efforts of the medical profession. They would fall under the benumbing influence of officialism.

Voluntary hospitals existed centuries before the care of the sick and disabled poor became a subject of national concern to be provided for from the public funds. Some of them have been largely endowed by private benevolence long ago, and the financial difficulties of others have seldom failed to bring forward friends who make increased efforts in their behalf and take proportionate interest in their usefulness. Without the aid of energetic individuals working in association and prompted by generous zeal for the relief of distress our hospitals could never have attained their present position. For undertakings of this kind have many sides, they must not be judged by merely commercial standards, and some of the essential attributes of a hospital, some of the features in the treatmen and after-care of the sick, would have but scanty recognition in the routine methods of a public department. For a hospital to be in all respects a success a certain kind of prestige is necessary. The community should feel proud of the treatment which the hospital affords, and the medical staff should be animated with an intent to keep the fame of the institution untarnished. No such sentiments would be present in the case of rate-supported hospitals which would be regarded with the critical eye that is always turned upon municipal

enterprise; which would be extravagantly managed—for are not public enterprises invariably more expensive than private?—and which would be unenthusiastically served. Again, under our present system those of the subscribers who gravitate towards the governing body are for the most part the right people, but who can suppose that this desirable feature of merit would count for anything in the turmoil and competition of municipal elections? The man who could pull the most strings might find himself chairman of the board of management of a hospital while completely devoid of general sympathy for science, of special sympathy for the sick poor, or of elementary knowledge of hospital management. We deplore deeply the fact that many of our voluntary hospitals are in grave financial difficulty, but we cannot think that the views of the "Citizens' One Plank" Committee of Aberdeen are right.

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IN the very happily-worded address delivered by Mr. EDMUND OWEN before the Canadian Medical Association on Sept. 13th, of which an abstract appears at p. 789, occurs the following sentence: "It is a good thing for a surgeon now and then to get away from pathologists and morbid histologists. In recent years there has been, perhaps, rather too much inclination to apotheosise the morbid anatomist, who, standing high in his suit of sable, looks upon the clinical surgeon as if his chief duty were to supply him with material." In THE LANCET of Sept. 1st, at p. 717, appeared a letter from Dr. POWELL WHITE defending the thesis that pathologists should hold a much more important position than they do at present, and a letter couched in similar terms appears to-day at p. 840. It is difficult—nay, even impossible—in a complex science dealing with a complex organism like the human body to decide which if any one department of that science is the chiefest. A steam locomotive cannot get on without fuel and water, but these two, though essential to its well-being, are no more so than wheels or cylinders. Further on in his address Mr. OWEN made the *amende honorable*, if such were needed, to the pathologist for the value of his work; but there undoubtedly is a danger in the case of the younger members of the profession of laying too much stress upon the results of post-mortem and microscopic or inoculation experiments. In the patient there is that mysterious $\pi$ which can never be evaluated—namely, the quality or condition known as life—and this is apt to upset all the results which should happen according to the teachings of pathology.

On the other hand, the light that has been thrown on disease by research in the laboratory of the pathologist is brilliant beyond our power to exaggerate, for to the patient and laborious investigations undertaken in the study of pathology must be assigned by far the greatest share of the credit for the modern enormous advances in surgery, and this is true not only of the surgery of the present day and of recent years, but equally of the surgery of the latter half of the eighteenth century when it may be said that scientific surgery had its beginning. And especially has the work of the bacteriologist been of untold value to surgery. The study of micro-organisms during the last 50 years has done much to assist in the diagnosis of disease, in rendering exact the classification of maladies, and in distinguishing between closely allied conditions, and in so far as treatment depends on diagnosis the aid afforded by the bacteriologist has been definite and valuable. In treatment itself the advances in bacteriology have been of less moment if only because the conditions existing in the human body cannot be reproduced in the laboratory. Nor can we measure the recuperative powers of the body. The *vis medicatrix naturæ*, the power which the body possesses of resisting and overcoming the invading microbe, is of more account in the struggle with disease than many of us are ready to think; and Mr. OWEN in his address called the attention of his hearers to the great tendency towards recovery which is manifested by so very many cases of tuberculous disease. This is most clearly to be seen in some varieties of tuberculous disease of bone in which, from the situation of the lesion, no direct operative treatment is possible. If, as Mr. OWEN points out, a case of caries of the spine is taken under treatment early a very excellent result with a minimum of deformity may be obtained. If the case is not seen till later deformity cannot be prevented, but the patient may recover, and enjoy, though with a permanently deformed spinal column, a long life free from disease. Three years ago a tendency to heroic measures showed itself in the treatment of some of these cases of extensive spinal caries, and the professional and no small portion of the lay press were flooded with wonderful and almost horrible illustrations of the procedures advocated for the "immediate" reduction of these "gibbosities." Yet, except for here and there a slight notice of the benefit derived from this treatment, the medical profession has received no definite statement from the introducers and advocates of this treatment as to the ultimate results of such severe procedures. The time has certainly come when the profession has a clear right to be informed as to the present condition of those patients who were treated three years ago by forcible reduction of spinal curvature. Whatever the result has been it should be published.

Not the least important part of Mr. OWEN'S address was concerned with the prophylaxis of tuberculosis, and certain words which he spoke to his medical audience ought through them to reach the public. The value to Great Britain of the prevention of tuberculous disease is very great, for it is one of our greatest scourges, while Canada has a high death-rate from this cause. If phthisis is to be prevented the work of prophylaxis must be accomplished by the public. It must not be regarded as a matter with which medical men only are concerned. They, indeed, have their portion of the work and this they perform when they lay down the rules that should be followed, but it is the business of the people themselves to carry out these rules. Without the earnest coöperation of the people the extinction of tuberculosis is impossible. On only one of the methods to this end did Mr. OWEN speak, but he laid down clearly the rule that, save in exceptional cases, those who are undoubtedly tuberculous should not take upon themselves the responsibility of parentage. This is only one of the methods of prevention of tuberculosis, but its obviousness should appeal to everyone.

# Annotations.

"Ne quid nimis."

## THE MANCHESTER SEWAGE PROBLEM.

THE Manchester Corporation have at last made up their mind to deal with the difficult problem of sewage disposal, and, to their credit be it said, have adopted a scheme which not only deals with the question for the time being but will do so for some years to come, and one which also meets the requirements of the Local Government Board. At the meeting of the council on Sept. 5th the Rivers Committee submitted two schemes, one based on the report of three experts and one based on the requirements of the Local Government Board. The cost of the first was estimated at £337,000, and of the second at £487,000. Sir Bosdin Leech, chairman of the Rivers Committee, introduced the subject in fulfilment of the promise to bring both schemes before the council. These plans (he said) had been prepared by Mr. Wilkinson, and it was for the council to decide which scheme was best suited for the disposal of their sewage with efficiency and economy so as to satisfy the Local Government Board and the Rivers Committee. He stated that the question was urgent and of supreme importance to the welfare of Manchester. Dealing with the experts' scheme he said that it was the result of 15 months' experimental work. The Local Government Board, on the other hand, insisted on the purchase and laying out of land at Flixton and Carrington and the provision of 50 per cent. more filter-beds, because the Board doubted whether the beds would retain their capacity and considered it imperative that the Manchester Corporation should be on the safe side whatever the cost might be. It was quite possible that not more than from 30 to 50 per cent. of the bacteria beds asked for at Carrington would ever be put down, because if in the progress of the work it was proved that the experts were correct and the extra beds were not necessary the committee were encouraged to believe that they would not be called upon to provide the full number of contact beds, and in that case there would be a saving of from £60,000 to £100,000. He further stated that any scheme which did away with the need for chemical precipitation effected a saving of £7000 per annum or a capitalised sum of £200,000. With regard to the cost incurred by Manchester in dealing with its sewage he pointed out that whereas Manchester spent 8*s*. per head of the population on works for purification of sewage, exclusive of sewers, Birmingham had spent £1 8*s*. 3*d*. and Wolverhampton £1 10*s*. 5*d*. At Derby, moreover, they were proposing to spend a sum which will add 4¾*d*. in the pound to the rates of that town. So far Manchester had spent £223,000. 4 per cent. on this (including sinking fund) represented ¾*d*. in the pound and assuming that the council spent a further £487,000 it would only mean a little over 1½*d*. in the pound, because a sum of £19,480 would meet the cost of interest and sinking fund. As an alternative they were threatened with a fine of £50 a day, or £18,250 a year, and at the end they would not be one step further on their way towards purification. The scheme devised to meet the requirements of the Local Government Board was cheaper in many respects than the alternative plan. The cost of dealing with the storm-water was £8000 less, and by spreading the works over a larger area the pick of the land was obtained and the excavation reduced. The increased cost of No. 2 scheme was owing to the provision of 92 acres of filter-beds at a cost of £264,500, instead of 60 acres for £194,700, as designed in No. 1 scheme. To the difference, £69,800, must be added the cost of laying out the land at Flixton and the syphon under the Mersey, £20,200, and the conduit, £22,600—in all, £112,600, which was practically the difference between the two schemes. One on the ground of safety provided land and works in advance of present requirements, the other land only. For maintenance, No. 1 scheme would cost £16,805 per annum and No. 2 would cost £20,000. This latter was roughly the amount spent at Davyhulme now for maintenance, including precipitation. The majority of the Rivers Committee favoured No. 2 scheme, but they would carry out loyally whichever scheme the council passed. Sir Bosdin Leech concluded his speech by stating that the Rivers Committee "want to have the question settled. Laboriously and long they have honestly sought after light and truth. They desire to see Manchester take her right position in the van of progress even in sanitary matters, and they ask their colleagues in the council to give them their assistance and decide which scheme should be adopted." An attempt was made to seek Parliamentary powers to carry out the culvert scheme but this was lost by 18 votes to 42. A resolution to carry No. 2 scheme or that of the Local Government Board was carried, and also a resolution asking the Local Government Board for their sanction to borrow under the Public Health Act of 1875, on security of the city rate, a sum of £487,283 17*s*. 4*d*. for the carrying out of the scheme.

## THE WINDOW, THE ROOM, AND THE SUN.

THAT light is an essential of health has long been recognised vaguely, but we are now gradually learning to some extent to what the health-giving properties of the sun's rays are due. The depressing and demoralising effects of darkness have been known from time immemorial, and the dungeon was perhaps the worst form of punishment to which a human being could be subjected. It is only comparatively recently that attention has been given to the necessity of providing an abundant supply of unfiltered light as well as air to our dwelling-places. A little over half a century ago many of the tenements of London were no better than dungeons from the point of view of the provision made for the entrance of light. Indeed, as is well known, glass windows were taxed, this action of the State being itself an incentive to darken the house. The question remains how best to secure the health-giving properties of light whilst excluding variable conditions of weather which would give rise to discomfort. In a paper upon this subject which was read at the recent meeting of the Tenth International Congress of Hygiene and Demography in Paris M. Trélat, a well-known authority on hygiene, gave it as his opinion that the best light for the house is the slanting light as opposed to the vertical and the horizontal lights. Of course the light proceeding in a straight line from the zenith could not be made available, while the light proceeding in a straight line from the horizon, as at sunset, similarly could not be utilised, besides which this light is not so pure, for, as M. Trélat holds, it is deteriorated by passing through successive layers of dust and vapours escaping from the soil. According to this view houses should be constructed to receive the rays of light at an angle of 30 degrees—that is to say, from a space corresponding with the mid-heavens—and, in order to obtain this light, houses should not be higher than two-thirds of the width of the street. If a street, for example, were 30 feet wide the houses on each side should not be higher than 20 feet. We are afraid that there are very few houses and streets complying with this standard. The suggestion is, of course, not to cut down our houses, but to widen our streets—a suggestion with which everybody would be in accord were it possible economically to carry it out. The question of the presence of microbes at different air levels must not, however, be ignored. Bacteriological experiments have shown that the

air near the ground is loaded with micro-organisms, the number diminishing as we ascend. The difference is most marked even in the case of a five-storey building, the air in the top storey being comparatively free from microbes, while that on the ground-floor swarms with them. This state of things would be altered if the sunlight were admitted properly on all floors, for sunlight is a powerful bactericide.

## THE FOOD PRESERVATIVES COMMITTEE.

DR. H. T. BULSTRODE, of the Food Preservatives Committee, and Mr. C. J. Huddart, its secretary, have visited Amsterdam, Hamburg, and various places in Denmark for the purpose of studying the dairying industry and the methods of transport of dairy produce, with special reference to the milk and butter supplies in Holland, Germany, and Denmark, and the butter export trade, in relation to the use or non-use of chemical preservatives. The committee and their secretary are proceeding to Ireland during the present week with a like purpose in view, and propose to give special attention to the south and west of Ireland, although visits will also be paid to the province of Ulster in the same connexion. The Committee will probably spend the rest of the month in studying the above matters in Ireland prior to reporting.

## TUBERCULOSIS IN THE RUSSIAN ARMY.

IN a paper compiled from official sources by Dr. H. K. Chtchepotiev and published last February in *Vratch* the sick-rate from tuberculosis in the Russian army during the octennium 1890–97 is said to have amounted to 4 per 1000 annually and the death-rate to 1·07 per 1000. Contrasting these high rates with the condition of things prevailing in other countries the author finds that the annual admission rate for tuberculosis in the German army is 2·3 per 1000 of strength, in the Austrian army 3·4 per 1000, and in the French army 5·0 per 1000, the death-rate varying from one-sixth to one-third of the total mortality from all causes. In the French army, according to Makiewicz, out of 1000 soldiers invalided for tuberculosis 116 had acquired the disease before enlistment, while 197 developed tuberculous symptoms during the first six months of their service and 278 during the second. In the course of their second year 254 more were found to be affected, leaving only 155 who remained immune until they had served two years and upwards. At Kiev Dr. Chtchepotiev found that during the period from January, 1895, to November, 1899, the number of admissions to the military hospital on account of tuberculosis was 527. Of these 111 men had less than six months' service and 32 less than a year. The second year furnished 127 tuberculous cases, the third 111, the fourth 95, the fifth 33, and the sixth and upwards 18. 12 of the young soldiers in the first series died in hospital, the remaining 99 being sent to their homes while still able to travel. Dr. Chtchepotiev is strongly of opinion that the great prevalence of tuberculosis in the Russian army is due to the entry each year of a number of recruits who carry in their systems the seeds of the disorder. Although a great many of the affected soldiers have tuberculous antecedents, hereditary or otherwise, it is also true that of the men attacked after serving a year or more fully half are strong and robust with nothing about them to suggest predisposition or the inheritance of a family taint. Unfortunately it is not always an easy matter to recognise incipient phthisis pulmonalis. A recruit who presents easily diagnosed symptoms of tuberculosis can to a certain extent be guarded against, but the harbourer of latent germs is a veritable *anguis in herba*. Living as soldiers do more or less promiscuously, sleeping in numerously occupied dormitories where they must inevitably respire air that has already passed through human lungs, it is of the utmost importance that every one of those lungs should be as sound as possible. In order to completely eradicate tuberculosis from the army the most strict inquiry into the previous medical history of every recruit should be insisted on and provided for, together with a far more searching examination of his physical condition than at present obtains. The small additional cost thus entailed would be recouped over and over again, even though but a quarter of the present loss of efficiency from a preventable cause were to be attained. As a palliative it would be well to provide for the early elimination of tuberculous subjects. At present the custom in the Russian army is to retain them as long as they can manage to carry out their duties. Incidentally Dr. Chtchepotiev confirms the fact already noticed by several writers, that Jewish soldiers are seldom the victims of tuberculosis.

## OVERLYING AS A PENAL OFFENCE.

CASES of overlying have hitherto been dealt with exclusively in coroners' courts, though the opinion has long been gaining ground that this mischievous practice ought in some way to be brought under the control of the criminal bench. Neither does it seem necessary for this purpose to have recourse to special legislation. The fact that death has been caused by overlying is in itself an evidence of parental negligence. There may be cases so purely accidental and so painful in the memory of the bereaved parents that further interference than that of the inevitable inquest would be injudicious. One which was recently investigated at Worship-street Police-court does not come within this category. The mother had already lost two other children in the same way and could not fail to be fully aware of the danger to which she exposed her children by taking them to bed with herself and of the very moderate amount of care which would provide them with a separate sleeping-place. It is not surprising that this woman was committed for trial at the Central Criminal Court. The case, whatsoever its issue, may help to quicken in some callous parents a sense of their responsibility and to arrest a far too prevalent cause of infant mortality.

## THE METROPOLITAN WATER-SUPPLY.

THE Water Examiner appointed by the Local Government Board has just issued his report on the condition of the metropolitan water-supply for the month of July. The Thames water, he says, was in good condition during the whole of the period. The amount of water passing down the river was below the average; at its highest flow the level was three inches and at its lowest nine inches below the average summer level. The daily average of water supplied per head was 40·59 gallons. In regard to the amount distributed by the different companies the Chelsea, Grand Junction, Kent, and New River supplied during July, 1900, a slightly larger amount per individual than during the corresponding month of the year 1899. The East London, Lambeth, Southwark and Vauxhall, and the West Middlesex companies supplied slightly less. With regard to the percentage of houses constantly supplied by the London water companies, the Chelsea and Grand Junction alone profess to give constant service throughout the whole of their district. The East London supplies 99 per cent. of its customers constantly, and this percentage is the same as it was a year ago. The Kent, Lambeth, and Southwark and Vauxhall companies do not give constant service in all cases nor has any improvement in this respect taken place in the case of any of these companies during the last year. The amount of constant service given in the case of the Kent company is still 94 per cent., the Southwark and Vauxhall 93 per cent., whilst the Lambeth company sti gives constant service to only 75 per cent. of its customers.

During the year some improvement has been made in the case of the New River company, which now gives constant service to 95 per cent. instead of 92 per cent. of its customers, an improvement of 3 per cent. The greatest amount of progress in this respect during the year has been made by the West Middlesex company which on July 31st last gave constant service to 97 per cent. of its customers, whereas on the corresponding date in the year 1899 constant service was given to only 89 per cent. This improvement is satisfactory. It seems strange that no less than 25 per cent. of the customers of the Lambeth Company should be content to receive water on the intermittent system. Any water consumer who feels aggrieved in the matter has legally the remedy in his own hands if he will only use it. Dr. T. E. Thorpe, the analyst appointed by the Local Government Board, gives an analysis of one specimen each of the water supplied by the metropolitan water companies. The analyst's report, we notice, is signed "pp. T. E. Thorpe, H. J. Helm." The analysis shows that the water drawn from the mains of the Lambeth Company contained the highest proportion of organic carbon. The water of the Lambeth and that of the Southwark and Vauxhall companies showed the deepest average tint of brown.

## RECURRENT LUXATION OF THE ULNAR NERVE.

THE *Boston Medical and Surgical Journal* of August 2nd contains an important paper on this rare condition by Dr. F. J. Cotton. Three original cases are recorded and the literature of the subject is exhaustively considered. Case 1.—A woman, aged 25 years, had much pain on using the arm after a fall on the elbow. A week after the accident the elbow was puffy and tender. A tender cord was felt in front of the inner condyle. On extension of the elbow it slipped back into the normal position of the ulnar nerve. Whenever the elbow was flexed to a right angle the luxation occurred and when it was extended reduction took place. An obtuse-angled splint was applied and a pad was placed over the internal condyle. After a fortnight there were little pain and less tendency to luxation. Only the pad and bandage were continued and light use of the elbow was permitted. The symptoms improved slowly and steadily, and the patient soon discontinued treatment. Four months later she could use the arm well, and complained only of occasional darting pains in the hands. On flexion of the elbow the nerve slipped only as far as the tip of the epicondyle. Case 2.—A girl, aged 11 years, fell on her elbow. Three days later she went to hospital with a slightly swollen elbow. Motion was slightly painful and there was spontaneous pain in the middle and ring fingers, but none along the distribution of the ulnar nerve. On flexion to 60° the nerve, which was abnormally tender, slipped a little in front of the epicondyle. An internal right-angled splint was applied. After three days the pain had disappeared and there were much less tenderness and perhaps slightly diminished range of luxation. The use of the splint was continued and massage was begun. Improvement was considerable, but luxation still occurred on flexion. Case 3.—A boy, aged 10 years, was seen three days after a fall on the elbow. There was a slight luxation of the nerve which did not pass beyond the tip of the epicondyle. The symptoms were local tenderness and pain on movement. The further history is not known. As early as 1851 Blattmann described a case of luxation of the ulnar nerve, but the first adequate accounts of recurring luxation are those of Lutz published in 1879 and of Zuckerkandl published in 1880. The cases form two groups, those for which no exciting cause is known and which may or may not be associated with symptoms, and the traumatic cases where there are almost invariably symptoms of greater or lesser severity. The trauma may be direct violence, muscular over-exertion, or simply habitual over-use of the elbow. In most cases, when a certain degree of flexion is reached the nerve moves inward to the tip of the epicondyle, and in the severer ones passes over it on to its anterior surface, only to return to its normal position on extension. Permanent luxation is very unusual. As to the symptoms of the non-traumatic or congenital form in one case there were marked weakness and considerable atrophy of the muscles supplied by the ulnar nerve, in a second case there were numbness and weakness sufficient to prevent work and to necessitate an operation, in a third there was fatigue on exertion, and in a fourth there were numbness and pain. In many cases symptoms beyond those arising from accidental pressure on the nerve are absent. As to the frequency of this form, Collinet on examining 500 patients found that in 13 the nerve was luxated on flexion, and in five of them on both sides. In the traumatic cases the symptoms (which are illustrated by the cases above described) subside more or less independently of treatment. In the non-traumatic cases the dislocation appears to be due to laxity or absence of the fibrous tissue which surrounds the nerve, and to the fact that the triceps spreads inwards on flexion of the elbow and pushes the nerve in front of it. In the traumatic cases some tearing of the fibrous tissues seems to occur either from muscular exertion or from the force of a blow. The treatment in these cases has been immobilisation with or without massage or operation to re-form the fibrous groove of the nerve. In some cases the fibrous tissues have been trimmed, the edge of the triceps has been hitched to the internal condyle, leaving the nerve beneath the bridge so formed, or a slip of fascia has been dissected up from the covering of the epitrochlear group of muscles and stitched to the triceps. These operations cured the luxation and such symptoms as depended on it, but in many cases conservative treatment gives quite as good results. Moreover, symptoms may be present, due to damage of the nerve, which cannot be benefited by operation.

## DANGEROUS GAS PENDANTS.

IF we do not go so far as to say that the "gas chandelier," or water-slide pendant as it is called, should be made illegal, we certainly think no prudent householder should put one of them into his house. It is never at any time by any twist of the imagination ornamental, it frequently occasions alarm, and in not a few instances it has been the cause of death. As everyone knows the principle of this "chandelier" is that of a water seal, which, of course, fails when there is no water in it. Few people remember to replace the water which easily evaporates in a warm atmosphere. Even supposing, however, that there is water in the sliding tube the chains supporting the weights which keep the pendant in position may easily get defective and thus the bracket may drop below the water seal and the gas be allowed to escape. This is probably what happened in the melancholy occurrence reported from Birmingham last week. It was shown that a water-slide pendant had become defective owing not to want of water in the tube but to the flimsy chain fittings. These defects accounted for the death of a man and very nearly for that of his wife. Both had retired to bed in good health, but before the morning they were poisoned with the escaping coal-gas which doubtless they had inhaled during most of the night. We have before recorded cases of this sort, and surely it is time that this clumsy contrivance known as the "chandelier" should be banished. It is a most dangerous fitting and quite unnecessary in view of the improved modern appliances which are now made for conveying gas from the supply-pipes to the burner. A good deal has been said of late against the increasing practice of carburetting gas, a method which raises the proportion of carbon monoxide

very considerably in illuminating gas. It is said that gas of satisfactory illuminating value could not be supplied without recourse to this plan, for not only are all kinds of coal more expensive than formerly, but the supply of the more bituminous varieties is distinctly running short. It must be remembered that coal-gas is poisonous under any circumstances, and that being so care must be enjoined in its use. But the fact that our present supply of coal-gas does contain much more carbon monoxide than was hitherto the case warrants more forcibly our argument in favour of the abandonment of the "chandelier."

## SIR GEORGE HARE PHILIPSON.

THE members of the medical profession in the north of England have decided to invite Sir George Hare Philipson to a complimentary dinner in celebration of his having received the honour of knighthood and in recognition of his services to the medical profession. The following committee has been formed to carry out the arrangements: Dr. G. H. Hume (chairman), Dr. D. Drummond, Mr. F. Page, Dr. R. S. Peart, Dr. W. C. Beatley, Dr. T. Beattie, Dr. J. Munro, Dr. J. Hedley, Dr. W. Robinson, Dr. J. Murphy, Mr. G. P. Elliott, and Professor T. Annandale. Honorary secretaries: Dr. W. Crump Beatley, 4, St. Mary's-terrace, and Dr. T. Beattie, 3, Ellison-place, Newcastle-upon-Tyne. The dinner will take place on Tuesday, Oct. 2nd, at 7 P.M.; tickets, £1 1s., including wines. Those desirous of being present are requested to apply to either of the secretaries before Sept. 22nd.

## THE TREATMENT OF ACUTE ALCOHOLISM BY LARGE DOSES OF DIGITALIS.

THAT acute alcoholism can be treated in robust and otherwise healthy subjects by large doses of digitalis with apparent success is well known, but the perils of the treatment are obvious and its value is doubtful. In the *Journal of the American Medical Association* of August 11th Dr. Henry P. Loomis of New York revives a discussion of the subject by detailing some cases. During the spring of the present year Dr. Loomis, while on duty as physician to the alcoholic wards of Bellevue Hospital, New York, used the tincture of digitalis in half-ounce doses in a series of ten cases of acute alcoholism. These were selected so as to include different classes of individuals—the strong and the robust, the weak and the anæmic, the young and the old. In the treatment of patients suffering with delirium tremens the routine practice was to give a half-ounce dose of the tincture of digitalis every four hours till three doses were taken. "If the patient became quiet and the delirium disappeared the remedy was stopped before the third dose. If not another series of three doses six hours apart was ordered. In the cases that showed the best results not more than three doses were necessary. The guide to the repetition of the dose was its narcotic effect." No marked dropping of the pulse was noted in any of the cases, but in the successful ones the pulse increased in force and became stronger, fuller, and more regular after the first dose. The cold, clammy perspiration disappeared, the skin became warmer, and the patient went to sleep. In three out of the ten cases treated the result was so pronounced and so quick that there seemed to be no question that it was entirely due to the effect of the digitalis. In some of the cases the remedy was a failure. Two cases died, one of these being complicated with acute articular rheumatism. From the experiences gained in the ten cases at Bellevue Hospital, as well as in six cases treated previously in the same way, the following conclusions are drawn by Dr. Loomis. The cases suitable for treatment with large doses of digitalis are the strong, the robust, and those in early adult life with no complications, and those with violent delirium. In such cases the results are exceptionally favourable. The patients become quiet and go to sleep with a certainty and promptness obtained by no other method. The remedy should not be adopted in the case of chronic alcoholic subjects, in those of middle or advanced life, or in those with anæmia and bad nutrition, as in such cases the remedy may be useless or even harmful. One fact which showed the marked benefit derived from the treatment was that when the patients recovered and awoke from their sleep they were in such an improved state that they were able to leave the hospital on the same day, whereas ordinarily there was a delay of two or three days before this was possible.

## ARE COPPER SALTS POISONOUS?

IN a paper upon this subject read before the British Association of Science at the Bradford meeting Dr. T. W. Hime sought to justify the use of copper salts for preserving the green colour of vegetables apparently on the ground that Nature herself placed copper in many of her products. Indeed, Dr. Hime asserted positively that there was no sufficient ground for the prohibition of the sale of coppered vegetables any more than for the prohibition of the innumerable kinds of fruits, vegetables, shell-fish, cereals, mineral waters, wines, and animal flesh which naturally contained the metal in some form. If the latter drastic arrangement were attempted, he added, absolute and general starvation would be the inevitable result, so widely was the natural presence of copper in articles of food extended. On these grounds Dr. Hime might justify arsenic as a useful food preservative, since it is now known to be a normal constituent of the body, but of course, like copper, in infinitesimal amount. We do not object to the plan of preserving the colour of peas by copper, but we do object to the consumer not being made plainly aware that such is the case with the provisions he consumes. Some people like their meat roasted, others do not care a tittle whether it be baked or gas-cooked; but it is clearly deception when a person is told that a piece of beef has been roasted which instead has been cooked in the gas-oven. Neither does Dr. Hime seem to pay special regard to the important question of personal idiosyncrasy. If the quality of our food-supply is to be State-protected with any degree of efficiency this is a point which must not be lost sight of, for in all the attempts to keep up the health of the community all sorts and conditions of men must be reckoned with. We hope to see very soon a statute which shall definitely control all methods of colouring and of preserving food.

## A CASE OF WERNICKE'S CONDUCTION-APHASIA WITH NECROPSY.

DR. HOWELL T. PERSHING has published in the July number of the *Journal of Nervous and Mental Diseases* a case illustrating the rare and interesting condition described by Wernicke as "conduction-aphasia." Dr. Pershing regards the present case as perhaps the most typical instance hitherto recorded of true conduction-aphasia. The case was that of a man, aged 45 years, of robust health, who was brought to hospital in an unconscious condition on Nov. 19th, 1897. The history of the patient was that two days before, while driving, he became unconscious and fell from his waggon into the bed of a small stream where he lay for about 36 hours before being found and removed to the hospital. On examination he was completely unconscious, the right arm and leg were rigid and tremulous, and the head and eyes showed slight conjugate deviation to the right. The pulse was normal, the respirations were 20 a minute and stertorous, the temperature was 99·5° F., and the head was free from signs of injury. A diagnosis was made of a vascular lesion (probably syphilitic thrombosis) in the left hemisphere and the patient was treated with iodide of

potassium and inunctions. In the course of a week consciousness completely returned, "but the man's talk was a mere jargon which he shouted in a loud voice. There was also some word-deafness; he generally failed to do what he was told, but responded readily when shown by a gesture. No paralysis could be detected. During the second week in the hospital the word-deafness disappeared and no sign of a cerebral lesion then remained except jargon-paraphasia and certain associated defects." Some weeks later he apparently understood any question that was asked him and would make an energetic attempt to answer it, but his talk was never intelligible. He could use the terms "Yes" and "No" accurately in response, "but on attempting to express himself at any length, although the first few words were often intelligible and apparently appropriate, he soon passed into a fluent but incomprehensible jargon in which only here and there a correct word could be heard. ..... He was entirely unable to name familiar objects. On being asked to read aloud from a newspaper ..... his reading was markedly paralexic; a few short words were correctly pronounced and the pronunciation of others bore an obvious resemblance to the correct sounds, but these were so mingled with unintelligible sounds that the whole conveyed no meaning to a listener. The simplest directions given in writing elicited no response. ..... He wrote his own name quite legibly, only putting an extra 's' on the end. He was absolutely unable to write anything else, either spontaneously or at dictation. ..... Acuity of vision was good, there was no hemianopia, he had a keen eye for all that went on about him, and often laughed at another patient whose appearance and actions were comical." Two months after his first attack he had a second attack (Jan. 23rd), during which he died. The necropsy revealed an oval spot of softening, 18 by eight millimetres, in the left cerebral hemisphere immediately above the fissure of Sylvius and two and a half inches (6 centimetres) behind its vertical branch. The softening extended an inch deep into the brain substance and probably destroyed communication between the first temporal and third frontal convolutions.

## LANCASHIRE ASYLUMS.

SOME interesting statements are made in a report just presented to the Lancashire Asylums Board by a deputation from that body appointed to visit the asylums on the continent and to make recommendations as to the building of a sixth Lancashire asylum. One fact mentioned is the serious increase in the number of patients of late years. In 1859 the total number was 1587, but a gradual increase has now brought the number to 8665. Before the end of next June it is hoped that a portion of the Winwick Asylum will be opened for 1000 patients, to be followed in June of the following year (1902) by the opening of the other portion of the building, also to accommodate 1000 cases. The cost of land, buildings, and furnishing will reach £400,000. The deputation, consisting of Alderman Jenkins of Salford, Dr. Cassidy, superintendent of the Lancashire Asylum, and Dr. Wiglesworth, superintendent of the Rainhill Asylum, visited asylums in Germany, Belgium, and France. They were struck with the large proportion of medical officers in the German as compared with the English asylums, being about one to 105 in the former and one to about 300 in the latter. They consider the English asylums to be under-officered to such an extent that there are difficulties as to the study of individual cases. They found also in the German asylums much more evidence of active scientific work than is usual in this country. They were favourably impressed with the "villa colony system" as they saw it in Germany and definitely recommend it for the projected new asylum, which they think should be entirely for epileptics and imbeciles, preference being given to those capable of a certain amount of work so that the beneficial effects of colony life may receive full scope. They see no necessity for a large central institution and recommend that no building should contain more than 50 patients, while the majority should have from 25 to 40. Also that the new asylum should accommodate 1000 patients with provision for extensions. They think that 250 acres would suffice but advise that 300 be acquired. There is every disposition to meet the requirements of the case, and no time will be lost in making the new asylums ready for patients, for there is great difficulty in finding accommodation for the new cases, for the four asylums now occupied have been "full and congested" for a long time. It would only be reasonable to look a little ahead and keep the accommodation somewhat in excess of present requirements, which position will scarcely be gained even when the sixth asylum is completed.

## A FRIEND OF SCIENCE.

THE education and research fund of Guy's Hospital Medical School has received from "A Friend of the Hospital" the sum of £5000, the interest of which is to be used to "increase and spread the knowledge of the means of preventing and treating disease." The friend of the hospital shows himself to be a true friend of science.

## PROPOSED SMALL-POX HOSPITAL AT BARRY.

So long as the English system of vaccination is, for the the great majority, vaccination in infancy only, so long must public health authorities be prepared for the occasional occurrence of epidemic of small-pox among the adult or adolescent population. Precautions to meet such epidemics are especially needful in the case of towns where many workmen are in close relation with each other through common employment, and at seaports where risk of introduction of small-pox is considerably greater than is the case of inland towns. Barry is a town to which these considerations specially apply, and it is satisfactory to find that the necessity of making isolation hospital provision for small-pox is there generally recognised. It appears, however, from local newspapers that the character of the proposed hospital is being made the subject of a warm, if not an acrimonious, dispute. Much opposition, in which some members of the profession have joined, is being made to the proposal of the town council to erect a permanent building at the cost of some £9000, under loan sanctioned by the Local Government Board. Such a hospital is objected to on the ground of expense, and it is urged that small-pox isolation will so seldom be needed that "temporary" provision is all that is necessary. We have sympathy with the movement to keep down the growing burden of local rates, but on the general ground of sanitary efficiency, and apart from local considerations of a particular case, we should certainly hold a scheme for erecting a permanent building as the more worthy of support. "Temporary" hospitals for small-pox are in many ways undesirable. Either they are "temporary" in the sense that everything is left to be done at the last moment in face of an epidemic—with what inadequate and objectionable results outbreaks such as those at Warrington and Gloucester have repeatedly shown—or satisfactory provision is made beforehand, as in a permanent hospital, the difference being that the buildings are of corrugated iron and not of brick or stone. In the latter case, even if the first cost were reduced by half, where is the economy to the ratepayer? Not at the beginning, for he will have to pay the whole cost of the hospital out of current rates and cannot spread it over a long period of years by loan. Later it is inevitable that considerable sums must be spent in keeping the temporary building in serviceable condition, and

finally, when it is past use there will be nothing to show for the expenditure and the whole affair must be begun again. As to the long periods for which it is said that the proposed hospital would be unused, we also have some doubt. There are epidemic diseases besides small-pox which from time to time tax all the resources of a district, and on such occasions even a liberal provision of beds at a hospital for ordinary infectious diseases often proves quite inadequate.

## OUR FRIENDS AND OUR FOES AMONGST MICROBES.

STERILISE, sterilise, would appear to be the teaching of bacteriology in regard to what we breathe, what we eat, and what we drink. But it is a moot question whether in the main life is best preserved by killing on all sides the ubiquitous microbe. Certain it is that some foods lose their important dietetic properties on being sterilised, and we have yet to learn whether there are not microbes in the air playing a rôle in the process of respiration. And if in air why not in food and drink, playing a rôle in the processes of digestion? Some illustration of the unsatisfactory state of our knowledge of these important questions was given in the first and third sections at the recent meeting of the Tenth International Congress of Hygiene and Demography in Paris. To quote a single example, engineers on the one hand, during the discussion of certain papers on the question Should all drinking water be sterilised? rose and challenged the bacteriologists to say once and for all whether or not all bacteria were injurious. The conflicting opinions contained in the answers of the different bacteriologists left the interrogators in doubt, but certainly justified their question. One speaker put the position very pertinently when he reminded his audience that, when Simon de Montfort during the Crusades had captured a town, and was asked the question as to what should be done as all the inhabitants were not heretics, but some of them good Christians, he replied: "Massacre them all and God will recognise His own." In the present state of our knowledge this seems exactly to define our attitude in regard to the treatment of organic life existing in air, food, and water. The fact that micro-organisms are being employed now with great profit in many industrial pursuits, and more important still in the satisfactory disposal of offensive human excreta, only adds perplexity to the question how far sterilisation can safely go. Doubtless it will be shown that in order to prevent disease set up by organisms we must pick out a means of killing only that species which is pathogenic. Failing this we are probably safest in adopting the plan of Simon de Montfort. We burn the wheat as well as the tares because it must be confessed for the present that we know no better; we cannot exactly differentiate the good from the bad.

## ANTI-VIVISECTIONISTS AT CARDIFF.

ALTHOUGH the public health laboratory organised by the borough of Cardiff and the county of Glamorgan has been established only about a year it has already done good work and has thoroughly justified its existence. The possession of a licence for the performance of experiments upon animals has, however, drawn upon it the opposition of a section of the inhabitants of the town and neighbourhood, and at a meeting held at Cardiff last week which was called at the instance of the British Union for the Abolition of Vivisection the following resolution was passed:—"That this meeting pledges itself to demand and exert itself to obtain the withdrawal of all licences for the protection of vivisection in Cardiff." We should hardly have deemed it necessary to direct attention to this gathering but for the extraordinary manner in which the meeting was conducted. Lady Windsor occupied the chair and at the outset invited those present to listen to the speeches about to be made with open minds, and it almost appeared as though for once there was to be at an anti-vivisection meeting a fair and square discussion. This anticipation was unhappily falsified by the event, for after Lord Tredegar and others had spoken in favour of the resolution, Mr. T. Garrett Horder asked to be allowed to make a few remarks but was promptly told that the meeting was called to forward the aims of the society for abolishing vivisection and not to hear any general discussion. With a meeting in such an exclusive humour as this it is not at all surprising that the suggestion of a reverend gentleman was accepted with enthusiasm when he proposed that ministers of religion be asked to bring to the notice of their congregations the petition to the Home Secretary asking that the Cardiff licences should be revoked. According to the local newspaper reports the Mayor of Cardiff was among the audience and Lord Tredegar is a prominent member of the Monmouthshire County Council. These gentlemen, it is to be hoped, will urge the claims of the petition before the important public bodies upon which they sit. County councils and corporations are in the habit of discussing matters brought before them and the British Union for the Abolition of Vivisection might gain some information from the debates.

THE representative board of the British Dental Association desire to remind members of the medical profession engaged in researches for the advancement of dental surgery that they are prepared to receive applications for grants in aid of such research. Applications for sums to be granted at the next annual meeting must be made on the printed forms to be obtained of the honorary secretary at the office of the Association, 40, Leicester-square, London, on or before Dec. 31st next.

THE first session of the Medical Faculty of the University of Birmingham will open on Monday, Oct. 1st, when an address will be delivered by Professor B. C. A. Windle, M.A., M.D. Dub., Dean of the Medical Faculty and Professor of Anatomy in the University.

A TELEGRAM from Sir H. A. Blake, the Governor of Hong-Kong, to Mr. Chamberlain, received at the Colonial Office on Sept. 10th, 1900, states that four cases of bubonic plague, with four deaths, occurred last week.

THE death is announced, at Constantinople on Sept. 2nd, of Mr. Richard Sarell, M.D. Edin., M.R.C.P. Lond., one of the best known surgeons in the Levant. He was aged 70 years.

# THE WAR IN SOUTH AFRICA.

THE war is moving to its inevitable end and with it one of the most difficult and hard-fought campaigns in which this country has ever been engaged will take its place in military history. Events have of late been proceeding with something like dramatic rapidity. Ex-President Kruger is reported to have arrived at Lorenzo Marques and the Boer forces are retreating and crumbling away, so that things must be nearing an end. Lord Roberts is apparently of that opinion, for he has gone to Pretoria, to meet the South African Commission, which arrived there on Sept. 8th. The commission has already examined Sir William Thompson, Dr. Kendal Franks, and Lord Roberts. The commander-in-chief's evidence, as reported in the *Times*, dealt at length with the rapidity of his advance. Due supplies of food and ammunition had to be provided, and as this was the first consideration in war the transport of other articles was necessarily restricted. There is no need to enter into any discussion of a controversial character

at the present moment in regard to matters medical; it would, indeed, be futile to do so until all the facts are known. We shall learn in due time how far it would have been possible to have foreseen and prevented the occurrences which took place at Paardeberg and Bloemfontein by the timely provision of sanitary arrangements. Unfortunately it is one of the contingencies of war that mobility—especially in fighting with ubiquitous Boers—is essential to success and that an enemy will not suspend its military operations until the other side is ready to begin. Were it otherwise there would be little or no difficulty in perfecting all the necessary hygienic arrangements.

Meanwhile, we are glad to say that the British troops are healthy and in excellent fettle and that the war is being prosecuted with vigour. So long, however, as the Boer generals can muster any forces in the field we may expect occasional raids and surprises and attempts at cutting lines of communication. An army of occupation may have a lively time of it at first, but these attempts will gradually decrease until they cease altogether.

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### THE TREATMENT OF PRISONERS BY THE BOERS.

The War Office issued on Sept. 12th despatches giving an account of the evidence before, and the findings of the Court of Inquiry ordered by Lord Roberts to investigate the treatment of the British prisoners of war at Pretoria. Lord Roberts in his comment on the report states that the officers were fairly well treated, but that the men were badly treated. The treatment of the prisoners belonging to Colonial corps raised in South Africa Lord Roberts considers to have been opposed to the usages of civilised warfare in that they were treated as criminals, and the same remark applies to British subjects resident in the Transvaal who were treated in a like manner because they refused to take the oath of allegiance to the Republic. Lord Roberts also considers that the inhuman treatment of the sick prisoners throws the greatest discredit on the authorities at Presoria, since they must have known that proper hospital accommodation and equipment had not been provided, that suitable food and medical comforts were not forthcoming, and that the supply of medicines and medical comforts was wholly inadequate. The commander-in-chief's conclusions form a severe indictment of the Republics, but the documents which are included in the despatches, and to which we shall make further reference, appear to warrant the conclusions.

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### SOME NOTES ON THE CAMPAIGN IN AUGUST.

BY ALFRED D. FRIPP, M.S., F.R.C.S.,
SENIOR SURGEON TO THE IMPERIAL YEOMANRY HOSPITAL.

This is a windy month, therefore there is much dust and discomfort; also it is so cold at night that occasionally the water freezes in the vessels inside the tents. There is a welcome lull in the work which the hospitals are called upon to do.

There are no fewer than four Yeomanry Hospitals at work in South Africa now and before very long there will be a fifth. This base hospital, which has had accommodation for 1000 beds since July 1st, has detached part of its staff, including Mr. Turner as medical officer and one of the surgeon's dressers and three of the nursing sisters, to take over the management of the hospital at Maitland camp with 25 beds, and the establishment will shortly be increased in view of the remassing there of the Yeomanry prior to their departure for England. The Yeomanry Field Hospital is established at Pretoria and has similarly detached part of its staff, including Mr. Openshaw, to manage a hospital which has been opened in one of the buildings in that town and which, according to a telegram from Surgeon-General Wilson, "is doing excellent work." Lastly, the staff of the new branch hospital (intended originally for Pretoria, then allotted to Johannesburg, and now re-allotted to Pretoria) have been lodging with us since they arrived in batches on July 20th and 27th. To-day the first half go forwards and will be picked up at Bloemfontein by Surgeon-Major C. R. Kilkelly, who will escort them to Pretoria, where Dr. Barclay Black is already at work with one of our own sergeant-majors scheming out the sanitation on exactly the same lines as have proved so successful under their guidance here. There will eventually be accommodation for 400 beds in this Pretoria branch. The staff consists of 40 nursing sisters (for whom sleeping-room has been found here by emptying one of the huts of the patients), nine doctors, and 80 orderlies (who have been put up in some of our tents). As it is over four weeks since we took in a trainload of fresh cases work throughout this hospital is very light. Indeed, if it were not for the regular daily arrival of small batches of Yeomanry we should not even be, as we are, half full. There are not 10 serious cases in the entire hospital, and we are just completing our fourth consecutive week without a death, so that our own 45 sisters have no more work than they can easily accomplish and as there is nothing for the 40 visitors to do time hangs heavily upon their hands. A few of them have taken the work of our original sisters while the latter have gone away for a few days' change—generally to those two very popular places, Kimberley and Mafeking. Similarly the opportunity offered by the presence of so many extra orderlies in our midst has been seized for giving a little well-earned rest to our own men who have been kept hard at work without a break of any sort since their arrival here on March 1st, and also for getting a few odd jobs done about the camp, notably the making of a good road to the cemetery which lies a quarter of a mile away and which now contains 59 graves. Had these extra sisters and orderlies been lodging with us three, or even two, months ago there would have been plenty of work to occupy them in the wards as reinforcements to our own staff, but in those days it would have been a very difficult thing for us to house them.

It was a great piece of good fortune that the disbanding of the Portland Hospital should have come, if it had to come at all, just in time for Surgeon-Major Kilkelly, who has been in charge ever since its mobilisation last autumn and who has made such a great success of it, to transfer his able services to the new Yeomanry Branch Hospital. There are many points in the running of a mixed civilian and military hospital which call for the possession of exceptional qualities by the man who is selected to act as the commandant, and which, even when the man has those qualities, must present less difficulty if he has also previous experience of the special needs of these mixed establishments. This is the first war of modern times in which they have played a really important part. By voluntary civilian effort the necessary *personnel* and material have been sent out from the old country alone (exclusive of the field hospitals which accompanied the colonial corps) for equipping roughly 2000 beds. 1000 of these are to be found in the Imperial Yeomanry Hospitals, and the other 1000 are distributed thus: 300 in the Glasgow Hospital, 100 each in the Portland Hospital, the Langman Hospital, the Edinburgh Hospital, the Irish Hospital, and the Welsh Hospital, 200 (I think) in the Princess Christian Hospital recently presented by Mr. Moseley to the Natal Government, and 25 in the Van Alen section of a field hospital. As a matter of fact each of these civilian-military hospitals had during the recent time of stress to temporarily increase its accommodation by 50 per cent., so that in one way and another the total reinforcements presented to the Royal Army Medical Corps authorities by voluntary effort amount to the large number of 3000 beds fully equipped and staffed. That Surgeon-Major Kilkelly possesses the qualities necessary for the head of one of these hospitals is proved by the great success which has attended his management of the Portland Hospital, and as that hospital was at work nearly three months before this, which was the second civilian hospital to arrive in South Africa, he has had more experience in the matter than any other officer. The Imperial Yeomanry Hospital, however, like the Portland Hospital, has been extremely fortunate in its commandant. Lieutenant-Colonel A. T. Sloggett is just the man for the job, the right man in the right place. No two officers could possibly have turned to better account the magnificent chances offered by the way in which the respective committees of these two institutions in London launched their undertakings. They sent out a splendid equipment and staff and having chosen their senior officers they trusted them and gave them a free hand and backed them up strongly on the few occasions when want of support might have perpetuated or might have bred difficulties. Their reward for having followed this sensible line of policy is found in the success which has resulted from it—a success which is marked enough to have caused a little quite excusable jealousy on the part of others who have not had equally good chances. I say "quite excusable" because it must be very annoying to those in authority in another hospital to hear the place for which they have laboured just as hard and

perhaps harder than their more fortunate professional brothers elsewhere perpetually being compared unfavourably by the patients and others with another institution. Indeed, there must be many officers in the Royal Army Medical Corps who envy Colonel Sloggett and Surgeon-Major Kilkelly their good luck in getting their present berths under a master who can be relied upon to grant every sensible request and to grant it at once and with evident satisfaction that it was made, and it must be a new and very pleasant experience to these two officers to find themselves working for such a master.

If, however, our Yeomanry Hospital has had the good fortune to be enabled to spread a comparatively rich table, many are the less fortunately-placed establishments which have benefited by the picking up of crumbs from it. At one time and another huge quantities of our stores, and of our equipment too, have gone astray. We hear that some packages have found their way back to England without redirection. The vast majority of those which we have lost have found in other camps out here a home which is rendered permanent by the generally understood, though unwritten, law of campaigning which ordains that any commandant has an indisputable right to stick to anything which falls into his hands. If only our packages chanced to fall into camps that wanted them more than we did I do not think anybody would grudge them, but a not inconsiderable quantity of our goods has been pilfered. When the entire packing-case fails to arrive it is seldom possible to ascertain what has become of it. The store-keeper who is new to his job or to the ways of the country worries a bit the first few times it happens, but after a short experience he thinks little and says less if out of a consignment of, say, six or eight dozen cases of wine or other attractive-looking goods only two or three are missing. Not seldom a whole truckful misses its right destination, but it finds another and with luck it may be brought back whole or in part. Occasionally a large portion of a train is consigned to one place but arrives at another. That happened to us once. As a general principle, however, the larger the mistake the more likely it is to be retrieved. It is the frequency of acts of really petty larceny which has most worried individuals and institutions. The quantity of "comforts" which have been stolen *en route* from friends at home must by this, the tenth month of the war, amount to something enormous. It is really no exaggeration to say that, after six months' experience, one is more surprised at receiving from England undamaged the box of cigarettes or other inviting-looking parcel which friends at home are so good in sending than one is to get the empty or half-empty case or the letter only which tells of its despatch. Several friends most kindly took to sending me a small parcel of tobacco each week. The result of the experiment was so disastrous that I had to write and advise them to stop it. Within the last three weeks three separate consignments of cigarettes, 25,000 in each, for distribution to the patients have been despatched to us from Cape Town. Only one of the three arrived at all and that had been opened, so that out of 75,000 cigarettes 24,000 reached the patients. The leakage is not by any means confined to the railway journey. I know of instances where the depredation was traced to the docks in Cape Town, and of one case in which it was clearly proved to have occurred before the parcel was put into a packing-case in England.

Surgically speaking there has been very little to do here of late, so little indeed that Mr. Raymond Johnson has gone home, for he felt that as things are now there is a greater call for him to be in his place at University College Hospital for the beginning of the winter session than for him to longer await here the often-expected downfall of Christian De Wet. The general impression is that as soon as that very able leader is wiped out Botha will quickly surrender, and that it is only the point of honour which makes the latter, as commander-in-chief, hold out so long as one of his subordinates keeps the field. Now that Colonel Sloggett has got back from Pretoria I am going to start at once on a short tour in Natal and unless any fresh rush of surgery should occur in the meantime I, too, hope to get home before Oct. 1st. At the present time there literally is not a case among our 519 patients which is not doing well or which needs more than a trivial operation, and even if there should by ill-fortune be a fresh and even a heavy access of surgical patients it is very unlikely that any of them would be brought down here. So very many hospitals are now established hundreds of miles nearer the front and all of them are, as we are, half empty, that there are vacant beds enough to easily accommodate 2000 or 3000 wounded without bringing any of them south of the Orange river, and now that the days of frontal attacks are over it is extremely improbable that anything approaching that number will have to be provided for. From the point of view of sickness, however, this indefinite prolongation of the war is becoming a serious matter. Apart from the comparatively light but still considerable weekly roll we are already within six short weeks of the end of September, when, as those with local experience warn us, there will be a recrudescence of enteric fever.

The Medical Inquiry Commission is due in Cape Town on August 21st, but whether they will first go to Natal, as is supposed, or spend a few days sifting matters in Cape Town before working up country to Pretoria by rail remains to be seen. It is said that they will cover all the ground and sail again within a month, but I do not think that it is possible. All signs of things as they were during the time of stress have disappeared, so that unless there is another terrible wave of enteric fever they will see nothing but apple-pie order throughout the hospitals. Everybody without exception, as far as my experience goes, is delighted at the addition to the Commission of those two representatives of administration and railway experience, for there is a very general consensus of opinion that the question of transport forms one of the chief roots of the difficulties under which the Royal Army Medical Corps laboured.

I said that there had not been much surgery to do in this hospital lately. As a matter of fact, from the middle of July to the middle of August there were 31 operations in the theatre, against 80 from the middle of June to the middle of July. These figures do not include the many small procedures carried out under nitrous oxide, such as opening abscesses, moving stiff joints, and extraction of teeth; for the latter alone there are two or three applicants every day. The nitrous oxide and the oxygen, of which we brought a large number of cylinders from England, have been most useful, and similarly we have had no cause to regret the bringing out of many other articles of equipment which, when they were proposed, evoked the adverse criticism of authority. One trembles to think what the hospital would have been like if it had not come equipped with its own laundry plant and steam steriliser at a cost of over £1200; nor would we for a good deal have lost the services of our masseur (he has recently got his Russian bath into working order, getting the steam from the laundry, and a most excellent and useful institution it has proved), or of our machine for making soda-water. It is much to have this manufacture under the supervision of a medical officer, for none of the soda-water procurable out here is free from the suspicion of being made from infected water. To turn out 40 dozen bottles, which is our maximum daily consumption, only takes the machine a few hours, so four months ago we made an offer in the right quarter to run the machine for the rest of the 24 hours for the benefit of the many other institutions which would be glad to have a reliable supply. The idea was voted a capital one by the head official concerned, and he said that he would provide the necessary syphons and make arrangements for the distribution. We at once made arrangements for the requisite increase in our supply of cylinders of $CO_2$, but we have heard nothing more about the matter. Presumably the head official had more important matters to occupy his time and attention than the substitution of a supply of soda water at cost price and reliable in both quantity and quality for the thoroughly unreliable article which some of the hospitals and messes are able to get if they can pay the enormous price which is asked for it. That, however, is one of the objections to the present organisation—there is so little delegation of power over details that an intended change has to be of supreme importance to stand any but a poor chance of being effected soon enough to be of use. Nor, again, could we possibly have properly nursed the 700 patients in one ward at the time of stress if we had bowed down to the official regulation which at that time limited the number of nursing sisters we had a right to bring to nine. Our committee in London braved the warnings, and the gibes too, of those whose business it was to know, but who evidently did not know, what infinite benefit is conferred upon the sick and at what infinitesimal inconvenience to the administrative department of a large hospital by the presence in it of a body of really competent nurses sufficiently large in numbers to actually nurse the grave cases. "They will only be tumbling over one another's

skirts and getting in one another's and everybody else's way," "They will only increase the trouble of administration and quarrel with the orderlies and grumble at the roughness of their food and accommodation," "Experience will soon teach you that a military hospital is a very different thing from a civil hospital, most of the patients are up and about and are only bored by the presence of a woman"—these are a few of the criticisms by which it was sought to throw cold water upon the pioneer effort of our committee to increase the numbers of the nursing sisters on the staff. 39 came instead of nine, but none of the prognostications ever came true; indeed, the entire male and female staff of the hospital has been a "happy family" ever since the start. Despite the criticisms and explanations which have raged around Mr. Treves's utterance with regard to women in South Africa I have not yet seen any statement in print which conveys any adequate idea of the magnitude and excellence of the work done by the nursing sisters in the war. It is only since March that their numbers have been brought up to anything like sufficiency, but they were here in time for the typhoid epidemic. It is true that ours were an altogether exceptionally well qualified lot of nurses, but they were such a success that we sent home for 10 more and these arrived just in time to save the original ones from breaking down in the weeks of stress from enteric fever. Nor have we even in lighter times found our numbers any too many to enable us to carry through the plan—on which I believe this was the earliest military hospital to work in South Africa—of having separate shifts of nurses for day and night work exactly as in a London hospital. Most fortunately not a single one of our nurses has contracted either enteric fever or scarlet fever, but surely the very fact that a considerable number of orderlies have got themselves infected looks as if the nursing sisters must have a much better appreciation of the value of cleanliness and the means to be adopted to prevent the spread of infection—or in other words that they must be much safer attendants upon the uninfected patients in the wards. I do not attempt to speak about field hospitals, for I have no experience of them, but I venture to express the hope that among the good things which will result from this war will be the establishment for all future time of a boon of inestimable value—that of having in every non-mobile military hospital a staff of really *well-qualified* (not merely "well-trained") nursing sisters in the proportion of somewhere between one to 10 and one to 20 of the patients. One nurse to every 10 hospital beds will be about the right proportion if in the future the principle of convalescent camps is confirmed, as I hope it will be. I think that this principle might be applied in times of peace as well as on active service and in framing the scheme a more convenient, if not a larger, application of the principle might be made than has been the case in this campaign. I believe that it would be found to work well if a convalescent camp was attached to each non-mobile military hospital.

Deelfontein.

## MEDICAL NOTES FROM PRETORIA.

(FROM OUR TRAVELLING CORRESPONDENT.)

I arrived in Pretoria on the morning of August 11th, after a peaceful and uneventful journey from Bloemfontein. Pretoria is a much handsomer town than the capital of the Orange River Colony; its streets are wider, its shops are larger and more numerous, and its general aspect is more bustling and business-like. The surrounding hills protect the town from wind, and the climate on the whole is milder and more relaxing than that of Bloemfontein and its neighbourhood. The general health of the troops at Pretoria is excellent. There are very few surgical cases in the hospitals and of the medical cases only one-third are returned as being of enteric fever, and this disease has never assumed an epidemic form. The total number in hospital at the present moment is only a little over 1000, while there is accommodation for some 2400.

The largest and most prominent building in the town, the Palace of Justice, has been converted into a marvellously complete military hospital of some 500 (to be exact, 493) beds, known as the "Law Courts Hospital." This magnificent building occupies one side of the Market Square and is made up of a basement storey used as store-rooms and over this a large central hall lighted from the roof. This hall is surrounded by galleries from which and from the hall itself two storeys of rooms of varying sizes open off. The hall has been converted into a huge ward of 72 beds known as the "Victoria Ward." Behind this and opening out of it are three large wards of 20 beds each; while doors at the sides and front lead into smaller wards, an x-ray room, operating theatre, offices, &c. Two lavatories, a large bathroom, and two ablution rooms are also on the ground floor. Doors from the gallery encircling the hall lead into the first-floor wards which are 20 in number and contain beds varying from eight to 12, and to three lavatories, day-rooms, and a dining-room for sick officers. The wards are bright and cheery, and, with the exception of the large 20-bed wards on the ground floor, well ventilated. The inefficient ventilation of these wards, owing to their being shut in by the wings, and the absence of ablution rooms on the first floor, were the only serious defects which I noticed. Two wings running back on either side of the large ground-floor wards contain a number of small rooms used for the reception of special cases and they unfortunately shut out a good deal of air and light from the large wards. The whole building is lighted by electricity. In the open space behind the hospital proper is a large corrugated iron kitchen, with scullery, &c. The waste water from the kitchen runs into an open sluice fed by a spring. This is the universal system of disposal of waste water in Pretoria. The pail system is employed for the removal of excreta, which are treated with creolin or crude carbolic acid, mixed with ashes and removed four times daily by the municipality. The whole hospital is under the management and superintendence of Captain W. T. Mould, R.A.M.C., while the *personnel* of the Irish Hospital forms the nucleus of the medical staff and nursing staff. There are in all nine surgeons, 130 non-commissioned officers and men, and 22 nursing sisters. Sir William Thompson, chief surgeon, kindly showed me round the various wards, which were almost entirely occupied by medical cases, mild enteric fever, diarrhœa, and dysentery predominating. The few surgical cases were mostly penetrating wounds of the extremities and were devoid of points of special interest.

Other buildings in the town—No. 1 Model School and No. 2 Model School, the Girls' School, and Bourke Hospital—accommodate 400 patients. All are completely equipped and nothing is wanting to the comfort of the inmates. The large Artillery Barracks were found unsuitable for hospital requirements and the buildings are employed by the principal medical officer for the reception of Royal Army Medical Corps details. No. 2 General Hospital, which is a marquee hospital containing 600 beds, occupies an excellent site about two miles to the north-east of the town, with a special siding. It is of the usual type which has been so frequently described in these columns and is completely equipped in every way. Near it are the Langman Hospital and the Welsh Hospital, containing 150 beds each. These also are marquee hospitals. The former is ready and is receiving patients and the latter will open in a few days.

Surgeon-Major C. R. Kilkelly, the military commandant, and Mr. Hamilton, the treasurer of the new Yeomanry General Hospital, are already in Pretoria and are working with their accustomed energy. They have secured a charming site on a gentle slope about a mile from the Market Square, in the grounds of a large country house (Mr. Beckett's). The house itself has been placed at their disposal and will accommodate 60 patients; the remaining 440 will be in marquees pitched around the house. Mr. Langman Brown and 42 nurses are daily expected from Bloemfontein, and there is every reason to believe that the hospital will be quite ready in a few days.

A very important little adjunct to the military medical system in the shape of a small "rest hospital" of 12 beds at the railway-station has been established by Colonel W. L. Gubbins, R.A.M.C., the principal medical officer of Pretoria. Patients arriving unexpectedly or late at night are taken in here until the ambulances can be called up to transfer them to the hospitals. I am much indebted to Colonel Gubbins for his courtesy in explaining the general hospital system here and for showing me over the rest hospital.

Pretoria, August 12th.

THE MIDDLESEX HOSPITAL.—The treasurers have received a donation of 1000 guineas from Miss Wicksteed to endow a bed in perpetuity in the cancer wards for female patients.

# THE PLAGUE IN GLASGOW.

Two more cases of plague have occurred since the publication of our last article, while a case which was then described as doubtful has declared itself to be the veritable malady. The total of cases therefore now reaches 16. A few such additional cases were to be expected when we recollect the history of the outbreak, an important feature in which was the fact that a full week elapsed between the sickening of the members of the Malloy family, presumably after attendance at the Bogan wake, and the recognition of their condition as infectious. During that interval free intercourse between the sick persons and their friends and sympathisers took place, and it was almost certain that the spread of the disease would not declare its limitations immediately. One exceedingly gratifying fact must be chronicled the new cases can all be traced to the originally infected area, and no spread has taken place to other parts of the town, although suspected cases among the 114 now under observation have been brought from other quarters. A suspected case occurring outside the infected area turned out not to be plague.

Every day that the spread of the disease remains thus limited is of immense value to Glasgow, for if no more foci of the disease are established the city may look forward in a very short time to being rid of the invasion. And to the commerce and shipping of Glasgow this is a matter of enormous importance. For at foreign ports ships arriving from Glasgow are being, and will be, placed in quarantine for varying periods. The danger to shipping from the present outbreak of plague may be infinitesimal, but foreign ports know of the outbreak only and not of the circumstances. Also quarantine is quite recognised by Great Britain as an obsolete and ill-judged way of arresting the spread of disease, but it is the orthodox method in the opinion of many nations with whom we trade. The detention in some cases will probably amount to a fortnight, and what this means when an expensive modern steamer is in question would surprise those who have never thought of the matter. Exports are ceasing, and will continue to cease, from Glasgow until the port has a clean bill of health, so that the stimulus to the inhabitants to help in every way to get rid of the plague is a very acute one.

The Borough Commissioners of Partick, Govan, and Kirkintilloch all held meetings at the beginning of the week, when it became clear that those responsible for the public health of the people in the neighbourhood of Glasgow are not giving way in the least to plague scare. At the meeting of the Govan Commissioners, Commissioner Fortune, referring to the fact that plague had actually occurred in the burgh, said that "it was well once in a while to have a scare such as they had had because it made many of the people more cleanly." He deprecated an exaggeration of the seriousness of the outbreak and detailed the precautions taken by the authorities in behalf of the public health. Bailie Smith at the same meeting carried his courageous contempt for plague a little further. He seems to have said that "in the opinion of the man in the street the medical men seemed to have lost their heads over the plague business. He thought the doctors might be suiting the purpose of the community if they made less fuss about the disease. There could not be any possibility of the plague raging to the extent it did some 200 or 300 years ago, chiefly on account of the great strides in sanitation." Bailie Smith is correct in thinking that modern sanitation is a check on plague, but he is very incorrect in thinking that it is the proper course for medical men, out of deference to the trade of a place, to neglect any precaution whatever for the complete stamping out of a terrible disease. If Dr. Chalmers and his able coadjutors had "made less fuss about the plague"—in other words, had not strained every nerve to suppress it immediately—the consequences might, and probably would, have been appalling. Fortunately Dr. Barras, the medical officer of health of Govan, while no alarmist, has not followed the line recommended by Bailie Smith, but has kept himself prepared to deal with any possible outbreak drastically.

At a special meeting of the Partick Commissioners a communication was read from the Local Government Board of Scotland suggesting the application of the Infectious Diseases (Notification) Act to plague. Accordingly the following resolution was passed, viz.:—

The Commissioners, as the local authority for the burgh under the Infectious Diseases (Notification) Act, 1889, declare, in terms of Section 7, Sub-section 6, of said Act, that emergency arises in consequence of the existence within the city of Glasgow of certain cases of plague, and therefore order that said Act shall in the district of the said local authority apply to "plague," and that for the period from the expiration of one week from the date of the advertisement to be made in terms of said Act till Sept. 3rd, 1901.

This resolution is published in the local papers and handbills have been issued throughout the burgh to the same effect. The Commissioners in remitting to the Sanitary and Sewers Committee power to take such measures as they might consider necessary specially authorised the temporary appointment of a medical man to inspect the whole burgh, beginning with the south side of it, and instructed the medical officer to get a supply of plague serum for inoculation where deemed advisable. The Convener and ex-Provost Caird were appointed along with the medical officer and sanitary inspector to arrange with the medical and sanitary officials of the city as to any measures that they might consider it advisable to adopt. Dr. J. Paterson, the medical officer of health of Partick, reported that he had engaged Dr. Kirkwood of Partick to make house-to-house visitations six days a week, and he had been at the work of inspection since Sept. 6th. The sanitary staff had also paid many visits to houses in the first ward with the object of enforcing cleanliness. An entire ward was in reserve at Knightswood Hospital for the treatment of any cases that might occur. On the whole the condition of the houses visited was good.

At Kirkintilloch, seven miles from Glasgow, at a monthly meeting of the burgh commissioners held on Monday last, Dr. W. Whitelaw submitted a brief report upon plague in which while admitting the bad pre-eminence of Kirkintilloch in cholera visitation he urged refrain from panic. And from other places in the neighbourhood the same story comes. The authorities, while neglecting no precautions, are resolved not to magnify the evils. This is the right spirit—it is the spirit which has made the Metropolitan Asylums Board prepare to receive plague patients in London, while at most of the large British ports the sanitary authorities are on the alert watching for the disease.

The rigorous cleansing of premises from which contacts have been removed, the emptying and limewashing of ashpits, the hosing of courts and the destruction of rats goes on apace in Glasgow. Many rats have been trapped in Rose-street and Thistle-street, Crown-street and Rutherglen-road during the past ten days, and after bacteriological examination were cremated. We are informed that none of the rats have so far been found to be infected. We publish additional notes from Dr. J. Brownlee and Dr. J. Campbell McClure as to the

### CLINICAL ASPECTS OF CASES OF PLAGUE UNDER TREATMENT.

(3) William Malloy, aged three years, 57, Thistle-street, Glasgow, was admitted to the Belvidere Hospital on August 25th. This child, who is the son of Mrs. Malloy, whose case was given in full last week, is stated by his mother to have become ill on August 21st. His symptoms appear to have been very slight. They consisted solely of slight pain in the abdomen and general malaise. On admission the temperature was 99·6° F., the pulse was 106, and the respirations were 22. The child's expression was dull and the face was very pale. There was a markedly enlarged gland in the submental region of about the size of a large marble. This gland seemed to be hard and adherent and the skin above it was slightly red. This gland, the mother distinctly stated, was not present prior to this illness. The glands in the axillæ, neck, and groins were palpable but were not markedly enlarged. Those in the right groin were the most obvious. Nothing noteworthy was detected in either lungs, heart, liver, or spleen. On August 26th the temperature reached 100·6° but without any aggravation of the symptoms; since then the temperature had been normal and the child fairly well. The submental gland above noted had decreased steadily in size till at the end of 10 days it was barely perceptible. No bacteriological examination was made in this case.

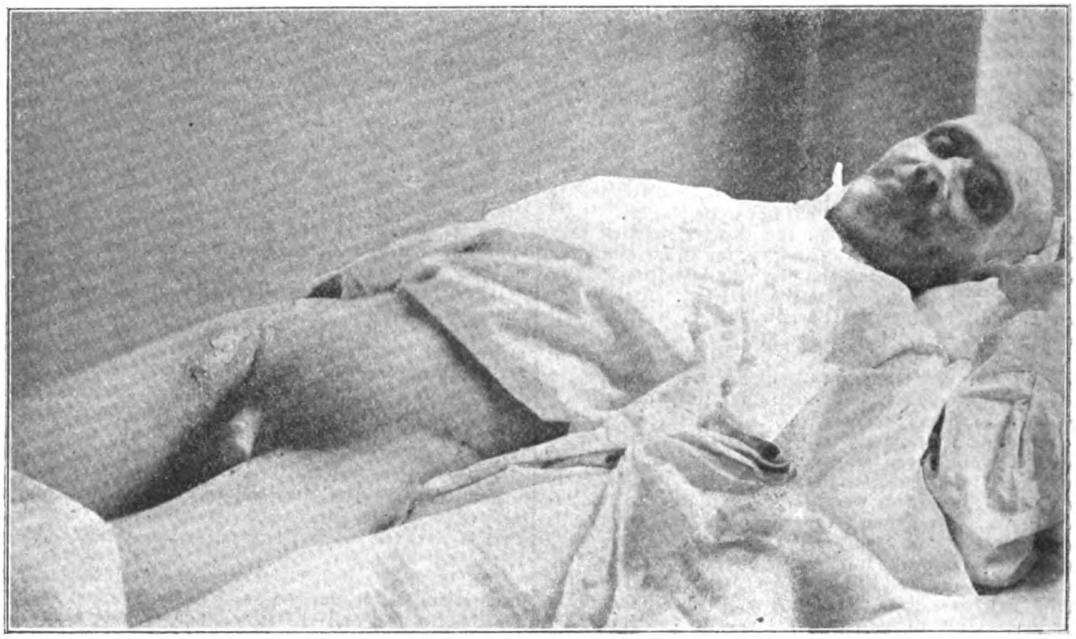
(4) James Bogan, aged 60 years, 71, Rose-street, was admitted to hospital on August 23th, his case being certified as enteric fever. The patient's grandchild and wife died on August 7th and August 9th respectively from a disease certified as "zymotic enteritis," but their symptoms were high fever and delirium of a nature not usually associated

with that disease. The patient sickened on August 15th, on which date he was suddenly seized with shivering, nausea, and vomiting associated with severe headache and slight abdominal pain. The symptoms from their onset were so severe as to make him take to bed, where he remained till his removal to hospital. From August 25th he suffered from diarrhœa and for the 24 hours preceding admission he was delirious.

*On admission* the patient's face was seen to have the same dull, heavy, and yet anxious look as described in detailing last week the case of Patrick Malloy. The pupils were moderately dilated and the conjunctivæ were slightly injected. The tongue was coated with a thick greyish fur in the centre, while the edges were moist and clean. There was no congestion of the fauces. The skin presented the same mottling noted before in Patrick Malloy, with the difference that over the abdomen it was much more profuse. In the right groin was a very large tense red and œdematous swelling occupying the situation of the verticle group of glands (Fig. 1). This swelling was exquisitely tender and the tissues surrounding it were so infiltrated as to make the appreciation of individual glands by palpation impossible. The lymphatic glands above Poupart's ligament were also palpable and slightly tender, while the skin over the right iliac region, though not reddened, was distinctly œdematous. Elsewhere the lymphatic glands were not palpable. The temperature was 102·8° F., the pulse was soft and weak and numbered 72, while the respirations were at the rate of 24 per minute. The abdomen was slightly distended and rather tense. Nothing noteworthy was detected in the heart and lungs and the spleen and liver were not enlarged.

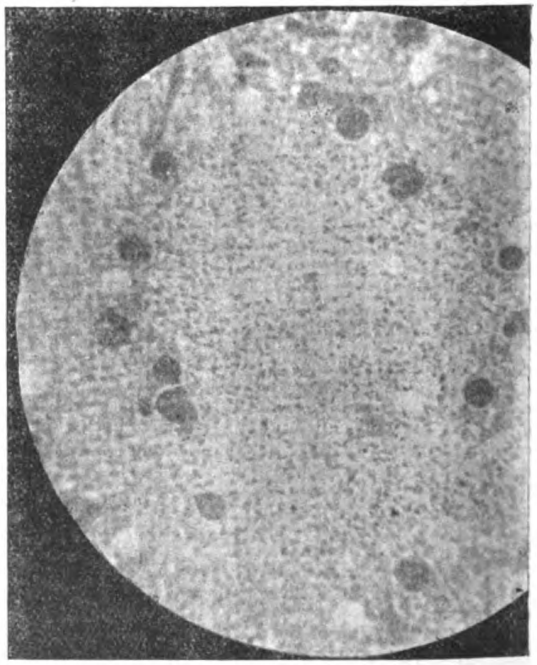
*Course of disease.*—The patient's condition has been precarious. Delirium has been almost continuous, although slight, and at no time violent. The pulse has been very feeble and its rate under 100. Hiccough was present from August 30th till Sept. 8th, though not in a distressing degree. It is of interest to note in this case that without any evidence of pulmonary lesion the respiration rate has varied between 24 and 30. Until the morning of Sept. 2nd the temperature ran a febrile course, varying between 100·6° and 103°. On that morning the patient had a distinct crisis and the temperature fell to 97·6° and there was improved tension in the patient's pulse and he expressed himself as feeling better. After admission the redness and œdema surrounding the swelling in the groin slowly spread until it extended downwards almost to the mid-thigh and backwards over the buttock. At the same time œdema without redness spread from the right iliac region until nearly the whole abdominal wall pitted readily on pressure. This was associated with a distinct increase in the abdominal distension. The inflammatory process reached its height on Sept. 1st and after that date there was a slow but distinct subsidence of the redness and œdema around the bubo. The œdema of the abdominal wall disappeared, but there appeared coincident with this considerable œdema of the left foot, with tendency to the formation of pressure sores. On Sept. 6th a secondary fever due to suppuration of the bubo commenced, and the temperature

FIG. 1.



Shows the patient on admission.

FIG. 2.



A pure cultur of bacillus pestis.

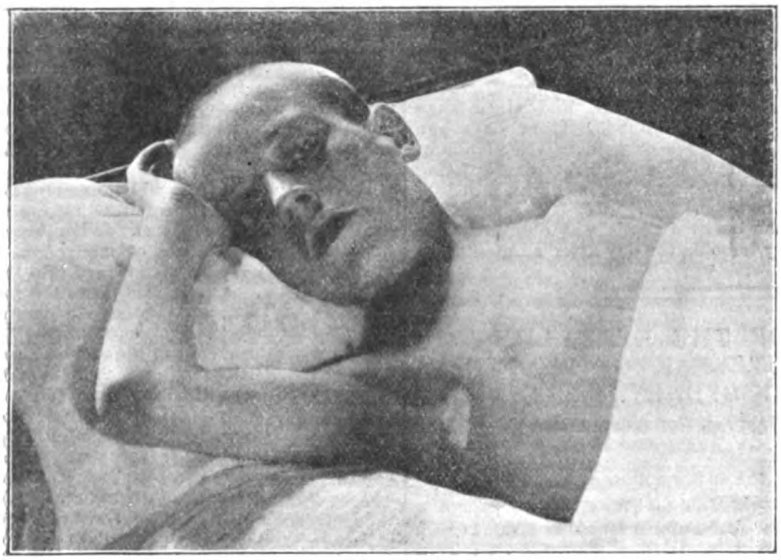
rose gradually until it has now (Sept. 12th) reached 101°. The patient was at the date of writing extremely feeble.

A pure culture of bacillus pestis (Fig. 2) was obtained from puncture of the bubo on the night of admission.

(5) Thomas Horn, aged 14 years, 6, South Coburg-street, was admitted to hospital on August 29th, his case being certified as "enteric fever (?)." The patient was at the house of Mrs. Malloy on either August 20th or 21st. He sickened on the 23rd. The incubation period in this case is therefore two or three days. On the 23rd the patient was seized with headache, retching, and pain in the back and right axilla. He was fevered, restless, and delirious at nights after the onset of illness. The pain in the right axilla rapidly became worse and was followed by pain in the left side of the neck and in the right groin.

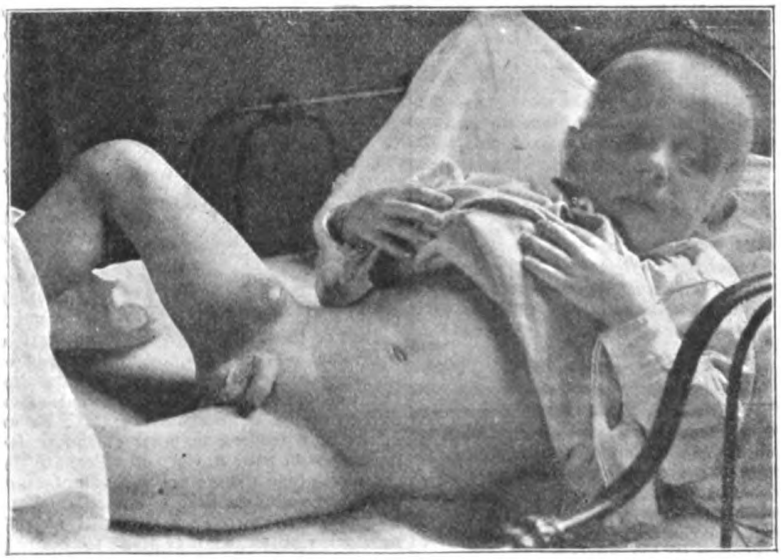
*On admission* the patient's face was flushed and the expression was dull and heavy. He had the same apprehensive expression described in previous reports. The pupils were dilated and the conjunctivæ were fairly clear. The lips were dry and there was well-defined circum-oral pallor. The tongue was coated in the centre with a greyish white fur, but was clean and moist at the tip and edges. The skin was hot and dry; it presented a faint mottling which was most marked on the back, flanks, and buttocks. As the patient lay in the dorsal decubitus the right thigh was slightly abducted and the leg was semi-flexed. There was a general enlargement of the glands in the groins, the axillæ, and the neck. The glands in the right axilla and the right groin were distinctly the largest and exceedingly tender (Fig. 3). No complaint of pain was made on palpation of the glands of the left groin, the left axilla, or the neck. The skin over the right axilla and the right groin was slightly reddened, but was not œdematous. The temperature was 104·6° F., the pulse was 140, and the respirations were 26. The pulse was easily compressible, but quite regular. The respirations were easy. Examination of the lungs revealed nothing except a few sub-crepitant râles in the left baso-lateral region. On auscultation over the cardiac area a faint systolic murmur was heard both at the apex and in the pulmonic region. The abdomen was slightly tympanitic

FIG. 3.



Shows the patient on admission.

FIG. 4.



Shows another patient on admission whose clinical history is not recorded in this article

to percussion, especially in the right iliac region. The spleen was enlarged both in its longitudinal and transverse diameters.

*Course of disease.*—Until Sept. 2nd the general condition remained the same. There was no visible increase in the size of the enlarged glands. He was very restless at nights, having delirium with delusions. Fever was high, the temperature ranging from 103° to 105°. The pulse was rapid and feeble. Considering the stress and duration of the fever there was a notable absence of some of the commoner symptoms of high fever—viz., subsultus tendinum and dryness of the mouth and tongue. Headache was constantly present. On August 31st a marked injection of the right eye was observed with slight prominence of the eyeball. On Sept. 2nd a consignment of Yersin's anti-plague serum was received. It was decided after consultation that this patient was a suitable subject for serum treatment. Accordingly at 12 midnight an intravenous injection of 15 cubic centimetres and at the same time a subcutaneous injection of 25 cubic centimetres of the serum were made. The patient slept well after the injections and perspired freely for the first time since admission. Next day brought no remission of the temperature, but the buboes in the right groin, which had been extremely tender on the previous day, could now be touched without the patient experiencing more than a slight sense of pain. A like lessening in the tenderness of the axillary bubo was also quite manifest. A fall of temperature amounting to 4° occurred on the night of Sept. 3rd, and since then the improvement has been maintained. Three days ago (Sept. 9th) there was occurrence of pain in the glands of the right groin associated with a temperature oscillating between normal in the morning and 101° at night, probably due to suppuration of the bubo.

A pure culture of the bacillus pestis was obtained after puncture of the axillary bubo on the day after admission.

## A SUMMARY OF THE EVENTS IN THE RECENT OUTBREAK OF PLAGUE IN SYDNEY.

(FROM A SPECIAL CORRESPONDENT.)

THE population of the metropolitan combined sanitary districts of Sydney is 456,000, all being whites except a small colony of Chinese who number less than 4000. Cases and deaths occurred as shown in the table below; included among them are 10 Chinese, all males, of whom eight died. The first case appeared during the week ending Jan. 27th, and up to July 28th there had been 302 cases and 102 deaths.

| Week ending | Number of cases. | Result. | Week ending | Number of cases. | Result. |
|---|---|---|---|---|---|
| Jan. 27th. | 1 | Recovered. | May 5th. | 38 | 10 deaths. |
| Feb. 3rd. | — | — | ,, 12th. | 23 | 10 ,, |
| ,, 10th. | — | — | ,, 19th. | 24 | 10 ,, |
| ,, 17th. | — | — | ,, 26th. | 7 | 6 ,, |
| ,, 24th. | 2 | 1 death. | June 2nd. | 17 | 3 ,, |
| March 3rd. | 2 | 1 ,, | ,, 9th. | 4 | 3 ,, |
| ,, 10th. | 5 | 3 deaths. | ,, 16th. | 10 | 3 ,, |
| ,, 17th. | 12 | 3 ,, | ,, 23rd. | 6 | — |
| ,, 24th. | 10 | 3 ,, | ,, 30th. | 12 | 3 deaths. |
| ,, 31st. | 23 | 6 ,, | July 7th. | 1 | — |
| April 7th. | 29 | 9 ,, | ,, 14th. | 3 | — |
| ,, 14th. | 29 | 12 ,, | ,, 21st. | 2 | — |
| ,, 21st. | 16 | 8 ,, | ,, 28th. | 0 | 1 death. |
| ,, 28th. | 26 | 7 ,, | | | |

Before the plague came the provisions of the Venice Convention were applied to vessels arriving from plague-infected ports, efforts were made to kill the rats on them, and notification of all cases of plague was made compulsory under the Public Health Act as soon as the presence of the disease in New Caledonia became known. On the appearance of the first case the Registrar-General was requested to communicate to the department every information of death received by him after Jan. 1st, 1900, in which the cause was ascribed to blood-poisoning, septicæmia, acute abscess, septic intoxication, &c., with a view to investigation by the medical staff. It was publicly requested that all cases of illness of doubtful character should be reported to the department. This request was also specially addressed to the members of the medical profession by letter. Suspicious or doubtful cases thus reported were examined and diagnosed by a staff medical officer. On the appearance of the second case the coroners were desired to report all uncertified cases of death in which there was suspicion of plague, in order that the examination of the bodies might be supervised and to secure safe burial if plague were found to have been the cause of death.

Facilities for examining cases bacteriologically already existed in the excellent laboratories possessed by the department and under direction of a highly-trained microbiologist. A supply of plague prophylactic (Haffkine) had been procured long before and was in readiness. At first it was used for inoculating the staff and contacts only. A further supply was received during the second week of the outbreak and was used on contacts and on persons inhabiting parts of the city which appeared to be specially dangerous; this supply was continuously maintained by receipt of fresh consignments from India. Posters were exhibited in the streets in which brief information concerning plague and instructions to householders were given, and pamphlets to a similar effect were sent by post to every householder; the posters were also printed in Chinese, and exhibited in the small Chinese quarters which exist in Sydney.

Parts of the city from which numerous cases of plague had been removed were regarded as infected areas. They were dealt with under the quarantine law, surrounded by a guard, and then large numbers of men controlled by the Department of Public Works were turned into them who thoroughly cleansed them. A staff was organised for the destruction of rats. In addition, a capitation fee of sixpence for every rat was paid through the agency of the staff last mentioned and also through the agency of the various municipal councils controlling the districts into which Sydney is subdivided. The sewers were from time to time fumigated with burning sulphur by the staff of the engineer for water-supply and sewerage. This had the effect of killing some rats and of driving large numbers to the sewer mouth where they were drowned or destroyed. Another staff was organised which had for its duty to fumigate regularly with burning sulphur the ferry boats which ply on the harbour so as to destroy the rats. This duty was entrusted to the collector of customs. It was ordered that no vessel trading between Sydney, which was the only infected place, and other ports of New South Wales should be allowed to communicate with the shore unless it could produce a certificate that before leaving Sydney it had been fumigated and the rats had been destroyed. This duty was entrusted to a branch of the last-named staff. Vessels of all descriptions were forbidden to lie at any public wharf except under regulations calculated to prevent the landing of rats from them. They were to be kept four feet off the wharf by fenders—the fenders and gangways in use to be kept freshly tarred, springs and hawsers to be tarred, all openings in the vessel on the wharf side to be closed except when in actual use, all openings to be closed at night and the side to be brightly lighted, &c.

All local authorities were reminded of their powers and duties under the Public Health Act and the Municipalities Act and were exhorted to use great exertions to get rid of all accumulations of filth and of nuisances in general. Local authorities in country districts in communication with Sydney by sea or by rail were requested to secure the refusal of some cottage suitably placed in which a plague patient might be lodged if imported from Sydney.

Part of the maritime quarantine station was equipped and utilised as a plague hospital. A staff of experienced trained nurses was drawn from a general hospital under control of the department. A staff medical officer was placed in charge of the quarantine hospital; he was assisted by the advice of a leading member of the profession practising in Sydney who paid a visit on alternate days. Clergymen of three religious denominations volunteered for service at the quarantine station and officiated during its occupancy for plague purposes. They, as well as medical officers and medical visitors who desired to study the disease, were allowed to enter and leave the hospital enclosure on first

changing their clothes and on bathing before leaving if they had been inoculated.

Buildings at the maritime quarantine station standing outside the hospital enclosure, which are generally employed for housing healthy persons landed from infected vessels, were used as an isolation camp for contacts.

Communication with the quarantine station being by sea a service of steam-vessels was organised, by means of which communication could be had immediately at any time that a case was reported for removal. These vessels lay at a central depôt within the city, which was placed in quarantine. A special ambulance service was equipped for the purpose of removing cases of plague; it was lodged at the central depôt above-mentioned. A disinfecting staff was organised and lodged at the same central depôt. This was placed under control of the medical officer of health of the metropolitan combined sanitary districts.

All cases of plague or suspected plague were notified to the department direct; they were then visited by a staff medical officer. As soon as the staff medical officer had made up his mind that the case was plague he administered subcutaneously 40 cubic centimetres of Yersin-Roux serum (as soon as this became available on May 12th), communicated with the nearest police-station, forthwith placed the house and all persons in it in strict quarantine under a police guard, and reported.

When a staff medical officer's report was received (by telephone or otherwise) at the department, the ambulance staff was instructed to fetch the patient and, in separate vehicles, the other members of the household. A trained nurse accompanied the patient and attended to his needs during the journey.

On arrival at the maritime quarantine station protective inoculation was offered to the contacts; it was rarely accepted. On arrival contacts were deprived of their own clothes and were given clean clothes; their own clothes were restored to them after washing or disinfection in a steam disinfector. Contacts, whether inoculated or not, were detained for five complete days and were then dismissed. Patients were discharged from hospital (*a*) if they had had a normal temperature for 10 days, (*b*) if they had no discharging sore, and (*c*) if they were, generally speaking, strong enough.

The bodies of persons (*a*) who were too ill on discovery for removal, (*b*) who were found already dead, or (*c*) who after investigation on report of coroners were found to have died from plague were dealt with as follows. The body was completely enveloped in a sheet soaked in sublimate solution and placed in a light coffin having watertight joints at the bottom. The coffin was screwed down; it was enveloped in coarse sheeting soaked in sublimate solution; it was then safely transported by the undertaker to the depôt already mentioned and thence to the maritime quarantine station, where it was buried without further precaution in a sandy soil on a slope falling towards cliffs above the Pacific. The bodies of persons who died at the quarantine hospital were coffined after a similar fashion in the hospital enclosure by the male nurses, who also carried them to the gate. They were then taken in charge by appointed persons who transferred them to the place of burial mentioned above.

After the house from which the patient had been removed was evacuated it was locked and remained in charge of the police who prevented general access to it. As soon as possible the disinfecting staff took possession of it. Usual methods of disinfection were used: sublimate solution was applied with Geneste-Hirscher sprays inside, solutions of 5 per cent. sulphuric acid being used for yards and basements. Clothing, bedding, and soft goods generally were removed in canvas bags to the steam disinfector. The routine of disinfection varied slightly according to circumstances in individual cases; the whole premises were always thoroughly cleansed, but often only the room occupied by the patient was actually disinfected. Articles removed for disinfection having been replaced, the contacts resumed occupation at the beginning of the sixth day from their removal.

August 8th.

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ALUM IN BAKING POWDER.—At the Bristol police-court on Sept. 5th a grocer was summoned for selling baking powder containing 52 per cent. of alum. He was fined 40*s.* and costs and informed that a second offence would result in imprisonment.

## POST-GRADUATE INSTRUCTION.

AT the beginning of the new medical session, which is now within a measurable distance of us, many qualified men will like to know the opportunities which are offered them in London for keeping up to date in their clinical work. The union of nine of the Metropolitan Schools of Medicine offers the best of these opportunities. A ticket for three months or six months can be obtained which entitles its holder to attend the clinical instruction, the operations, and the post-mortem examinations at each of the following hospitals, viz., Charing-cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College, and Westminster. It will be seen at once what a wealth of material is open to those who desire to see as many cases as possible in a short period, and practitioners will be difficult to please if they do not find enough cases of real interest to study. If the scheme were more widely known there would be fewer who consider that they must go to Paris, Berlin, or Vienna to obtain clinical instruction. Particulars may be obtained on application to the honorary secretary, Metropolitan Schools of Medicine, west wing, Examination Hall, Victoria-embankment, London, W.C., between the hours of 12.30 and 3 P.M. daily, except on Saturdays.

*Medical Graduates' College and Polyclinic, 22, Chenies-street, Gower-street, W.C.*—This institution was established in 1898. Its principal object is to organise and to develop post-graduation study in the metropolis. The enormous field for clinical study which exists in London has failed to attract medical graduates in any considerable number largely because the existing facilities are but imperfectly known and the clinical teaching is not definitely organised to meet the wants of practitioners. The establishment of a central office where precise information may be obtained will, it is hoped by those interested in the institution, be of some influence in placing London in the position it ought to occupy as the most important centre for post-graduation study. In addition to an endeavour to secure coöperation among existing institutions the new College provides practical instruction under its own roof in all the special departments of professional work. It is well equipped with consulting-rooms, class-rooms, laboratory, lantern-room, dark-room, &c. There is also a well-furnished reading-room and library. In the Polyclinic consultations are conducted every afternoon at 4 o'clock by well-known physicians and surgeons. Patients whose circumstances warrant it may be sent by any medical practitioner and the opinion of the consultant is communicated not to the patient but to his medical adviser. Records of the cases are made and the valuable clinical material thus collected is to be published in the College journal. The annual subscription is fixed at present at one guinea. This secures the use of the library, reading-room, and museum with the right to attend the afternoon consultations. There are also at intervals special clinical lectures which are open to all annual subscribers. Medical visitors to London are invited to inspect the College, and further information may be obtained by application to the medical superintendent. The President of the College is Sir William H. Broadbent, Bart.

*Charing Cross Hospital.*—Special series of clinical lectures and practical demonstrations, exclusively arranged for the convenience of practitioners and post-graduate students, are given at the hospital throughout the year. The lectures for the year are arranged in three courses, each course consisting of 10 meetings and lasting 10 weeks. Two of these courses are held during the winter and one during the summer. The class meets on each Thursday in the board-room of the hospital and proceeds thence to the wards or to the department in which the demonstration may be held. The fee at present charged for each course of 10 lectures is one guinea. The first of the two winter courses for the ensuing academical year will commence on Oct. 11th next and will be conducted by the following members of the medical and surgical staff: Dr. T. H. Green, Dr. J. M. Bruce, Dr. F. Willcocks, Dr. H. M. Murray, Dr. J. Galloway, Dr. T. W. Eden, and Mr. S. Boyd, Mr. H. F. Waterhouse, Mr. F. C. Wallis, and Mr. C. Gibbs. Practitioners wishing to join the class can obtain any further information as to the

dates and the subjects by communicating with the honorary secretary (Dr. F. Willcocks) at the hospital.

*West London Hospital.*—This hospital was the first, and still is the only, general hospital in London to organise a systematic scheme for post-graduate teaching and to devote the clinical material in its wards and in its out-patient department to the instruction of qualified men. This scheme was started in 1895 and three years later its basis was enlarged by the provision of accommodation in the shape of lecture-, reading-, and writing-rooms for the post-graduates. For the proper organisation of post-graduate teaching a general hospital is essential, and it is absolutely necessary that the practice of such hospital should be exclusively reserved for qualified medical men. The proof of this statement is to be found in the success which has attended this college. The large number of post-graduates who have been enrolled since its commencement (over 300) at first strained the accommodation resources of the hospital, especially in the out-patient department, but a much-needed enlargement of this department carried out by the committee last year now affords ample space for a large class of post-graduates. The scheme of study includes the following: 1. Instruction is given daily in the medical and surgical out-patient rooms. 2. Special demonstrations are given in the medical and surgical wards on fixed days in each week. 3. Practical instruction is given in the special departments for diseases of the eye, throat, nose and ear, and of women, and clinical assistants are appointed in connexion therewith. 4. Instruction is given in the post-mortem room and in the clinical investigation laboratory. 5. Every facility is afforded to the post-graduates for seeing and following the operations performed in the operating theatre, over 1000 operations being performed each year, and they are encouraged to render assistance thereat. 6. Courses of practical lectures are held three or four times in the year, two lectures being given in each week. A certificate, signed by the staff, is awarded after three months' attendance. The fees for hospital practice, including all lectures, are £3 3*s.* for three months, or £5 5*s.* for one year. Full information can be obtained on application to the Dean, Mr. L. A. Bidwell, at the hospital.

*West-End Hospital for Diseases of the Nervous System.*—Clinical demonstrations on cases of diseases of the nervous system are held each Tuesday afternoon at 4 o'clock throughout the winter for medical practitioners. Medical men are admitted on presentation of their visiting cards, but the fee for a course of three months is one guinea. The courses are also sometimes held during the spring and autumn vacations for medical men visiting the metropolis. The programme of subjects held during the winter courses is so arranged as to cover the main subjects included in neurology. The subjects are always practical and cases are always shown. A synopsis of each demonstration is sent by post beforehand to those who join for the course. As this course caters solely for practitioners it does not clash with that given at the National Hospital for the Paralysed and Epileptic which is for students also. Further information may be obtained from the honorary secretary, Post-Graduation Course, at the hospital, 73, Welbeck-street, W.

*** For Post-graduate instruction abroad see the Students' Number of THE LANCET for Sept. 2nd, 1899, page 692.

## THE REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1898.

FIRST NOTICE.

THIS report, with its appendices and returns, forms a weighty official document in a double sense—that is, not only in the matter of avoirdupois, but in the amount and value of the information which it contains. We do not think that these reports are so well known as they should be, for they contain a variety of information not easily to be obtained elsewhere. A perusal of the list of books and papers referred to by the compilers of this volume will show the labour involved in drawing up these reports. We may enumerate some of the subjects discussed, and as our observations must be very brief we strongly recommend our readers to study the report for themselves.

In addition to the sections devoted to the diseases affecting the European and native armies of India, the jail and general population, we have one upon enteric fever in which the subject is very elaborately and carefully treated in connexion with all the more recent views put forward in contemporary medical literature—in Europe and America. There is also a contribution on the detection of the bacillus typhi abdominalis in water and other substances by Mr. H. Hankin, Fellow of St. John's College, Cambridge, the chemical examiner and bacteriologist to the North-West Provinces and Oudh and to the Central Provinces. A very interesting reference is made to some points in connexion with plague and a brief summary of the report of the German Plague Commission is given; while among other contents of the report we may mention some valuable observations on the sewage problem and the different methods adopted for the disposal of excreta in India; a *résumé* of Professor's Sticker's paper on Leprosy as the result of his observations and experience whilst serving in India as a member of the German Plague Commission; and a capital, as well as very readable, report by Dr. Alexander Crombie of the recent Congress on Tuberculosis at Berlin (at which he was present as a delegate from the Indian Government), supplemented by observations having special reference to the prevalence and prevention of that disease in India.

The health of the European army in India, the average strength of which in 1898 was 67,741, was better as measured by the admissions, constantly sick, and death rates, but the total loss from deaths and invaliding together was higher than in the previous year. Ague and venereal disease, although less in 1898 than in the previous year, made up more than half the total admission-rate from all causes. But the diseases which caused this admission rate were not by any means those which gave rise to the mortality in the British army serving in India. Enteric fever caused more than half the total death-rate. The mortality from this fever, abscess of the liver, and heatstroke combined made up 65 per cent. of the total deaths for the year. As far as northern India is concerned the health statistics were no doubt unfavourably affected by the return of soldiers more or less broken down in health from frontier field service. We notice that the highest death-rate occurred in the 2nd battalion of the Yorkshire regiment at Peshawar and that no less than 52·9 of it was attributable to enteric fever. A large part of the Sanitary Commissioner's report is devoted to the consideration of this fever and the subject is very thoroughly discussed—indeed, we do not know any other published reports in which the views of Continental, British, and American authorities in regard to its origin, causes, modes of spread, and etiology are so amply set forth. We wish we could add that the result of all the labour bestowed upon the subject was more encouraging than it is. Enteric fever is the most fatal of all the diseases to which the European army in India is subject and, judging by statistics, it seems to be increasingly so. Not so very long ago it was comprehensively regarded and relegated to one cause, that of a water-borne disease; but this exclusive view is no longer held to be tenable. Its causation is now attributed to the presence of the enteric fever bacillus of Eberth and Gaffky and, as a consequence, the fever is intimately associated with the life-history of this pathogenetic germ and the methods by which it effects an entrance into the human body. It is confessedly somewhat bewildering to those who are seeking how to formulate some practical line of action in regard to the prevention of enteric fever to read all the various theories and hypotheses that have been, and are still being, put forward. A much more comprehensive view is now taken as to what is and what is not enteric fever. Not only are cases nowadays included under that term which the late Sir William Jenner, for example, would probably not have recognised as belonging to it, such as those of enteric fever without intestinal lesions, but the latest researches open out fresh paths for investigation. The great body of opinion, and the results of bacteriological researches, are in favour of the view that the enteric fever of India is the same as that of Europe, although cases may occur in both countries caused by other and related bacilli. Assuming that the bacillus is the veritable cause of enteric fever, the facts that it can be so frequently detected in the urine and that its presence is often discoverable in the gall-bladder and various organs and tissues long after a patient has recovered from an attack of enteric fever, tend to show how much more complex and difficult is the problem

of preventing the spread of the disease than it was when the intestinal discharges were believed to be the sole or main vehicle for dissemination of the virus. The enteric fever age belongs to that period of life of which short service armies are composed, and the predisposition to be attacked by it in tropical and sub-tropical climates is in inverse proportion to the length of service in such climates—in other words, the shorter the residence the greater the liability to attack. This may be now regarded as a fact established by Indian statistics. A good deal has been said of late about the prevalence of enteric fever among the native population in India. If such were the case we should not, of course, have far to go to seek for a widespread cause of its prevalence among British troops serving in that country; but the facts, so far as these are known, all point the other way—namely, that the natives enjoy a comparative immunity from enteric fever. It is commonly alleged that the natives suffer from that disease in childhood—hence their subsequent immunity; but no evidence has been brought forward in support of that view, and it is notorious that the amount of enteric fever among the native army and jail population is quite insignificant as compared with what it is among Europeans quartered in India. Put shortly, the disease from which the native soldier dies is pneumonia and respiratory disease during the cold season; that from which the British soldier dies is enteric fever contracted in the hot season. It is noteworthy, too, that the class of native troops most liable to be affected by enteric fever are those whose diet and habits most nearly resemble our own—the Goorkhas, for example. If we might hazard a conjecture it would be that those who are not meat-eaters and spirit-drinkers in these climates are less liable to attack, and that their fæcal discharges are of quite a non-infective character as compared with those who consume meat and alcohol. Be this as it may, however, the loss of young manhood in India and the drain on this country from this disease are appalling, and no amount of trouble and expense can be considered excessive when employed in searching out and preventing its causes.

The history of plague in India during 1898 shows that, as far as the British troops were concerned, the chances of their contracting the disease by infection were very small, notwithstanding the fact that numbers of them were employed on plague duty. In case of cholera the movement of British troops in seven instances during 1898 was resorted to with success; and similarly in the case of plague the evacuation of an infected site or of the lines occupied by the native followers of a corps was found to be the most effectual plan of procedure. The best methods by which we can combat plague comprise: evacuation of the site, measures of disinfection, and anti-plague inoculation on the same principle as we vaccinate against small-pox; and the most practical guide that we have seen is a little pamphlet on bubonic plague by Mr. Hankin, published at the Pioneer Press, Allahabad, in 1899. As regards the way to proceed in the case of a village or small community a recent report by the Punjab Government may be consulted. In this report the rôle played by rats and the reasons for an immediate and wholesale evacuation of a plague-infected locality are set forth in an interesting and instructive way. The report states that the advantages of evacuation and thorough disinfection of a whole village site have been so accepted as fully proved that little argument has been used regarding them. A comparison of the ultimate results in a number of cases where immediate evacuation was not insisted on with those of later villages where no delay was allowed to occur will show clearly the necessity of having all villages camped out in the open air at the earliest possible moment. The argument is this. Plague shows no tendency to spread from house to house unless it is carried by human beings or animals. Rats take the disease, and it is admitted that after being infected they have no tendency to leave their homes unless they are disturbed, and that in 10 days all that live in the infected houses should have died. If, however, they are disturbed by the roofs being at once taken off infected houses, floors being dug up, and everything being flooded with antiseptics, they leave the infected houses and carry the infection to other houses. In front, therefore, of the line of disinfection through a village there is an advancing wave of infection carried by the rats, and when the disinfection reaches the last house in the village the remaining rats must either double back into the houses already disinfected, thus re-infecting them, or they must leave the village and carry the infection to some other village, and either result is clearly one to be avoided. Given the premisses the conclusion and the rule would therefore be sound.

## THE OUTBREAK OF TYPHOID FEVER IN BELFAST.

AT the present time the citizens of Belfast are being treated to an interesting discussion as to the cause of the typhoid fever in the city. In the middle of July the executive sanitary officer and the city surveyor of Belfast reported to a joint meeting of the improvement and public health committees of the corporation as to how the health of the city could be improved with special reference to typhoid fever, and they made a number of suggestions, as reported in THE LANCET of July 21st (p. 224). The executive sanitary officer reported that there would be no protection against epidemics of typhoid fever until the Water Commissioners carried out the powers which they obtained from Parliament last year, when in referring to their catchment the chief engineer of that trust stated that "a condition of things like that on the catchment is a standing menace to the health and life of the people in the town where the water is consumed." In reply to this report the chief engineer of the Water Commissioners supplied his board with a counter report which was presented at their meeting on August 30th. He said that the conclusion that the recent cases of typhoid fever in Belfast found their origin in the Stoneyford catchment was unsupported by any real evidence. As against such a view he brought forward the long storage and subsidence of the water; very careful filtration; further storage in the service reservoir; turning the water to waste when any doubt existed as to its suitability for use; and the fact that the disease did not show itself fairly distributed over the whole district receiving a supply from Stoneyford, but in a particular portion. He then twitted the corporation officials with the fact that while they admitted serious defects in the sanitary condition of Belfast and made a number of general recommendations in connexion with them, they utterly failed to draw any conclusion as to the relationship between the sanitary conditions and the prevalent disease. He traced the origin of the epidemic to bad drains, stinking privies and ashpits, sewer gas, and unhealthy sites in Belfast. He pointed out that there were thousands of spots in Belfast soaking with organic pollution, teeming with germ life, and ready when conditions were favourable to seek out new victims. He pointed out how disease-germs, which die in water in a few weeks, live and multiply at an enormous rate in soil when it is charged with organic filth. He showed (by quoting statistics, giving some returns of drain-testers employed by the public health committee) the deplorable condition of drain-jointing in Belfast. One tester found, out of 819 houses in which typhoid fever had occurred, some 388, or 44 per cent., with defective drains. In a further batch of 137 houses the drains in over 78 per cent. were wrong; and another tester stated that out of 731 houses in which typhoid fever had occurred 389 houses, or 53 per cent., had defective drains. On the question of things sanitary in Belfast the engineer of the Water Board referred to a paragraph quoted in Question 4040, noted in the Belfast Bill of 1896, as follows:—"No language could be too strong to express public disapproval of the practice of wilfully constructing improper sewers or drains and anyone even moderately acquainted with the character of the Belfast buildings must be alive to the fact that this almost criminal negligence is more widespread than they would care to acknowledge." The engineer of the Water Board attacked the whole system of the Belfast main drainage, pointing out that the sewers were too small for their work and that the assumption that the main drainage system had freed the brooks and streams from sewage was incorrect. He showed that the Water Commissioners were, and had been, pushing on as fast as possible their plans to acquire the catchment areas. Taking the table of death-rates from typhoid fever in Belfast for the period 1890–1899, excluding the two epidemic years, he showed that the average or normal death-rate from typhoid fever was 54 per 1000 persons per annum, while in the 33 great towns in England for the period 1888–1897 the rate was 19 per 1000.

In other words, independently of epidemics, the annual average or normal death-rate from typhoid fever in Belfast was almost three times the rate in the 33 great towns.[1] He pointed out how the corporate officials had been absolutely silent on this point—viz., that typhoid fever was really endemic in Belfast, the inference being that sanitary defects, not bad water, must be the cause of this, precisely an analogous condition to Dublin where, though the water-supply was admittedly good, typhoid fever was endemic. The engineer of the Water Board claimed to have shown that the visitation of typhoid fever could not be fairly attributed to the Stoneyford water-supply, and he held that other causes and insanitary conditions (which he pointed out) were sufficient to account for all the disease that had occurred, causes and conditions to which he accused the officials of the corporation of having shut their eyes in their report. He quoted Dr. Frankland (in support of the Belfast Water Bill of 1899), who, while supporting the proposals to buy up the water-works catchments, states: "I do not think any case has been made out against the water as having produced the epidemics (of typhoid fever) which Belfast has been subject to from time to time." Finally, the engineer of the Water Commissioners expressed his surprise that, in the present sanitary deadlock now existing in Belfast the public health committee of the corporation did not have an exhaustive examination of the city made by an eminent public expert in public health, such as Dr. A. Hill of Birmingham or Sir Henry Littlejohn of Edinburgh. The public have now heard both sides of the case, that of the public health committee who say the water-supply was the cause of the epidemic, and that of the Water Commissioners who deny this altogether, but blame the bad sanitary state of the city as being the *fons et origo mali*. Meantime, while this wrangling goes on between the City Corporation of Belfast and the Water Board. 62 cases of typhoid fever were notified for the week ending August 26th. No attempt has so far been made to meet the damaging attack of the official of the Water Commissioners. At the monthly meeting of the city council held on Sept. 1st it came out that during the period between July 22nd and August 18th 209 cases of typhoid fever had been notified, 78 of simple continued fever, 36 of scarlet fever, 26 of erysipelas, eight of diphtheria, four of puerperal fever, two of croup, and one of small-pox. The number of cases of typhoid fever, as well as the deaths therefrom are slightly more numerous than in the preceding four weeks. It was extremely unfortunate that just when the council were beginning to discuss this most important question of the typhoid fever outbreak the meeting became so small that the necessary quorum was not present and the consideration of the matter had to be adjourned.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 7042 births and 4824 deaths were registered during the week ending Sept. 1st. The annual rate of mortality in these towns, which had been 20·3, 19·5, and 19·8 per 1000 in the three preceding weeks, rose again during the week under notice to 21·7. In London the rate was 20·2 per 1000, while it averaged 22·6 in the 32 provincial towns. The lowest death-rates in these towns were 11·9 in Halifax, 12·3 in Croydon, 14·1 in Bradford, and 14·2 in Cardiff; the highest rates were 27·9 in Birmingham, 30·6 in Hull, 33·3 in Preston, and 33·6 in Sheffield. The 4824 deaths in these towns included 1422 which were referred to the principal zymotic diseases, against 1061 and 1180 in the two preceding weeks; of these 1156 resulted from diarrhœa, 97 from whooping-cough, 49 from diphtheria, 48 from "fever" (principally enteric), 45 from measles, 24 from scarlet fever and three from small-pox. The lowest death-rates from these diseases were recorded in Halifax, Bradford, Newcastle-upon-Tyne, and Birkenhead; and the highest rates in Bolton, Sheffield, Preston, and Hull. The greatest mortality from measles occurred in West Ham and Swansea; from scarlet fever in Burnley; from whooping-cough in Cardiff, Brighton, and Gateshead; from "fever" in Portsmouth; and from diarrhœa in Birmingham, Bolton, Preston, and Hull. The 49 deaths from diphtheria included 19 in London, 10 in Sheffield, six in Leicester, and three in Leeds. Three cases of small-pox were registered in Liverpool, but not one in any other of the 33 towns. There were two cases of small-pox under treatment in the Metropolitan Asylums Hospitals on Saturday, Sept. 1st, one fresh case having been admitted during the week. The number of scarlet fever patients in the Metropolitan Asylums Hospitals and the London Fever Hospital at the end of the week was 1702, against numbers decreasing from 1838 to 1726 on the three preceding Saturdays; 176 new cases were admitted during the week, against 155, 157, and 140 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had increased from 128 to 149 in the three preceding weeks, fell again during the week under notice to 138, and were three below the corrected average. The causes of 51, or nearly 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, Bradford, and in 11 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Halifax, Sheffield, and Hull.

In 33 of the largest English towns 6888 births and 4375 deaths were registered during the week ending Sept. 8th. The annual rate of mortality in these towns, which had increased from 19·5 to 21·7 per 1000 in the three preceding weeks, declined again to 19·6 last week. In London the death-rate was 18·0 per 1000, while it averaged 20·7 in the 32 large provincial towns. The lowest death-rates in these towns were 10·1 in Derby, 12·4 in Halifax, 12·7 in Bradford, and 13·3 in Blackburn; the highest rates were 25·9 in Sheffield, 26·4 in Leicester, 26·8 in Preston, and 35·6 in Hull. The 4375 deaths in these towns included 1144 which were referred to the principal zymotic diseases, against 1060, 1181, and 1422 in the three preceding weeks; of these 871 resulted from diarrhœa, 101 from whooping-cough, 63 from diphtheria, 52 from "fever" (principally enteric), 37 from measles, and 20 from scarlet fever. The lowest death-rates last week from these diseases occurred in Halifax, Bradford, Blackburn, and Huddersfield; and the highest rates in Wolverhampton, Leicester, Burnley, and Hull. The greatest mortality from measles and from scarlet fever occurred in Oldham; from whooping-cough in West Ham, Nottingham, Derby, Preston, Sheffield, and Gateshead; from "fever" in Portsmouth; and from diarrhœa in Brighton, Wolverhampton, Leicester, Bolton, Manchester, Burnley, and Hull. The 63 deaths from diphtheria included 19 in London, 13 in Leicester, eight in Sheffield, four in Bristol, and four in Manchester. No fatal case of small-pox was registered last week in any of the 33 towns and only three small-pox patients were under treatment on Saturday last, Sept. 8th, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1736, against numbers declining from 1838 to 1702 on the four preceding Saturdays; 213 new cases were admitted during the week, against 157, 140, and 176 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 149 and 138 in the two preceding weeks, further declined last week to 124, and were 25 below the corrected average. The causes of 44, or 1·0 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Manchester, Salford, Newcastle, and in 13 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Norwich, Liverpool, and Halifax.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined from 19·0 to 16·9 per 1000 in the five preceding weeks, rose again to 17·6 during the week ending Sept. 1st, and was 4·1 per 1000 less than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 13·2 in Leith and 13·7 in Dundee to 22·6 in Paisley and 24·4 in Aberdeen. The deaths in these towns included 54 which were referred to diarrhœa, 25 to whooping-cough, nine to measles, five to scarlet fever, five to "fever," and three to diphtheria. In all 101 deaths resulted from these principal zymotic diseases, against 108 and 103 in the two preceding

[1] Local Government Board Report, 1898-99, p. 167.

weeks. These 101 deaths were equal to an annual rate of 3·3 per 1000, which was 1·5 below the mean rate in the week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 56 and 52 in the two preceding weeks, rose again to 54, of which 27 occurred in Glasgow, six in Dundee, and six in Greenock. The deaths referred to whooping-cough, which had been 18 and 23 in the two preceding weeks, rose again to 25, 16 of which were recorded in Glasgow. The deaths from measles, which had been 16 and nine in the two previous weeks, were again nine during the week under notice, and included five registered in Edinburgh. The five deaths from scarlet fever corresponded with the number in the preceding week, and included three in Glasgow and two in Edinburgh. The fatal cases of "fever," which had been five and eight in the two preceding weeks, fell again to five, three of which were recorded in Glasgow, where two of the three deaths from diphtheria also occurred. The deaths from diseases of the respiratory organs in these towns, which had been 59 and 82 in the two preceding weeks, declined to 58 during the week under notice, and were 25 below the number in the corresponding week of last year. The causes of 19, or 3·5 per cent., of the deaths in these eight towns were not certified.

The annual rate of mortality in the eight Scotch towns, which had been 17·9 and 17·6 per 1000 in the two preceding weeks, further declined to 17·5 during the week ending Sept. 8th, and was 2·1 per 1000 less than the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 14·6 in Paisley and 15·1 in Edinburgh to 21·9 in Aberdeen and 23·2 in Greenock. The 540 deaths in these towns included 42 which were referred to diarrhœa, 21 to whooping-cough, seven to measles, five to diphtheria, four to scarlet fever, and four to "fever" (including one death from bubonic plague). In all 83 deaths resulted from these zymotic diseases, against 108, 103, and 101 in the three preceding weeks. These 83 deaths were equal to an annual rate of 2·7 per 1000, which was 2·4 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 52 and 54 in the two preceding weeks, further declined last week to 42, of which 17 occurred in Glasgow, nine in Edinburgh, six in Dundee, and six in Aberdeen. The deaths from whooping-cough, which had increased from 18 to 25 in the three preceding weeks, declined again to 21 last week, and included 11 in Glasgow, five in Greenock, and three in Aberdeen. The fatal cases of measles, which had been nine in each of the two preceding weeks, declined last week to seven, of which three were registered in Glasgow and two in Edinburgh. The deaths from diphtheria, which had declined from seven to three in the three preceding weeks, rose again to five last week and included two in Glasgow. The four fatal cases of scarlet fever showed a slight decline from recent weekly numbers, and included three in Glasgow. The deaths referred to different forms of "fever," which had been eight and five in the two preceding weeks, further declined last week to four, of which two (including the fatal cases of bubonic plague) were recorded in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 82 and 58 in the two preceding weeks, rose again last week to 79, and showed an excess of 25 over the number in the corresponding period of last year. The causes of 25, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

## HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 21·2 and 27·0 per 1000 in the two preceding weeks, declined again to 26·7 during the week ending Sept. 1st. During the four weeks ending Saturday, Sept. 1st, the death-rate in the city averaged 24·5 per 1000, the rate during the same period being 19·8 in London and 16·0 in Edinburgh. The 179 deaths registered in Dublin during the week under notice showed a decrease of two from the number in the preceding week, and included 40 which were referred to the principal zymotic diseases, against numbers increasing from five to 33 in the five preceding weeks; of these 32 resulted from diarrhœa, four from whooping-cough, three from diphtheria, one from scarlet fever and from "fever," and not one either from small-pox or measles. These 40 deaths were equal to an annual rate of 6·0 per 1000, the zymotic death-rate during the same period being 5·3 in London and 2·2 in Edinburgh. The fatal cases of diarrhœa, which had increased from one to 25 during the seven preceding weeks, further rose to 32 during the week under notice. The cases of whooping-cough, which had been one and five in the two preceding weeks declined to four. The deaths from "fever," which had been three in each of the two preceding weeks, fell during the week under notice to one. The deaths referred to diphtheria, which numbered three, showed an increase, none having been registered in the two preceding weeks. The 179 deaths in Dublin included 52 of infants under one year of age and 30 of persons aged upwards of 60 years; the deaths of infants showing a decrease, and those of elderly persons an increase compared with those in the preceding week. Two inquest cases and two deaths from violence were recorded, and 58, or one-third, of the deaths occurred in public institutions. The causes of three, or nearly 2 per cent., of the deaths in the city were not certified.

The death-rate in Dublin, which had been 27·0 and 26·7 per 1000 in the two preceding weeks, further declined to 22·2 during the week ending Sept. 8th. During the past four weeks the death-rate in the city has averaged 24·3 per 1000, the rate during the same period being 19·2 in London and 15·6 in Edinburgh. The 149 deaths belonging to Dublin registered during the week under notice were 30 below the number in the preceding week and included 26 which were referred to the principal zymotic diseases, against 28, 33, and 40 in the three preceding weeks; of these, 20 resulted from diarrhœa, five from whooping-cough, one from "fever," and not one from either small-pox, measles, scarlet fever, or diphtheria. These 26 deaths were equal to an annual rate of 3·9 per 1000, the zymotic death-rate during the same period being 4·0 in London and 2·4 in Edinburgh. The deaths referred to diarrhœa, which had increased from nine to 32 during the five preceding weeks, declined again last week to 20. The fatal cases of whooping-cough, which had been five and four in the two preceding weeks, rose again to five last week. The 149 deaths in Dublin last week included 35 of infants under one year of age and 32 of persons aged upwards of 60 years; the deaths of infants showed a marked decline, while those of elderly persons slightly exceeded the number in the preceding week. Five inquest cases and four deaths from violence were registered, and 53, or more than a third, of the deaths occurred in public institutions. The causes of two, or 1·3 per cent., of the deaths in the city last week were not certified.

## VITAL STATISTICS OF LONDON DURING AUGUST, 1900.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in each of the 43 sanitary areas of London. With regard to the notified cases of infectious diseases in the metropolis, it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·0 per 1000 of the population, estimated at 4,589,129 persons in the middle of the year. In the three preceding months the rates had been 7·2, 6·9, and 7·0 per 1000 respectively. The rates were considerably below the average in Chelsea, St. George Hanover-square, Westminster, St. Martin-in-the-Fields, Clerkenwell, and Wandsworth; while they showed the largest excess in Holborn, Whitechapel, St. George-in-the-East, Mile End Old Town, Poplar, St. Saviour Southwark, and Rotherhithe sanitary areas. Two small-pox cases were notified during August, both being in Wandsworth sanitary area; two small-pox patients were admitted into the Metropolitan Asylums Hospitals during the month, and two remained under treatment on Saturday, Sept 1st. The prevalence of scarlet fever showed a marked decline from that recorded in recent months; among the various sanitary areas this disease was proportionately most prevalent in Whitechapel, Mile End Old Town, St. Olave Southwark, Rotherhithe, Lewisham (excluding Penge), and Lee. The Metropolitan Asylums Hospitals contained 1657 scarlet fever patients at the end of August, against 1735, 1788, and 1804 at the end of the three preceding months; the weekly admissions averaged 152, against 198, 202, and 210 in the three preceding months. The prevalence of diphtheria showed a considerable decline from that recorded in the preceding month; the greatest proportional prevalence of this disease was shown in Whitechapel, St. George-in-the-East, Mile End Old Town, Poplar, St. Saviour Southwark, and Rotherhithe sanitary areas. There

## ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING AUGUST, 1900.

(*Specially compiled for* THE LANCET.)

| SANITARY AREAS. | Estimated population in the middle of 1900. | NOTIFIED CASES OF INFECTIOUS DISEASE. | | | | | | | | | | | DEATHS FROM PRINCIPAL INFECTIOUS DISEASES. | | | | | | | | | | | Deaths from all causes. | Death-rate per 1000 living. | Deaths of infants under one year to 1000 births. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Small-pox. | Scarlet fever. | Diphtheria.* | Typhus fever. | Enteric fever. | Other continued fevers. | Puerperal fever. | Erysipelas. | Cholera. | Total. | Annual rate per 1000 persons living. | Small-pox. | Measles. | Scarlet fever. | Diphtheria.† | Whooping-cough. | Typhus fever. | Enteric fever. | Other continued fevers. | Diarrhœa. | Total. | Annual rate per 1000 persons living. | | | |
| LONDON... ... ... ... ... ... ... | 4,589,129 | 2 | 981 | 942 | 1 | 300 | 6 | 17 | 380 | 1 | 2630 | 6·0 | — | 107 | 30 | 98 | 213 | 1 | 41 | 3 | 1743 | 2236 | 5·1 | 8532 | 19·4 | 282 |
| *West Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Paddington ... ... ... ... ... ... | 130,104 | — | 35 | 11 | 1 | 5 | — | — | 12 | — | 64 | 5·1 | — | 1 | — | 2 | 3 | 1 | 1 | — | 58 | 66 | 5·3 | 203 | 16·3 | 321 |
| Kensington ... ... ... ... ... ... | 173,603 | — | 26 | 19 | — | 5 | — | 2 | 15 | — | 67 | 4·0 | — | 2 | — | 2 | 1 | — | 1 | — | 48 | 54 | 3·2 | 254 | 15·3 | 295 |
| Hammersmith ... ... ... ... ... | 110,203 | — | 23 | 24 | — | 7 | 1 | 1 | 6 | — | 62 | 5·9 | — | — | — | 1 | — | — | — | — | 49 | 50 | 4·7 | 183 | 17·3 | 304 |
| Fulham ... ... ... ... ... ... ... | 136,383 | — | 23 | 37 | — | 8 | — | 3 | 14 | — | 85 | 6·5 | — | 2 | — | 7 | 7 | — | 1 | — | 67 | 84 | 6·4 | 249 | 19·0 | 259 |
| Chelsea ... ... ... ... ... ... ... | 96,715 | — | 10 | 5 | — | 2 | — | — | 6 | — | 23 | 2·5 | — | — | 2 | 2 | 2 | — | 2 | — | 35 | 43 | 4·6 | 156 | 16·8 | 256 |
| St. George Hanover-square ... ... | 81,133 | — | 6 | 9 | — | 2 | 1 | — | 3 | — | 21 | 2·7 | — | — | — | — | — | — | 2 | — | 4 | 6 | 0·8 | 66 | 8·5 | 74 |
| Westminster ... ... ... ... ... ... | 51,657 | — | 7 | 10 | — | 1 | — | — | 4 | — | 22 | 4·4 | — | 1 | — | 1 | — | — | — | — | 9 | 11 | 2·2 | 85 | 17·2 | 239 |
| St. James Westminster ... ... ... | 21,457 | — | 7 | 3 | — | — | — | — | 1 | — | 11 | 5·3 | — | — | 1 | — | 1 | — | — | — | 2 | 4 | 1·9 | 30 | 14·6 | 310 |
| *North Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Marylebone ... ... ... ... ... ... | 139,777 | — | 23 | 23 | — | 4 | — | 1 | 13 | — | 64 | 4·8 | — | 6 | — | 5 | 6 | — | — | — | 35 | 52 | 3·9 | 240 | 17·9 | 208 |
| Hampstead ... ... ... ... ... ... | 81,766 | — | 16 | 15 | — | 4 | — | 1 | 4 | — | 40 | 5·1 | — | 3 | 1 | 1 | 2 | — | — | — | 11 | 18 | 2·3 | 82 | 10·5 | 131 |
| St. Pancras ... ... ... ... ... ... | 245,651 | — | 60 | 61 | — | 20 | — | — | 22 | — | 163 | 6·9 | — | 6 | — | 6 | 9 | — | 7 | 1 | 104 | 133 | 5·6 | 489 | 20·8 | 335 |
| Islington ... ... ... ... ... ... ... | 351,541 | — | 69 | 45 | — | 23 | — | — | 24 | — | 161 | 4·8 | — | 4 | 1 | 4 | 24 | — | 6 | — | 85 | 124 | 3·7 | 522 | 15·5 | 227 |
| Stoke Newington ... ... ... ... ... | 35,718 | — | 7 | 6 | — | 5 | — | 1 | 3 | — | 22 | 6·4 | — | — | — | — | 3 | — | — | — | 4 | 7 | 2·0 | 36 | 10·5 | 227 |
| Hackney ... ... ... ... ... ... ... | 226,519 | — | 43 | 62 | — | 16 | — | — | 20 | — | 141 | 6·5 | — | 3 | 4 | 4 | 7 | — | 1 | — | 119 | 138 | 6·4 | 405 | 18·7 | 162 |
| *Central Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Giles ... ... ... ... ... ... ... | 36,870 | — | 5 | 10 | — | 1 | — | — | 5 | — | 21 | 5·9 | — | — | — | 1 | 3 | — | — | — | 9 | 13 | 3·7 | 51 | 14·4 | 167 |
| St. Martin-in-the-Fields ... ... ... | 11,865 | — | — | — | — | — | — | — | 1 | — | 1 | 0·9 | — | — | — | 1 | — | — | — | — | 1 | 2 | 1·8 | 16 | 14·1 | 143 |
| Strand ... ... ... ... ... ... ... | 22,748 | — | 4 | 6 | — | 1 | — | — | — | — | 11 | 5·0 | — | — | — | — | 1 | — | — | — | 1 | 2 | 0·9 | 28 | 12·8 | 125 |
| Holborn ... ... ... ... ... ... ... | 29,188 | — | 10 | 6 | — | 3 | — | — | 7 | — | 26 | 9·3 | — | 2 | 1 | — | 1 | — | — | — | 15 | 19 | 6·8 | 73 | 26·1 | 333 |
| Clerkenwell ... ... ... ... ... ... | 66,007 | — | 11 | 6 | — | 2 | — | — | 9 | — | 28 | 4·4 | — | 5 | — | 2 | 2 | — | 1 | — | 29 | 39 | 6·2 | 146 | 23·1 | 275 |
| St. Luke ... ... ... ... ... ... ... | 40,655 | — | 8 | 2 | — | 3 | — | — | 5 | — | 18 | 4·6 | — | 2 | 1 | 1 | — | — | 1 | — | 21 | 26 | 6·7 | 108 | 27·7 | 212 |
| City of London ... ... ... ... ... | 26,922 | — | 6 | 7 | — | 3 | — | — | — | — | 16 | 6·2 | — | — | — | — | 1 | — | — | — | 1 | 2 | 7·7 | 47 | 18·2 | 267 |
| *East Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shoreditch ... ... ... ... ... ... | 120,641 | — | 28 | 31 | — | 12 | — | 1 | 17 | — | 89 | 7·7 | — | 3 | 1 | 1 | 3 | — | — | — | 78 | 86 | 7·4 | 252 | 21·8 | 353 |
| Bethnal Green ... ... ... ... ... | 128,831 | — | 28 | 31 | — | 14 | — | — | 15 | — | 88 | 7·1 | — | 5 | 2 | 2 | 5 | — | 1 | — | 51 | 66 | 5·3 | 313 | 25·3 | 307 |
| Whitechapel ... ... ... ... ... ... | 82,220 | — | 61 | 34 | — | 3 | — | — | 8 | — | 106 | 13·4 | — | 4 | — | 4 | 2 | — | — | — | 20 | 30 | 3·8 | 157 | 19·9 | 217 |
| St. George-in-the-East ... ... ... | 48,875 | — | 17 | 19 | — | 5 | — | 2 | 8 | — | 51 | 10·9 | — | 6 | 1 | 1 | 4 | — | 1 | — | 25 | 38 | 8·1 | 145 | 30·9 | 289 |
| Limehouse ... ... ... ... ... ... | 58,944 | — | 16 | 9 | — | 4 | — | 1 | 9 | — | 39 | 6·9 | — | 4 | — | — | 5 | — | — | — | 32 | 41 | 7·3 | 165 | 29·2 | 446 |
| Mile End Old Town ... ... ... ... | 113,781 | — | 40 | 35 | — | 12 | — | — | 13 | — | 100 | 9·2 | — | 4 | 2 | — | 4 | — | 3 | — | 52 | 65 | 6·0 | 281 | 25·8 | 278 |
| Poplar ... ... ... ... ... ... ... | 170,968 | — | 33 | 67 | — | 37 | — | — | 14 | — | 151 | 9·2 | — | 7 | — | 11 | 5 | — | 5 | — | 109 | 137 | 8·4 | 427 | 26·0 | 360 |
| *South Districts.* | | | | | | | | | | | | | | | | | | | | | | | | | | |
| St. Saviour Southwark ... ... ... | 23,854 | — | 8 | 15 | — | — | — | — | 3 | — | 26 | 11·4 | — | — | — | 2 | 2 | — | — | — | 11 | 15 | 6·6 | 64 | 28·0 | 387 |
| St. George Southwark ... ... ... | 60,597 | — | 15 | 15 | — | 3 | — | — | 9 | — | 42 | 7·2 | — | 5 | — | — | 5 | — | — | — | 45 | 55 | 9·5 | 179 | 30·8 | 400 |
| Newington ... ... ... ... ... ... | 125,138 | — | 28 | 29 | — | 9 | — | 1 | 7 | 1 | 75 | 6·3 | — | 3 | 1 | 6 | 10 | — | 1 | — | 62 | 83 | 6·9 | 309 | 25·8 | 285 |
| St. Olave Southwark ... ... ... ... | 10,909 | — | 4 | 1 | — | 1 | — | — | 2 | — | 8 | 7·6 | — | — | 1 | — | — | — | — | — | 1 | 2 | 1·9 | 25 | 23·9 | 159 |
| Bermondsey ... ... ... ... ... ... | 85,920 | — | 17 | 23 | — | 13 | — | — | 7 | — | 60 | 7·3 | — | — | 2 | 4 | 6 | — | — | — | 29 | 41 | 5·0 | 169 | 20·5 | 271 |
| Rotherhithe ... ... ... ... ... ... | 41,246 | — | 16 | 14 | — | 2 | — | — | 8 | — | 40 | 10·1 | — | 1 | 1 | 3 | 4 | — | 1 | — | 19 | 29 | 7·3 | 89 | 22·5 | 358 |
| Lambeth ... ... ... ... ... ... ... | 312,152 | — | 57 | 63 | — | 11 | 3 | 1 | 17 | — | 152 | 5·1 | — | 5 | 1 | 4 | 9 | — | 2 | 1 | 76 | 98 | 3·3 | 539 | 18·0 | 237 |
| Battersea ... ... ... ... ... ... ... | 178,100 | — | 29 | 21 | — | 19 | — | — | 19 | — | 88 | 5·2 | — | 2 | 2 | 8 | 14 | — | 2 | — | 82 | 110 | 6·4 | 357 | 20·9 | 293 |
| Wandsworth ... ... ... ... ... ... | 217,004 | 2 | 41 | 27 | — | 9 | — | 1 | 8 | — | 88 | 4·2 | — | 2 | 1 | 1 | 6 | — | — | 1 | 82 | 93 | 4·5 | 343 | 16·5 | 271 |
| Camberwell ... ... ... ... ... ... | 268,457 | — | 44 | 51 | — | 11 | 1 | — | 15 | — | 122 | 4·7 | — | 1 | — | 6 | 29 | — | — | — | 104 | 140 | 5·4 | 447 | 17·4 | 281 |
| Greenwich ... ... ... ... ... ... | 184,582 | — | 28 | 35 | — | 11 | — | — | 18 | — | 92 | 5·2 | — | 3 | — | 2 | 11 | — | 2 | — | 75 | 93 | 5·3 | 355 | 20·1 | 317 |
| Lewisham (excluding Penge) ... ... | 93,548 | — | 33 | 11 | — | 3 | — | 1 | 3 | — | 51 | 5·7 | — | — | 3 | 1 | 5 | — | — | — | 28 | 37 | 4·1 | 159 | 17·7 | 246 |
| Woolwich... ... ... ... ... ... ... | 41,600 | — | 11 | 4 | — | 1 | — | — | 4 | — | 20 | 5·0 | — | 9 | — | — | 2 | — | — | — | 32 | 43 | 10·8 | 122 | 30·6 | 393 |
| Lee ... ... ... ... ... ... ... | 40,722 | — | 15 | 12 | — | — | — | — | — | — | 27 | 6·9 | — | — | — | — | 2 | — | — | — | 8 | 10 | 2·6 | 48 | 12·3 | 248 |
| Plumstead ... ... ... ... ... ... | 65,558 | — | 13 | 20 | — | 2 | — | — | 2 | — | 37 | 5·9 | — | 6 | 1 | 2 | 7 | — | — | — | 15 | 31 | 4·9 | 118 | 18·8 | 304 |
| Port of London ... ... ... ... ... | — | — | — | 8 | — | 3 | — | — | — | — | 11 | — | — | 1 | — | — | — | — | — | — | — | — | — | — | — | — |

* Including 12 cases of membranous croup.

† Including deaths from membranous croup.

were 1171 diphtheria patients in the Metropolitan Asylums Hospitals at the end of August, against 1402, 1212, and 1256 at the end of the three preceding months; the weekly admissions averaged 142, against 172, 151, and 183 in the three preceding months. The prevalence of enteric fever showed a marked increase over that recorded in recent months; among the various sanitary areas this disease was proportionally most prevalent in Stoke Newington, Bethnal Green, Mile End Old Town, Poplar, Bermondsey, and Battersea. The Metropolitan Asylums Hospitals contained 170 enteric fever patients at the end of August, against 176, 148, and 129 at the end of the three preceding months; the weekly admissions averaged 32, against 24, 21, and 20 in the three preceding months. Erysipelas was proportionally most prevalent in Holborn, Shoreditch, St. George-in-the-East, St. George Southwark, St. Olave Southwark, and Rotherhithe sanitary areas. The 17 cases of puerperal fever included three in Fulham, two in Kensington, and two in St. George-in-the East sanitary areas.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various sanitary areas of the metropolis, the deaths occurring in the public institutions of London having been distributed among the sanitary areas in which the patients had previously resided. During the five weeks ending Sept. 1st the deaths of 8532 persons belonging to London were registered, equal to an annual rate of 19·4 per 1000, against 16·6, 14·8, and 15·7 in the three preceding months. The lowest death-rates last month in the various sanitary areas were 8·5 in St. George Hanover-square, 10·5 in Hampstead and in Stoke Newington, 12·3 in Lee, 12·8 in Strand, and 14·1 in St. Giles; the highest rates were 26·1 in Holborn, 27·7 in St. Luke, 28·0 in St. Saviour Southwark, 29·2 in Limehouse, 30·6 in Woolwich, and 30·9 in St. George-in-the-East. During the five weeks of August 2236 deaths were referred to the principal zymotic diseases in London; of these, 107 resulted from measles, 30 from scarlet fever, 98 from diphtheria, 213 from whooping-cough, one from typhus, 41 from enteric fever, three from simple continued fever, and 1743 from diarrhœa. The lowest death-rates last month from these diseases occurred in St. George Hanover-square, St. James Westminster, Stoke Newington, St. Martin-in-the-Fields, Strand, and St. Olave Southwark sanitary areas; and the highest rates in City of London, Shoreditch, St. George-in-the-East, Poplar, St. George Southwark, and Woolwich. The 107 deaths from measles were only one-half of the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Holborn, Clerkenwell, St. George-in-the-East, Limehouse, St. Saviour Southwark, and Woolwich sanitary areas. The 30 fatal cases of scarlet fever showed a decline of 66 from the corrected average number; the greatest proportional mortality from this disease occurred in St. James's Westminster, Holborn, St. Luke, St. Olave Southwark, Rotherhithe, and Lewisham (excluding Penge) sanitary areas. The 98 deaths from diphtheria were 102 below the average number in the corresponding periods of the ten preceding years; among the various sanitary areas this disease was proportionally most fatal in Fulham, St. Martin-in-the-Fields, Whitechapel, Poplar, St. Saviour Southwark, and Rotherhithe. The 213 fatal cases of whooping-cough were 55 in excess of the corrected average number; this disease showed the highest proportional fatality in Stoke Newington, Limehouse, St. Saviour Southwark, Rotherhithe, Camberwell, and Plumstead sanitary areas. The 45 deaths referred to "fever" showed a decline of 14 from the average number in the corresponding periods of the ten preceding years; among the various sanitary areas the "fever" death-rate was highest in Chelsea, St. George Hanover-square, St. Pancras, Islington, Mile End Old Town, and Poplar. The 1743 fatal cases of diarrhœa were 427 in excess of the corrected average; this disease was proportionally most fatal in Hackney, Shoreditch, Limehouse, Poplar, St. George Southwark, and Woolwich sanitary areas. In conclusion, it may be stated that the aggregate mortality from these principal zymotic diseases in London during August was more than 9 per cent. above the average.

Infant mortality in London last month, measured by the proportion of deaths of children under one year of age to registered births, was equal to 282 per 1000. The lowest rates of infant mortality were recorded in St. George Hanover-square, Hampstead, Hackney, St. Martin-in-the-Fields, Strand, and St. Olave Southwark; and the highest rates in Limehouse, Poplar, St. Saviour Southwark, St. George Southwark, Rotherhithe, and Woolwich sanitary areas.

# THE SERVICES.

## ROYAL NAVY MEDICAL SERVICE.

THE following appointments are announced:—Staff Surgeons: J. F. Barry to the *Sappho;* J. H. Thomas to the *Devastation;* J. Acheson to the *Gladiator;* and G. H. Foott to the *Warspite* for the *Phaeton*. Surgeons: H. E. C. Fox to the *Gladiator* and B. F. Parish to the *Pelorus*.

## INDIA AND THE INDIAN MEDICAL SERVICES.

Captain K. V. Kukday will officiate as Civil Surgeon at Aden in addition to his own duties. The services of Major H. C. Hudson are replaced at the disposal of the Military Department. Captain A. R. S. Anderson is appointed to be Senior Medical Officer at Port Blair. The services of Captain J. M. Crawford, Captain J. S. S. Lumsden, Captain C. Milne, and Captain H. Austen Smith are replaced at the disposal of the Government of India, Home Department. Lieutenant-Colonel H. Allison and Major G. H. Fink have been granted furlough for one year. Major A. J. O'Hara has been appointed to act as District Medical and Sanitary Officer, Chingleput, during the employment of Captain G. G. Giffard on other duty. Captain R. G. Turner has assumed charge of the Civil Medical duties of the Tochi Valley. The following officers (under Civil Leave Rules) have been recalled to duty:—Lieutenant-Colonel G. S. A. Ranking, Lieutenant-Colonel J. W. Macnamara, Lieutenant-Colonel J. Lewtas, Lieutenant-Colonel T. Grainger, Lieutenant-Colonel R. N. Campbell, Lieutenant-Colonel B. Doyle, Lieutenant-Colonel G. W. P. Dennys, Lieutenant-Colonel S. J. Thomson, C.I.E., Lieutenant-Colonel E. S. Brander, Lieutenant-Colonel F. F. MacCartie, Lieutenant-Colonel W. A. Lee, Major G. F. W. Braide, Major F. C. Clarkson, Major E. C. Hare, Major C. N. Bensley, Major W. Vost, Major R. Shore, Major A. Coleman, Major D. G. Crawford, Major F. J. Drury, Major A. O. Evans, Major E. R. W. Carroll, Major W. G. Alpin, Major R. H. Castor, Major A. V. Anderson, Major B. B. Grayfoot, Captain H. B. Melville, Captain C. Duer, Captain J. Jackson, and Captain J. B. Smith.

Colonel C. A. Maunsell, R.A.M.C., the Principal Medical Officer of the Mhow District of the Indian Army, will retire shortly. He served with the Royal Artillery in the Bhootan campaign of 1864-65, and was present at the capture of Fort Buxa and the taking of the Bala Pass. He also served in the Egyptian war of 1882, and was awarded the medal and Khedive's star.

Captain H. Smith has taken over charge of the duties of Superintendent of Jullunder Jail. Lieutenant J. A. Dredge has made over charge of the duties of Superintendent of the Bannu Jail to Lieutenant F. V. O. Beit. Captain N. Rainier has assumed charge of the Civil Medical duties of Abbottabad, relieving Captain F. R. Ozzard. Lieutenant J. W. F. Rait has assumed charge of the Civil Medical duties of Kurram, relieving Lieutenant P. Atal. Captain P. St. Clair More has assumed charge of the Civil Medical duties of Kohat, relieving Captain J. Mulvany. Lieutenant-Colonel S. Little has resumed charge of the office of Civil Surgeon, Rawalpindi, relieving Major G. B. Irvine.

Miss V. Adams, M.B., C.M. Edin., has been appointed Assistant Superintendent of the Government Maternity Hospital, Madras.

## YEOMANRY CAVALRY.

Pembroke: Surgeon-Major G. R. T. Phillips to be Surgeon-Lieutenant-Colonel.

## VOLUNTEER CORPS.

*Royal Engineers* (Volunteers): 1st London: Surgeon-Lieutenant S. R. Dyer to be Surgeon-Captain. Submarine Miners: The Tees Division: Surgeon-Lieutenant J. W. Edwards to be Surgeon-Captain. *Rifle:* The Queen's Rifle Volunteer Brigade (Highland Battalion) Lothian Regiment (Royal Scots): Dr. James Mowat to be Surgeon-Lieutenant and Mr. John Cumming to be Surgeon-Lieutenant.

## TRANSVAAL WAR NOTES.

Major H. J. R. Moberly, R.A.M.C., Captain T. B. Beach, R.A.M.C., and Civil Surgeon Aymard lately prisoners of war, have arrived at Lorenzo Marques from Nooitgedacht, and will be sent to Durban.

Major Lawless, R.A.M.C., has been discharged from hospital to duty.

Dr. Howard Tooth has returned from South Africa after eight months' service with the Portland Hospital.

The hospital ship *Simla* has left Cape Town for England with Major W. B. C. Deeble, R.A.M.C., in charge of the sick and wounded, among whom were Major A. O. Fitzgerald, R.A.M.C., Captain Crawford, R.A.M.C., Lieutenant Croly, R.A.M.C., and Civil Surgeons W. B. Bennett and J. G. Willis.

The Welsh Hospital, now in Pretoria, has been increased from 150 to 200 beds.

The Imperial Yeomanry Branch Hospital at Maitland has about 70 patients.

Civil Surgeon J. Prestwick died from pneumonia on August 23rd at the General Hospital, Howick. Civil Surgeon H. A. Scott died from enteric fever at Pretoria on August 24th.

Lieutenant A. H. Benson, Militia Medical Staff Corps, has left Cape Town for England.

In an engagement near Warmbaths on Sept. 3rd, Mr. A. Cradock Fry, 9th Battalion Imperial Yeomanry, was taken prisoner while attending a wounded man.

### THE OPERATIONS IN CHINA.

Captain B. H. McCalla, of the United States vessel *Newark*, in a report to the United States Navy Department, wrote: "I beg also to suggest and ask that the following mentioned officers of the naval forces acting concurrently for the relief of the Legations in Peking be offered medals for aiding the United States force under my command and for supporting us in action, by reason of which our loss of killed and wounded was not greater." Captain McCalla's list includes the names of "Fleet-Surgeon Thomas M. Sibbald, R.N., and Surgeons Edward B. Pickthorn and Eric D. Macnamara, R.N., for skilful treatment of 25 wounded Americans, notwithstanding they had the care of a great number of their own wounded."

### DEATHS IN THE SERVICES.

Major George Hilliard, C.M.G., R.A.M.C., at the General Hospital, Newcastle, South Africa, on Sept. 7th, from a gunshot wound in the abdomen. He received his medical education at Trinity College, Dublin, where he graduated as M.B. and B.Ch. in 1885. He became Surgeon-Captain in 1887 and served with the Ashanti expedition under Sir Francis Scott in 1895–96, being awarded a star. He was promoted to be Major in February, 1899.

The Secretary of State for War has approved of revised regulations for the Army Nursing Service, which are to be taken into use at once.

# Correspondence.

**"Audi alteram partem."**

## "PROFESSIONAL ORGANISATIONS."

*To the Editors of* THE LANCET.

SIRS,—As the writer of the address which originated the present correspondence on this subject, perhaps I may be allowed to express my sympathy with Dr. James Ryley in his repugnance to any adoption by our profession of the methods of trade unions. I am convinced that such a course will alienate professional opinion and indefinitely delay the progress of reform. But while we cannot adopt the crude methods of the boycotter, it is necessary that we should have some means of bringing pressure to bear on those among us whose standard of ethics is so low as to be a source of injury and discredit to the whole body. It seems to me that the remedy lies in the education and elevation of the aforesaid professional opinion. The chief method of attaining this end is the encouragement by every possible means of local organisations. Every new-comer to a town or district should be informed that he is *expected* to become a member, and not to belong to the local society should stamp a man as an "outsider" in every sense of the word. Thus professional opinion could in every case be brought to bear on all disputed points. There should be an official code of ethics placed in the hands of every man on his qualification, and students should be taught that infringement of this code would prove an effective bar to an honourable career. At the same time no attempt should be made to obtain legal sanction for any such code. It was rightly said at the recent Paris Congress that "Deontology (the science of duty) has nothing to do with the civil law, which it entirely goes beyond." Also, "There are means of suppressing crime—these are punishments; there is another for correcting manners—this is example."

I am, Sirs, yours faithfully,

Sept. 10th, 1900. W. G. DICKINSON.

*To the Editors of* THE LANCET.

SIRS,—In reply to the letter of Mr. W. E. Wyllys in THE LANCET of Sept. 8th, p. 769, I wish to express my great pleasure that he agrees (although he does not say why) as to the desirability of a central representative body. I am delighted also to hear that the district committee of which he is the secretary are prepared to help the institute doctors in any really urgent case. This is to me quite a revelation, and contrasts curiously with the subjoined resolution and with the rejection by the committee of my own modest proposal. I have inquired carefully and cannot discover that an institute doctor has, under any circumstances, been met by any member of the district committee. But I am informed that when a member of the district committee was in despair over a bad case of post-partum hæmorrhage he accepted the aid of one of the institute doctors and rewarded the latter by cutting him (figuratively) the following day. To justify my own position I quote, precisely, the resolution of the district committee, passed unanimously at the annual meeting on Jan. 29th, 1897—a resolution never modified, never rescinded, and still in force:—

> That this district committee of the I.M.P.A. holds that those medical men who accept the posts of surgeons to the Great Yarmouth Friendly Societies Institute (considering the circumstances under which it was established) are acting in contravention of the rules and ethics of the profession; and therefore no member of this district committee can meet such surgeons in consultation, or hold any professional intercourse with them. Further, that medical practitioners in the town and neighbourhood (whether members or non-members of the committee) who do consult with institute surgeons are, in an equal degree, acting against the ethics of the profession, and accordingly members of the district committee *must*, under their rules and by-laws, refuse to meet such practitioners in consultation, or to have professional intercourse with them in any way whatever.

It is interesting to note how the field of vision of the medical eye, from its centre to its periphery, is filled with the wicked institute surgeon and how entirely the patient is ignored—no room for him whatever. I was not the only absentee from the meeting, for the resolution was passed by an oligarchy of six. I have had the temerity of making the following atrocious proposition:—

> That we meet institute doctors in consultation in the case of men properly belonging to clubs who are dangerously ill, and urgently, so far as can be ascertained, in need of further advice.

I have just received a note from Messrs. Moxon and Wyllys (president and secretary respectively) that it is "the resolution of the district committee to adhere to its position and consequently to reject your proposal." Very curious for persons who are prepared to help the institute surgeons, &c., is it not? Why, Sirs, my proposal is simply common humanity, and no threats of ostracism or of boycotting from the district committee shall persuade or frighten me to depart from it. *Re* London consultants, Mr. Wyllys denies my statement. Surely it is due to me to do more than this and to explain, as secretary, what is the attitude of the district committee towards these gentlemen. I press for a reply on this point.

On the subject of boycotting I have permission to quote the following letter I lately received from a much-esteemed consultant, whose aid we G.P.'s of Yarmouth are frequently invoking:—

> My personal feelings quite agree with yours. I have long felt that such trades-unionism ill becomes a profession which is supposed to consist of educated gentlemen and that *the only effect*, so far as I can see, is to reduce in the eyes of the lay public what ought to be a noble profession to the status of a trade. This boycott has the effect (and there is no use shutting our eyes to the fact) of lowering the social status of the profession in the view of the educated public—a thing which we must all deeply deplore, and which I fear will in the future help to deter the *better* class of the youth of to-day electing to choose medicine as an honourable profession.

As I am a very busy man medically and municipally, with little time to spare, I hope, Sirs, this is the last communication I may have to make to your columns on "Professional Organisations." With many thanks for your editorial comments, I remain, Sirs, yours faithfully,

JAMES RYLEY, M.D. Lond.

Great Yarmouth, Sept. 10th, 1900.

## "THE COVENTRY DISPENSARY."

*To the Editors of* THE LANCET.

SIRS,—I hope the profession in Coventry does not endorse the language of Dr. Richardson Rice when he says that he will give "the consultants of Birmingham an opportunity of deciding whether in the future they are prepared to uphold the honour of the profession or the interests of their pockets." May we put aside for the moment the honour of the profession, which does not appear to be in question, and remember that this is a matter of pounds, shillings, and pence, in which a section of the medical profession of Birmingham is to be asked to make a definite pecuniary sacrifice in order to help the profession in Coventry to raise their fees? I have already stated that I have every belief in the willingness of the medical profession in Birmingham to give the most careful consideration to any application coming to us from the profession in Coventry, but language of this sort does not help matters. It makes one wonder whether the failure hitherto experienced by the profession in Coventry to obtain the desired changes in the organisation of the dispensary may not have been due to this unconciliatory, indeed I might say the discourteous and quarrelsome, temper displayed by those who unfortunately are put forward as their spokesmen. There are many men in the profession who urge with incontrovertible truth that no boycotting resolution would justify a refusal to render assistance in an urgent case and therefore there is always a loophole by which those who do not wish to be bound by it may escape. If the scheme is to succeed there must be a strong unanimous feeling that the reforms asked for are wise, moderate, and just and that those who ask for them are animated by a genuine desire for reform and not by animus against an institution or the persons connected with it. I am, Sirs, yours faithfully,

Birmingham, Sept. 11th. ROBERT SAUNDBY.

*To the Editors of* THE LANCET.

SIRS,—I should not have troubled you further, but Dr. Saundby speaks of my letter as being uncandid and unfair and as causing him irritation. I have no quarrel with Dr. Saundby and certainly should not like to be unfair to him, but I should like to remind him that at Ipswich he asked "why the men came to the meeting year after year howling at the Coventry Dispensary," and if he can reconcile such a statement with rendering assistance to the cause of reform in Coventry I shall have nothing more to add. My letter in THE LANCET of August 25th has fully explained the situation, and as all the statements are accurate I cannot do more than supply the facts. Dr. Saundby was appealed to, as I have stated, to support the profession in Coventry, and we who laid the case before him were representing the majority of medical men practising in the town.

Does Dr. Saundby wish your readers to understand that he usually acts in a dual capacity, one as President of the Council of the British Medical Association and the other as a consulting physician of Birmingham—in the former position supporting the profession against a condemned institution, and in the latter supporting the institution against the profession? Surely the fact of his being approached as the President of the Council should not lead him to suppose that he was not acting as one of the profession in Birmingham.

In conclusion, I quite agree with Dr. Saundby that false charges would not hasten the cause of reform which Coventry seeks to apply to its professional life, but a thorough mastery of the facts by him would in all probability bring this discussion to a close. I am, Sirs, your faithfully,

Coventry, Sept. 11th, 1900. EDWARD PHILLIPS.

*To the Editors of* THE LANCET.

SIRS,—I have read with considerable interest the letters upon the Coventry Dispensary and I do not wish to further prolong the discussion, as I think I observe in Dr. Saundby's recent letters to the journals a desire to aid the profession in stamping out these degrading conditions of unjust and uncalled-for medical aid regulated by a lay element which totally disregards the advice and counsel of its medical officers. The Coventry Dispensary is entirely under the control of a committee of men who have so much confidence in themselves and in the management of that which seems to be the business and training of a medical man that they not only have sole charge of the finance, but exercise their prerogative as to how these medical men must carry on their profession.

The real reason of this terrible condition of things is this, that this institution has grown so large that even at the rate of nearly one farthing per head per week, which is about the sum paid to the medical officers, the return in the aggregate amounts to something over £300 a year to each medical man, and the certainty of this substantial sum overrules the professional instincts expected to be found in those belonging to so learned and honourable a calling. Nevertheless, I do hope that by the assistance of the heads of the profession, and of those who should set an example by action or by advice, the day will come when the medical men of the Coventry Dispensary will return to the fold of that great body of registered practitioners who, from their liberal education and the oath of allegiance to their *alma mater*, should do all such matters and things to the honour of the noble calling to which they belong.

I am, Sirs, yours faithfully,

CHARLES WEBB ILIFFE,
Coroner, North Warwickshire.

Willenhall, Coventry, Sept. 11th, 1900.

## "THE CAUSE OF CARIES OF THE TEETH."

*To the Editors of* THE LANCET.

SIRS,—I have followed with much interest the correspondence in THE LANCET on the above subject. I fully agree, on general biological grounds, with the views of the writers who hold that disuse or imperfect use of the jaws during growth tends to lead to the faulty condition of jaws and teeth so frequently met with in the newer generations of civilised men, and of those who have recently come under the influence of civilisation. In my opinion the condition, as far as the jaws are concerned, is one of "imperfect evolution" and "stunted growth" rather than of "atrophy"—which latter term implies a previous normal condition in the individual affected. I also subscribe to the view that disuse of the teeth tends to their deterioration and degeneration prematurely. But this, as are most etiological problems, is a complex one. I beg to be permitted to bring to the notice of those who are working at the elucidation of this subject, as well as your readers generally, a paper read by me before the Odontological Society of Great Britain (and published in the Transactions of that society in January, 1890), entitled, "Nasal Obstruction and Mouth Breathing as Factors in the Etiology of Caries of the Teeth and in the Development of the Vaulted Palate." In this paper I claimed for these factors an important share in the production of caries and vaulted palate, but the paper appears to have escaped the notice of recent writers on the subject. Ten years' further experience has only added strength to my conviction that in nasal obstruction and mouth-breathing we have an even more powerful and more common factor in producing these abnormalities than in the character or mode of preparation of the food.

I am, Sirs, yours faithfully,

SCANES SPICER, M.D., B.Sc. Lond.

Welbeck-street, W., Sept. 12th, 1900.

*To the Editors of* THE LANCET.

SIRS,—You have kindly published a letter of mine in THE LANCET of Sept. 8th suggesting that the removal of the wheat-germs from the flour by roller-milling causes defective teeth owing to mal-nutrition. As I wish to keep the two points—defective teeth and caries of the teeth—as far as possible distinct, it is hoped you will excuse me again addressing you. As is mentioned in the report of the Decay of Teeth Committee of the British Medical Association the mouths of men working in flour-mills invariably present extensive decalcification of the enamel and dentine. In milling 2 per cent. loss by waste is reckoned in converting wheat into flour. Much of this waste floats in the air, and the men working in the mill are likely to have a proportion of unfermented wheaten starch in the mouth, and, owing to the action of the saliva, an almost continuous supply of lactic acid bathing their teeth. When the wheat-germs are in the flour a proportion of the starch is converted into grape-sugar during baking, and thus lactic acid is evolved while the bread is in the oven; instead of, as when there is no diastase in the flour, being evolved in the

mouth to decay the teeth. Thus if the wheat-germs are removed, as in roller-milling, a greater amount of fermentation takes place in the mouth and a large amount of lactic acid is formed there to cause caries of the teeth.

The sub-committee of the British Dental Association, which some years ago examined the teeth of many school-children, reported that the children of certain low-class schools had better teeth than those of the high-class schools. I have suggested that this fact was due to the children of these low-class schools having been largely fed on contract bread such as is supplied to many unions. This contract bread contains wheat-germs which the roller-miller has removed while making the flour for his higher class customers. The earliest forms of mills, the old stone hand-mills, are still to be found in India, but are rapidly being replaced by gigantic roller-mills. I am informed that now the natives are commencing to have bad teeth. It appears that wherever the roller-mill is in operation carious teeth are found instead of the sound ones of the days of the stone-mill.

I am, Sirs, yours faithfully,

THOMAS G. READ, D.M.D. Harvard, L.D.S.R.C.S. Eng.

Cavendish-square, W., Sept. 8th, 1900.

## "A NOTE ON THE SAFEST METHOD OF REMOVAL OF THE APPENDIX."

*To the Editors of* THE LANCET.

SIRS,—I see in THE LANCET of August 4th, p. 328, in "A Note on the Safest Method of Removal of the Appendix," a curious statement connecting my name with a method of treating the stump in appendicectomy, which I have *never* followed. The writer says: "The continental method—that commonly followed by Terrier, Hartmann, and most Paris surgeons—is simply to ligature the inflamed and diseased appendix near its base, resect it with the thermo-cautery, cauterise the stump, and then let it fall back into the abdomen." I have never used it because it is my principle in abdominal surgery never to leave a stump in the abdominal cavity and never to consider an operation completed without perfect union of all peritoneal surfaces. Moreover, I never use the cautery in abdominal surgery. I cut the peritoneum and the muscular coats of the appendix, I ligate the mucous membrane, and I invaginate this very small stump in the parietes of the cæcum, placing a continuous Lembert suture on the external coats of the intestine, so that when the operation is finished infection from the stump is impossible.

I am, Sirs, yours faithfully,

Paris, Sept. 10th, 1900. DR. HARTMANN.

## "THE PRESENT POSITION OF PATHOLOGY IN ENGLAND."

*To the Editors of* THE LANCET.

SIRS,—The letter of Dr. C. Powell White in THE LANCET of Sept. 1st raises a subject of great interest to the public and the medical profession. It is true that clinical observation is invaluable and can never be replaced, but it is also a fact that diagnosis is increasingly being assisted by pathological methods, and disease prevented—e.g., rabies has been recently practically extinguished in this country by the application of a simple method suggested by pathology. Indeed, pathology has emerged from a pure to an applied science, as is evidenced by the multiplication of laboratories attached to hospitals and health departments in all countries. It is from the aspect of an applied science that many have to view pathology, including myself. Strange to say this application of scientific methods to medicine benefits the public and the profession as a body, but not the actual workers in pathology. Judging from an analogy in commerce—viz., the success of firms that employ scientific chemists at high fees—the policy is narrow. The labourer is worthy of his hire, why not the pathologist? It must be acknowledged that attempts are made to "sweat" pathologists and to belittle the work, for the attitude of the profession and the public in this country is somewhat behind the age. It savours of that past British disfavour of "scientific" methods as compared with "practical," which cannot, or will not, realise that action and thought can be combined successfully. In commerce we are learning this by some very rough lessons.

Now is the time ripe for the profession in this country to consider and determine the true value to set on the subject, and on the rewards of the pathologist (whether he practise it solely or associates it with clinical or state medicine) and so to mould public opinion. What valid reasons can be given for refusing to pathology the remuneration accorded to other special branches of medicine? None. Failing this due recognition what is the fate of such cheap work? In the end it deteriorates. The poorer classes should have facilities for pathological examinations as for other branches of medicine, and to this end committees of hospitals should assist this department in every way, and county or municipal authorities should provide health laboratories. As an assistance to the poor only are research associations of value, for by allowing the well-to-do to escape a just toll they damage the profession and indirectly the science in question. The reason that the status granted by many to the pathologist is not rendered by all, as Dr. Powell White says, is not clear; it appears to be connected with the degree of knowledge and courtesy of those with whom he has to deal. Therefore I venture to urge that the attention of pathologists, pathological societies, and the pathological committee of the British Medical Association should be actively directed to the matter, since it affects the medical and public welfare. I am, Sirs, your faithfully,

Plymouth, Sept. 8th, 1900. F. BUSHNELL, M.D.

## NEGATIVE SERUM REACTION IN A CASE OF TYPHOID FEVER COMPLICATED WITH LUNG TUBERCULOSIS.

*To the Editors of* THE LANCET.

SIRS,—The errors that exist in connexion with Widal's test as a means of diagnosing typhoid fever are few. Dr. Horton-Smith in his Goulstonian Lectures, as quoted in THE LANCET of April 14th, says that the estimate of 3 per cent. of failures in the agglutinizing power of the blood in undoubted cases of enteric fever is possibly a high one. Yet the fact that fallacies exist at all detracts from the value of the reaction as a feature to be absolutely relied on, and gives an element of uncertainty to those individual cases where the symptoms are anomalous and mistakes especially important to avoid. In the *Archives de Médecine et de Pharmacie Militaires* for January, 1900, a description was given of a case where typhoid fever in a tuberculous individual did not give the serum reaction, and in mentioning to your readers a somewhat similar case I do so in the hope that the attention of workers in the subject may be directed to other pathological conditions present with special relation to the effect they have on the serum reaction. The patient was a married woman, 36 years of age, whose family history was of a markedly tuberculous character. She had herself been treated for "consumption of the left lung" some six years ago, but had improved considerably since then. In March, 1899, however, an attack of hæmoptysis laid her up. When the case first came under my observation in December last complaint was made of general symptoms of a fever, which later proved to be typhoid fever. The typical rose-coloured rash appeared on the ninth day of the illness and successive crops of the papules came out until the eighteenth day. The abdomen had in the meanwhile become tender all over; it was fuller than normal; the spleen was enlarged; and soft watery stools were passed three or four times daily. The temperature rose gradually and the chart did not at any time show a greater morning remission than 2°. From the beginning a troublesome cough developed. The physical signs in the chest were those of a diffuse bronchitis with the exception, however, of a dull patch in the right apex where amphoric breathing and metallic râles could be detected. Sputum was brought up in large quantities with greenish masses and a great many nummular pieces. On the ninth day some blood was sent to the Clinical Research Association, from which body I received a report that it did not give the typhoid reaction. Two sharp attacks of hæmoptysis were noted during the illness, the first on the ninth and the next on the eighteenth day. In the fifth week improvement was noted in the abdominal symptoms; the temperature was lower by 2° and was distinctly not of a hectic type. The cough, however, persisted, keeping the patient awake at nights. By the seventh week all the abdominal symptoms disappeared but the pyrexia and cough persisted. About this time physical examination of the lungs showed signs of cavity at the right apex and some consolidation of a patch below the left clavicle. As it was

now considered that the activity of the lesion of the lungs was alone keeping up the pyrexia solid food was allowed. The appetite was extremely good. The patient has since improved greatly in health and at the time of writing (September) a fair amount of weight has been put on.

I am, Sirs, yours faithfully,

DAVID A. BELILIOS, M.R.C.S. Eng., L.R.C.P. Lond.

Wimbledon, S.W., Sept. 8th, 1900.

## "HALLUX RIGIDUS."

*To the Editors of* THE LANCET.

SIRS,—Both the letter of Mr. Lucy[1] and the article by Mr. Haward[2] to which it relates seem to ignore a surgical rule for which I have long contended in THE LANCET[3] and elsewhere; that whenever there is in the metatarso-phalangeal joint of the great toe irritation which is disproportionate to the degree of eversion, the great toe will be found to have been habitually packed *beneath* the second and that to set it free to resume the *position of rest* is the principal indication for treatment.

I am, Sirs, yours faithfully,

Gloucester, August 25th, 1900. T. S. ELLIS.

## "THE EXPECTANCY OF LIFE IN CASES OF CANCER OF THE BREAST."

*To the Editors of* THE LANCET.

SIRS,—I have been much interested in Mr. Barker's clinical lecture on the above subject published in THE LANCET of Sept. 8th. Such an accurate and careful analysis of cases as is there given is undoubtedly of the highest value. In one point, however, I think the statistics are defective in that it is not stated how many were cases of carcinoma of the right and left breast respectively. My reason for drawing attention to this omission is that my own clinical experience leads me to the opinion that the prognosis in cases of carcinoma of the right breast is not so favourable as that of the left *as regards the spread to internal organs*. I am inclined to think that inquiry will show that the liver is sooner and more frequently attacked in carcinoma of the *right* breast than that of the left. If this be so—and the arrangement of lymphatics favours it—then the expectancy of life in cases of cancer of the breast must be reckoned separately, and the two mammæ not placed on the same footing as is assumed now in all such statistics. This point of omission also characterises the valuable tables on the same subject published by Mr. Watson Cheyne. I have seen him since his return from South Africa, and he has kindly said that he will look into the matter.

I know that there is a difference of opinion amongst authorities as to which breast is most frequently attacked primarily by carcinoma. Mr. Roger Williams says that "nearly all statistics show that in women the left breast is more frequently affected than the right," while Mr. Marmaduke Sheild's cases at St. George's Hospital give only a slight preponderance in favour of the left mamma. Mr. Bryant, again, finds the proportion nearly equal, and Mr. Gross considers right mammary cancer to be more frequent than that of the left. Be that as it may, I am inclined to think that the expectancy of life is not so good in cancer of the right breast as in that of the left, owing to the greater liability to secondary involvement of the liver in the former case. As statistics like those of Mr. Barker might help to establish or refute this opinion I have ventured to draw attention to what I regard as an omission in them.

I am, Sirs, yours faithfully,

Glasgow, Sept. 8th, 1900. GEORGE THOMAS BEATSON.

## THE FUNCTION OF THE SYMPATHETIC AS A FACTOR IN ACUTE DISEASE.

*To the Editors of* THE LANCET.

SIRS,—In a recent article on Tachycardia following Enteric Fever,[4] while acknowledging my indebtedness to Surgeon-Captain P. C. Fenwick for his kind help in prosecuting the investigations on which the article in question was based, I stated that he had adduced a theory of sympathetic irritation underlying the symptoms I endeavoured to describe, which, however, I could not bring myself to accept as a cause of the rapid pulse rate and other features portrayed in my article.

Surgeon-Captain Fenwick has the courage of his convictions and has accordingly adduced his reasons in an article appearing in THE LANCET of August 11th (p. 402). I cannot help regretting that he appears to have fallen into the error so commonly pursued and, if I may so say without offence, so convenient to adopt when the difficulty of explaining an obscure nervous disease arises—to refer such trouble to the sympathetic nervous system. This tendency is by no means peculiar to himself. I have not infrequently noticed when no pathological lesion can possibly be suggested, and the functions of the heart are deranged, how customary it is to suggest that the symptoms should be referred to reflex action. This, after all, seems to be merely one way of begging the question, for the premiss equals the conclusion that the symptoms are the manifestations of functional disturbances of the organ which is controlled by the sympathetic, and therefore the sympathetic must be at fault. The suggestion of the reflex action is only a further instance of the same fallacy. It is with many of us, and far too much the habit of teachers and their followers, to seek everlastingly for some local and specific lesion to account for symptoms—to desire realism and to ignore the psychical element, to disregard the fact that after all the brain is the great centre, not only of control exercised over all actions, both voluntary and reflex, but in addition the receiver and sole interpreter of all impressions from without—that besides being the executive of the will it is also the throne of the intelligence.

Now in the study of disease and its symptoms such consideration should always present itself to the mind of every thoughtful physician, and if this is the case it seems to me that the first explanation of many functional disorders ought to be the psychical one. In my cases, with symptoms described as seen in the epidemic of enteric fever so prevalent in the army in South Africa, the fatiguing work and forced marching, worry, anxiety, poor food, and bad sanitation inseparable from such a campaign would all tend to demoralise the central nervous system, including both the mental processes and physical energies, to such a degree that any organ might be readily irritated and disturbed in its normal workings; and I would maintain that merely to refer these conditions to an affection of the sympathetic is wholly unsatisfactory. The irritable heart of the soldier of the American Civil War has often been written about, and is an illustration of the cardiac disturbance I have described. It is significant that these cases occurred without the intervention of acute disease and that the cardiac trouble was more frequently complained of by the civilian volunteers than by the militia, this fact being probably due to the more sensitive nervous system of the town-bred man.

I have only to add in conclusion that in lunatic asylums many curious vagaries of the heart and circulation are constantly observed without definite organic disease being discoverable. I am, Sirs, yours faithfully,

Sept. 10th, 1900. CHARLES BURLAND, M.D. Brux.

[1] THE LANCET, August 18th, 1900, p. 548.
[2] THE LANCET, July 28th, 1900, p. 240.
[3] THE LANCET, April 29th, 1899, p. 1155.
[4] THE LANCET, July 28th, 1900, p. 253.

DRAINAGE OF COLWYN BAY.—The Urban District Council of Colwyn Bay has decided to re-sewer the whole of the district at an estimated cost of £45,000.

UNIVERSITY OF CAMBRIDGE.—Examination in Sanitary Science.—The order of examination for October is as follows:—*Part I.*—Tuesday, Oct. 2nd, 9 A.M. to 12 noon, in the Arts School, paper in hygiene; 2 to 6 P.M., in the Pathological Laboratory, practical bacteriology. Wednesday, Oct. 3rd, 9 A.M. to 12 noon, in the Arts School, paper in hygiene; 2 to 5 P.M., in the Chemical Laboratory, practical chemistry. Thursday, Oct. 4th, 9 to 10.30 A.M., in the Arts School, paper in bacteriology; 10.30 A.M. to 12 noon, in the Arts School, oral; 2 to 6 P.M., in the Physiological Laboratory, practical microscopy and oral. *Part II.*—Tuesday, Oct. 9th, 9 A.M. to 12 noon, in the Senate House, paper; 1.30 P.M., in the Senate House, practical and oral. Wednesday, Oct. 10th, 9 A.M. to 12 noon, in the Senate House, paper; 1.30 to 5 P.M., in the Senate House, practical and oral. Thursday, Oct. 11th, 10 A.M., in the Senate House, oral.

# THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL CORRESPONDENT.)

## FIRST SECTION.

### TINNED MEATS.

CONSIDERING that the wars in South Africa and in China involve in different degrees and climes the great problem of feeding armies, the paper communicated to the First Section by Dr. L. VAILLARD, Professor at the Val de Grâce military school, is of practical interest at this moment. He dealt with the accidents that arise from the consumption of tinned meats. The process of tinning is simple and rapid. The meat is first boiled for about an hour. The broth is then separated from the meat and concentrated, so that when cold it forms a stiff jelly. Now this jelly and the boiled meat are placed together in tins and are hermetically closed by soldering, after which they are sterilised. The temperature for each sterilisation varies from 110° to 115° C. and the process generally takes an hour and a half. It is difficult to say what the effect of such food may be on the civil population, but with the army and navy there are good opportunities for precise observation. For instance, the French army consumes 3,000,000 tins annually and each tin contains the rations for five men. Thus we may say that 15,000,000 rations of tinned meat produced 201 cases of sickness in 1897 and 198 cases in 1898, resulting in only one death. The illnesses provoked can be divided into two distinct categories: firstly, various forms of indigestion occurring within from two to six hours after consuming the food and not accompanied by fever; secondly—and these are the majority of cases—the symptoms commence from 12 to 50 hours after the consumption of the tinned meat and thus follow on a period of incubation similar to that of diseases due to infective microbes; there is generally fever, the digestive troubles are more like those of gastro-enteritis, and sometimes there is blood in the evacuations. As for chemical poisoning, especially that due to lead, no symptoms indicating such accidents have been observed. Nor is there evidence to show that in course of time the meat preserved may deteriorate. Millions of tins are five and six years old before they are opened and the contents are eaten. Professor Vaillard argued that the toxic substance must have been contained within the meat itself and this might be the case if the animal had been overworked or was diseased when killed. It is then possible that though the living organisms may be killed by the process of sterilisation they may first produce poisonous conditions in the meat. It is also possible that delays, imperfection, or malpractices in the process of preservation may have introduced micro-organisms. In warm weather a few hours may suffice to deteriorate the meat. When this occurs attempts are sometimes made to sterilise this meat a second time so as to arrest the process of putrefaction. When the meat is bad the gas engendered causes the tin to bulge out, but even this can be to all appearances repaired. A very small hole is drilled in the tin, then the tin is exposed to heat again, the organic life which it contains is destroyed, and an invisible speck of soldering covers over the little hole. But if the living microbes are killed have they not produced poison during their lifetime that retains its toxic powers? Some of the meat examined contained such a number of dead cocci and bacilli as to bear all the appearance of an artificial culture broth. Are not chemical substances formed which are not affected by the sterilisation process? Nor is this always revealed by a bad odour. Some preserved meat that seemed good and sweet killed the guinea-pigs which were inoculated. But this does not prove that the meat would have the same effect when eaten. On the contrary that which killed when given as a subcutaneous injection was quite harmless when given as food. Experiments should be made with the preserved meats that have produced sickness, whenever any of it remains. Nevertheless this risk must not be exaggerated. Strict surveillance is needed to ensure that all the necessary precautions are adopted in tinning and that nothing but sound meat is employed.

### CHEMICALS AND THE PRESERVATION OF FOOD.

Bearing upon this question Dr. F. BORDAS, member of the French Consultative Committee of Hygiene, presented a report on the Use of Chemicals for the Preservation of Food. After describing the chemicals generally employed for this purpose, he urged that though some of them seemed to occasion no inconvenience the effect of others was open to doubt, and it might be said that, as a rule, any substance that could prevent fermentation must also interfere with the digestive process. Certain hygienists, such as Professor J. B. Bradbury, Dr. B. A. Whitelegge, and the late Sir B. W. Richardson, had suggested that when chemicals were employed the fact and the dose should be stated on the label. But it was objected that it would be impossible to control the dose. Nor could it be stated that a chemical was not injurious, for what might be eliminated easily by the young and healthy would be very injurious to elderly persons or to persons suffering from some kidney disease. If evil effects were not produced at once the constant absorption of such chemicals must in the long run be injurious. Therefore it was regrettable that any hygienists should have appeared to sanction their employment, and Dr. Bordas concluded by submitting a motion affirming that no antiseptics whatsoever, even if considered to be harmless, should be employed for the preservation of food.

During the portion of the discussion at which I was able to be present Dr. NEFLER and Dr. NOCARD were both absolutely opposed to the use of chemicals. The only safe preservatives were cold or heat; all others were mere methods of deception; they only served to preserve appearances, and the food which seemed wholesome was often poisonous. Dr. FOEDOR of Budapest agreed with this opinion, but Dr. FRAENKEL thought that the use of only certain chemicals should be forbidden. Non-toxic chemicals might sometimes be advantageously utilised. Dr. KIRSHNER and a French medical practitioner were of the same opinion. No vote was then taken, but at another sitting Dr. Bordas's motion was adopted, and it has been seen that this opinion of the section condemning the use of any chemical whatsoever for the preservation of alimentary substances was confirmed by the final and general meeting of the entire Congress.

## THIRD SECTION.

### THE WINDOW, THE ROOM, AND THE SUN.

One of the most distinguished of French sanitary reformers, M. EMILE TRÉLAT, presented a report to the Third Section on the Orientation and Mapping Out of Streets in Large Towns. No one has done more for domestic hygiene than M. Emile Trélat. As the founder of l'École Spéciale d'Architecture he was among the first to insist that architects should study sanitation. The most perfect systems of ventilation—such, for instance, as that of the Grand Opera at Vienna—have been carried out by his pupils in accordance with the principles which he taught. To his eloquence as a speaker and his facile style as a writer we owe the fact that the importance of a single and unilateral light in schools is so well appreciated on the continent, and he has also helped sanitary reformers to study and appreciate the marked effect produced by the porosity of walls in the ventilation of dwellings. These were the subjects of papers read by M. Emile Trélat at previous international congresses of hygiene, and now he insisted on the action of the direct rays of sunlight in preserving the health of urban populations. Unfortunately most towns and streets were built before any thought had been given to this factor. It was a curious fact that though so many religions were, in their origin, based on sun worship so little care had been taken to admit the rays of the sun within dwellings. Yet in the building of temples and churches this principle was observed, and by their orientation, the large windows being built east and west, the direct rays of the sun were brought upon the high altar. M. Emile Trélat pleaded that the dwelling-room should be placed in communication with the high heavens. Let the walls be pierced and the windows raised up to the ceiling, so that the rays of the sun might reach the farthermost wall. But he pointed out that the sky was not throughout equally beneficent. A distinction must be made between the light that descended from the zenith and that which came from the horizon. The first was a pure light, but as it descended vertically its vibrations could not penetrate through the windows. On the other hand, the light from the rising and setting sun travelled horizontally and could reach the farther ends of the rooms of the houses. But this light was not so pure; it had been somewhat deteriorated by passing through

prolonged layers of dust and vapours escaping from the soil. The intermediary light would therefore be the most useful for the interior of dwellings. This, the slanting light, as opposed to the vertical and the horizontal lights, was the light which should be introduced through the windows. Experience showed that it was at an angle of 30 degrees that we reached the mid-heavens, and to obtain this light houses should not be higher than two-thirds of the width of the street. Further, the height of a room should be equal to two-thirds of its depth. In other words, if the room was ten feet high the distance of the furthermost wall from the window should not be more than 15 feet and even in that case windows should reach the ceiling. This was not only necessary for the purification or natural disinfection of the interior of the room by the direct rays of sunlight, but also so as to prevent damp. A damp house was always unhealthy. The dampness from the soil could be avoided by building cellars under the house, by constructing a draining trench round the house, and by the use of a damp-proof course in the foundations, but it was not so easy to prevent the walls from becoming damp in consequence of rain and the humidity of the atmosphere. The wet might be excluded by impermeable paint or some other sort of coating, but this destroyed the porosity of the walls and therefore could not be recommended. The true remedy was thick walls and a good exposure to the sun. The heat of the sun would then dry the walls before the dampness had time to reach their interior surfaces. As in towns some shade must be thrown on the dwelling by the houses in front and behind, all that could be done was so to place these houses as to secure for them, not all the sun's rays, but the best rays and as much of them as possible. In temperate climates the conditions that prevailed in winter must be considered and calculations must be based upon the incidence of the sun's rays during the shortest day of the year. Then it was also necessary to take into account the direction of the streets. First those streets which were parallel with the meridian; when the sun was in the south they were well swept by its rays, but only for a short time. On the other hand, streets that were parallel with the equator would be constantly in the shade of the houses that faced them. Adolphe Vogt, taking the latitude from Vienna to Paris, had studied the purely geometrical problem—namely, what should be the height of the houses and the width of the streets so that the rooms on the ground floor should receive direct rays of sunlight in the winter. The result was that streets running from north to south should be twice and one-third as wide as the houses were high, while those that ran from east to west should be four times as wide as the houses were high. Even M. Trélat, who is an idealist, recognises that such conditions are impossible. Habitations so widely apart would cease to constitute a town, for the object of a town was concentration. But, nevertheless, this calculation might at least serve to show that every effort should be made to widen the streets and to avoid building lofty houses. M. Trélat concluded by urging that these principles were too often neglected by municipalities in spite of the improvements which had been effected in other directions.

In the short discussion that followed M. BECHMAN (the President of the section) lamented that the tendency in all large towns was, on the contrary, to build loftier and loftier houses. The section agreed to accept the conclusions of M. Trélat's report—namely, that it was the duty of sanitary reformers to seek to widen the streets and to prevent the building of tall houses.

### THE SMOKE NUISANCE.

Dr. ARMAND GAUTIER and Dr. NESTOR GRÉHAUT presented a report on the Pollution of the Atmosphere of Large Towns. Within the walls of Paris there were, they said, about 8000 hectares of land and on this surface some 3,000,000 tons of mineral fuel were burnt per annum. This made 375 tons per hectare, or about one ton per day per hectare, or again about 100 grammes of fuel per square metre. These 100 grammes contained about 70 grammes of pure carbon and should therefore yield in combustion 246 grammes or 125 litres of carbonic acid. Taking the chimneys at an average height of 20 metres and considering that in a still atmosphere the gas travelled up and down equally, a column 40 metres high and one metre square would contain 40,000 litres of air in which 125 litres of carbonic acid would be distributed, or nearly three cubic centimetres of carbonic acid per litre. As a matter of fact, however, according to the experiments of Boussigault and Lévy, the air of Paris only contained 31 volumes of carbonic acid per 100,000 volumes, and this was only three per 100,000 in excess of the quantity contained in pure air. Nor could this addition of three volumes of carbonic acid be attributed wholly to the fuel consumed, as there were many other agencies that produced this gas. M. Müntz and M. Aubin found that the atmosphere of Paris contained from 32·2 to 42·2 volumes of carbonic acid per 100,000 volumes in heavy cloudy weather and from 28·9 to 31 volumes in fine clear weather, and the proportion was 24 volumes in the very pure air at Cape Horn. The air within the earth of the Jardin des Plantes contained 24 times more carbonic acid than was usual in the atmosphere; therefore a part of the carbonic acid in the air came from the fermentations within the soil. The report then proceeded to deal with the very considerable proportion of carbon monoxide produced by gas, by stoves, fires, &c. But nevertheless the reporters concluded that the causes of insalubrity due to industrial or domestic chemical products of combustion were in most towns less dangerous than would at first sight appear likely. Though an immense amount of carbonic acid gas and carbon monoxide was produced, still there remained but feeble traces of them in the atmosphere of the large towns. These gases were very dangerous in certain localities within certain ill-ventilated buildings, but not so in the general atmosphere. Dr. Gautier and Dr. Gréhaut thought that the emanations from the soil were far more dangerous; the smoke at worst only acted by reason of its depressing effects and not as a direct poison.

### PERFECT COMBUSTION.

Dr. ZAHOR of Prague opened the discussion on this report. He reviewed the laws enacted in various countries so as to abolish smoke. To judge by the stringent nature of these enactments smoke should have long since vanished from the face of the earth. The French law forbade black and prolonged smoke; the English law which was more ancient only dealt with factories, but it inflicted a daily fine. Yet the chimneys still continued to smoke. In Bohemia the manufacturers were beginning to utilise smoke-consuming processes. Dr. Zahor felt convinced that smoke was very injurious. It caused darkness, it attracted rain, it prevented plants from growing, and it likewise lowered human vitality. It spoiled buildings, furniture, clothes, and property of all sorts. It injured the lungs, and produced nausea, headache, and all the symptoms of poisoning. To prove this it was only necessary to compare at a post-mortem examination the lungs of a person who lived in a town with those of a person residing in the country. It was not only the big factories but the small workshops and the domestic fires that contaminated the air.

Mr. ADOLPHE SMITH protested against the suggestion, sometimes lightly made, that smoke was not injurious. Parisians especially would have to be careful. Now that wood was so dear and the consumption of coal in private houses was increasing rapidly there was much more smoke in Paris; and even if this smoke was not particularly injurious in itself it became very mischievous when, mixing with a white mist, it produced a black fog; and the fogs in Paris were getting more and more like those in London. Whatever chemists might say about smoke, it was a fact that in London thick "pea-soup" fogs sent up the death-rate by leaps and bounds. As for the suggestions made that the law should insist on perfect combustion, what was perfect combustion? Theoretically, if perfectly consumed, a kilogramme of carbon should yield some 8080 calorics of heat, and produce no smoke whatsoever and no carbon monoxide. Practically a kilogramme of carbon yielded little more than 2470 calorics of heat, produced a quantity of black smoke and some carbon monoxide. Could anyone say where and how perfect combustion was produced for industrial or domestic purposes? The speaker had been privileged in making experiments with a stove that did realise the ideal of no smoke, no carbon monoxide, of perfect combustion; indeed, the combustion was so perfect that it not only melted platinum wire but consumed the stove as well. Thus a laboratory success proved a commercial failure, for no one would buy a stove which burnt itself up in a few weeks. The fact was that the problem still awaited a practical solution. They might reduce the volume of smoke but they did not know how to abolish it altogether. But the advantages of perfect combustion were so enormous from the sanitary, economical, and æsthetic points of view that every effort should be made to encourage research and inventions in this direction. The

State and the municipalities should give some impulse and facilities to such endeavours.

Dr. BERTHOT was not satisfied with the mere suppression of black smoke. He spoke of the grit or mineral particles which escaped with the white or invisible smoke or fumes and thought that where many habitations clustered round factories, which threw large quantities of such particles into the atmosphere the inhabitants would suffer from irritation and injury to the lungs.

Dr. ZAHOR had brought the matter forward in the Bohemian Diet and he was anxious to gather from the section some indication as to the recommendations which he should make to his Government.

M. BECHMANN, as President of the section, replied that the section was at least agreed that black smoke could be avoided and the law might interfere to prevent this nuisance.

The section then adjourned.

## THE FIRST AND THIRD SECTIONS UNITED.

### PATHOGENIC GERMS IN WATER AND IN THE SOIL.

On Thursday, August 16th, the First and Third Sections sat together in the big amphitheatre to discuss the question of water-supply. It was, as it were, a consultation, the engineers and architects seeking the advice of the bacteriologists. Dr. THOINOT and Dr. VAILLARD had presented a short report on the Presence of Pathogenic Germs in Water and in the Soil. Though such germs, it had been shown, did not live long in water, experience demonstrated that polluted water did provoke typhoid fever and cholera. In the laboratory natural conditions could not be perfectly reproduced. The typhoid bacilli died rapidly when placed in water in the laboratory, but they had been found living in water collected in the open and at various intervals, thus showing that outside they subsisted for a much longer time. According to Lösener, Remlinger, and Schneider for the typhoid bacilli, and various French and German authorities for cholera bacilli, these germs were to be found in the water-supply of populations suffering from these diseases and also in the water-supply of populations when no such epidemics prevailed. The reporters sought to explain away this flagrant contradiction by supposing that the population had been rendered immune by previous epidemics, an argument which did not take into account the instability of populations. A more plausible argument was the possibility of mistakes in observation. For these numerous bacilli, that were like the pathogenic types and yet offered some slight difference, more elaborate studies were necessary. Indeed, they were only on the threshold of such investigations. (This struck me as being a very important confession, particularly when coming from such eminent authorities. It suggests that innumerable mistakes have been committed, for the fact is acknowledged that water condemned by bacteriologists has been perfectly innocuous, while, on the other hand, it will be remembered that at Maidstone during the great typhoid fever epidemic the specific germ of this fever was not found in the water. The suggestion then was that the germ had been in the water, but that its presence had ceased by the time the water was examined. The epidemic, however, did not cease so promptly.) Dr. Vaillard and Dr. Thoinot attributed the contamination of the soil and of water to pollution from drains and cesspits. They did not believe that germs could live for long on the surface of the soil, but they might find more favourable conditions a little deeper down. Yet when Lösener examined the earth taken in close proximity to the buried bodies of persons who had died from typhoid fever and from cholera it appeared that these germs did not live more than a few weeks in the earth. But it was claimed that these experiments were not conclusive because the conditions of cemeteries varied greatly. In any case Gielt had shown that the bacillus of typhoid fever lived for five months, and for nine months in a heap of manure, and that when the earth was dug up in old parts of a town or at human guano works, epidemics of typhoid fever had ensued. It was therefore probable that soils formerly contaminated had retained for a long time infectious germs, and these could be carried to some distance by the water that traversed such soil. The earth was a natural reservoir for a great number of bacteria, especially the septic vibrio, the spores of tetanus, the pyocyanic bacillus, various pyogenic agents, the pneumococcus, &c. Lösener found the bacillus of typhoid fever deep down in the earth of a field where there was no evidence of contamination. On the other hand, in soil which had been artificially contaminated the bacteria had entirely disappeared. Remlinger and Schneider examined 13 specimens of earth collected in Paris and seven seemed to contain the germs of typhoid fever. Therefore there was something to be said for the theory that the germ of typhoid fever might exist elsewhere than in the body and in the dejecta of patients suffering from typhoid fever. If, then, such germs sometimes existed naturally in the soil and were not always the result of a specific contamination of this soil, the water gathered from such a district might communicate the disease to those who drank it. The water and the earth by themselves, and not a human contamination, might cause epidemics of typhoid fever and cholera. Otherwise, how should the presence of the cholera microbes in the water of rivers at certain seasons and periods in localities where there were no cases of cholera be explained? The same observations had been made with regard to the germ of typhoid fever. The report concluded that the study of the soil and its microbes needed much greater attention than had as yet been given to the subject.

### SHOULD ALL DRINKING-WATER BE STERILISED?

It was in the face of this most perplexing report that the discussion of the joint sections began and it was quite pathetic to witness the sanitary engineers rise from their places one after the other, and appeal to the bacteriologists for some clear and distinct instructions as to what should or should not be done. Then there was also the question of the presence in water of bacteria other than the well-known pathogenic germs. Dr. A. J. MARTIN insisted that it was important to note the number of bacteria of whatever species and he seemed to think that it was a great advantage to reduce their number; but another speaker protested that he had studied the bacteria in the human mouth. These were various in race and plentiful in number. Would it be wise when the mouth seemed to need so many bacteria to extract them all from the water which they drank? The sterilisation of water might not be an unmixed blessing, for ferments were needed to digest food. A German delegate asked that a commission should be appointed, but Professor FOEDOR of Budapest, who presided over the First Section, objected that the processes for the bacteriological analysis of water varied from day to day. It was generally agreed that such analyses were indispensable and the sections desired that the process of analyses should be the same in all countries, and though this end was not likely to be attained at present, still an international commission to study the question would render great service. A resolution in favour of creating such a commission was then carried unanimously.

M. LAUNEY, as a civil engineer, now asked whether or not all life was to be suppressed in the water supplied for drinking purposes, or was it, on the contrary, better for digestive purposes to leave certain inoffensive microbes. The intestines of a newly-born infant possessed no bacteria; but when the infant had lived twenty-four hours they contained many microbes and notably the bacterium coli and yet the infant could not at that age be accused of drinking Seine water. Who was capable, clamoured the engineers, of deciding which were the injurious microbes? Water-supplies were looked upon with great suspicion because they contained the bacterium coli, but this self-same microbe abounded in the intestines of perfectly healthy men and women. Might it not be said that what existed in a healthy man could without injury remain in water? Nor was it possible to get an instrument which would be a terror to the bad and a saviour of the good. Simon de Montfort, during the Crusades, captured a town and being asked what should be done as all the inhabitants were not heretics but some of them good Christians, replied, "Massacre them all and God will recognise His own." Were they to treat the organic life existing in water in the same manner?

Dr. CALMETTE, of the Pasteur Institute at Lille, seemed to be of this opinion. He said that spring water might be very pure, but they could not be certain that it would remain pure. The more civilisation spread the greater was the tendency to pollute natural springs or water intakes. Nor could they reckon on water from the chalk remaining pure. Fissures might occur at any time in the chalk. Therefore they had better abandon the costly expedient of bringing to town from a great distance waters supposed to be pure. Let them, on the contrary, take whatever water might be close at hand whether pure or not, but let them see that it was thoroughly sterilised. For this there were two processes available, the chloride-peroxide and the ozone processes. The former was

difficult to manage and might attack the lead in the pipes and thus produce another and chemical source of poisoning. As for the sand filtering process it always let some microbes through. Ozone did not bring foreign matter to the water. It acted just as nature acted. They could have sterilised water, they could make sure that it was sterilised, but they could never be sure that a water supposed to be pure would remain pure.

M. BECHMANN, President of the Third Section, objected that the processes of sterilisation were only just becoming known. They had not been fully studied. In this very early stage of their knowledge of the subject they could not rush wildly into expenses that would involve millions of the public money. The only thing practicable was to express an opinion that more effective measures should be taken to protect the water intakes or gathering grounds.

Dr. FRAENKEL, a German delegate, argued that unless they found conditions enabling them to multiply the bacteria would die. Experiments made at Berlin with the bacilli of cholera and typhoid fever showed that they could not multiply when at a depth of two and a half or three metres from the surface of the ground. It was only the superficial layers of the soil that could contaminate the water that passed through it. Germs would not be found in the lower strata.

Now it was M. DE MONTRICHER, engineer from Marseilles, who rose and challenged the bacteriologists once more to say whether or not all bacteria were injurious. Professor FOEDOR replied that there were excellent waters which did contain microbes.

M. BARBIER (Lille) explained that an official commission had recognised the merits of the ozone process. In his house all the water was ozonised. At the Lille Pasteur Institute everyone drank ozonised water. When this water was distributed it no longer contained any ozone as ozone was extremely volatile. Fish lived well in this water. Dr. LOEFFLER, speaking in German, said they had all been taught that a sand filter was a sufficient guarantee. Chalk soil was dangerous for they never could tell when or where a fissure might occur. Therefore he preferred sterilisation. Professor POISSEL explained that all water-supplies were strictly controlled in Germany. Dr. LEMBOURG inquired whether the manufacture of ozone might not be subject to interruptions and, just as in the case of filtrations, accidents occur. Dr. GRETLER explained that at Stoltz and other places what were called springs were simply rivers emerging from the ground. Under these circumstances some bacteria might travel from three to five miles. The ozone process was good and so were the sand filters.

The PRESIDENT of the First Section here remarked that M. Launey in his report submitted to the Third Section had said that when the death-rate for three years had reached the figure of 22 per 1000 per annum the Government should insist on an investigation being held. The President thought it was too long to wait for three years.

M. LAUNEY replied that limiting the delay to three years was better than no limit, but this was a local matter of detail. His report was not a resolution but a summary of facts. He had not attempted to dogmatise, but had only sought to interrogate, and the numerous criticisms which had resulted were precisely what he wanted to call forth. Dr. Henriot of the Academy of Medicine had said that they should always use sterilised water. This was the Simon de Montfort policy and it was an unjust policy. They could not call upon the municipalities to spend large sums of money to destroy that which had not been proved to be injurious. They must, on the contrary, strive to obtain the maximum of security with the minimum of expense.

The resolution which the Third Section had carried was now put to the joint sections. To this demand that more efficacious measures should be taken to prevent the pollution of rivers and to protect water intakes Dr. CALMETTE moved an addendum engaging municipalities whose water-supply is not above suspicion to sterilise such water without, however, introducing foreign chemical substances for that purpose.

M. BECHMANN expostulated that we must be careful that in practice sterilisation did not mean the substitution of one poison for another.

Dr. CALMETTE protested that he did not advocate any special apparatus, and the two sections not only carried the resolution, but agreed generally that where the water was of doubtful quality it should sterilised.

Thus terminated a somewhat remarkable debate, for it had at least served to display the barrenness of the land. The bacteriologists who were to enlighten and instruct the engineers showed themselves to be doubtful on almost every practical point raised. It is hard to say what an engineer should do if called upon to devise a scheme of water-supply in the face of this debate. Some bacteriologists urge that the bacteria in water are harmless; some hint forcibly that even the pathogenic germ itself may not be pathogenic after all, that bacteria of some sort—they do not say what sort—are useful for the digestion, and that the bacterium coli is almost symbolical of health. Others naturally hold that its presence in water is most menacing. One party declares that sand filters or purification by the action of the soil are most efficacious, or that spring waters are the best. Then come other speakers who condemn such springs because they are but channels for carrying germs many miles; while we are also told that cholera and typhoid fever germs abound in rivers when there are no cholera and no typhoid fever in the land. Then just as the attentive listener might be tempted to think that the danger has been greatly exaggerated and that we need not trouble much about these living organisms in the water we drink, we are informed with all the authority that attaches itself to a well-known Pasteur Institute that no water whatsoever is safe and that all waters must be sterilised. If to the confusion arising from all these contradictions we add that many speakers, as noted above, insisted in speaking in German though most of them could have spoken in French and though but few persons present understood German, it will readily be gathered that the engineers who were thirsting for knowledge and precise instructions went empty away.

*(To be continued.)*

## NOTES FROM INDIA.

**(FROM OUR SPECIAL CORRESPONDENT.)**

*The Increase of Plague.—The Extraordinary Mortality in Bombay City.—The Pasteur Institute.—Punishment for the Cawnpore Plague Rioters.*

As anticipated the plague mortality is increasing. There were 449 deaths in India last week as compared with 285 in the previous seven days. The increase has been chiefly in Mysore which reports 210 deaths. There was an increase also in Calcutta which returned 103 deaths, but 27 of these appear from the local returns to have been "suspected" deaths. Bombay city recorded 51 deaths and the districts recorded 64. The general mortality of Calcutta was at the rate of 41·2 per 1000 as compared with the five years' average of 27 4 per 1000. The plague and "suspected" cases do not account for the increase and there is a balance of excess not explained in the returns. It is a question whether there is not more plague than is supposed. Inquiry of the medical staff discovers the curious fact that very few of the cases occurring at the present time showed buboes. Another curious observation is that comparatively few living cases are reported. All through the outbreak there have been discovered a certain proportion of living cases, but this proportion has sunk of late to a very low percentage. It is difficult to give an explanation of these two variations.

The general mortality of Bombay in the absence of recorded plague is remarkable. There were 2203 deaths from all causes for the week ending August 21st—an increase of 621 over the previous week. The rate is no less than 139 per 1000 per annum. The deaths from cholera were 770, but this high figure leaves 1433 deaths as compared with an average weekly mortality of about 600. There were only 64 deaths returned as due to plague. However far these official returns of plague may be below the mark it is evident that plague shows no sign of recrudescence. A curious feature in the Bombay figures is the extraordinary increase in the number of deaths attributed to phthisis. That this mortality should be double the average rate is absurd and shows the worthlessness of the returns.

Cholera is very prevalent throughout India. It is again on the increase in cantonments and the following regiments are more or less sufferers. The 2nd York and Lancashire Regiment, 19th Bengal Lancers, Royal Inniskillings, 4th Bombay Rifles, 1st Royal Fusiliers, 1st Cheshire, 11th Madras Infantry, 4th Hussars, 3rd Madras Lancers, and 28th Punjab Infantry. The totals are 232 cases and 138 deaths.

The Pasteur Institute at Kasauli is evidently meeting a great want. On August 17th 28 persons were undergoing

treatment; of these two were British officers, 17 were British soldiers, and there were two native soldiers, two European civilians, and five native civilians.

The lengthy trial of those accused of participation in the murders of the police constables during the late Cawnpore plague riots has concluded with the conviction of all the principal prisoners. One prisoner was brother to one of the municipal commissioners and his action in fomenting the outbreak seems to have been largely due to the loss of a municipal contract. There was a sensational scene outside the courthouse, the crowd raising loud lamentations. 20 prisoners were sentenced to death. These plague riots were particularly vicious and the lawless element in Cawnpore has long required a severe lesson. It is to be hoped that the Government will not alter the sentences.

August 23rd.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*Report by the Public Health Committee of the Edinburgh Town Council on the Prevention of Consumption.*

IN October, 1898, the Edinburgh Town Council remitted to the Public Health Committee to consider whether any and what steps should be taken by the local authority to protect the public in Edinburgh against consumption, and to report. The report of the Public Health Committee has now been published. This report has been prepared with great care and with the utmost regard to the opinions of the medical profession. Before any practical suggestions are made various general questions with regard to pulmonary consumption are fully discussed, the report forming an excellent treatise on the nature, the extent, distribution, communicability, prevention, and general treatment of consumption. A strong contrast is drawn between the present outlook as regards the treatment and prevention of consumption and the attitude of men's minds towards the problem 20 or 30 years ago. Now the question is full of hope, while in those days the French aphorism was being continually illustrated: "Consumption is a disease from which the rich are sometimes cured—the poor never."

The report begins by showing how little was known as to the real nature of tuberculosis until the discovery by Professor Robert Koch of the bacillus of tubercle. Men had before that, to some extent, realised the importance of hygienic conditions in the treatment of the disease, and Villemin in 1865 had proved the infectivity of the sputum, but no distinct progress was made until the cause of the disease was discovered. Regarding the organism the following points are noted. 1. The organism is the sole and only cause of consumption in whatever form the disease appears. "No bacillus, no consumption," is now an axiom. 2. It belongs not only to man but to the lower animals. 3. It comes from without and does not arise in the body. 4. The tubercle bacillus does not originate in nature outside the animal organism and the only natural places for its growth are the bodies of certain animals. 5. The organism is one that thrives in the dark and at the usual temperature of the human body. All conditions which bring about a low state of the human health, such as bad air, dark dwellings, intemperate habits, poor food, and habits of uncleanliness are favourable to the growth of the bacillus. 6. It multiplies by subdividing itself and in the early stages of the disease it multiplies very slowly. 7. Though the bacillus cannot multiply outside the body, yet it can live even in a dried condition. 8. There are degrees of virulence in the bacilli. 9. The tubercle bacillus is not inherited. This last fact must be regarded as good tidings to humanity, for if consumption be a preventable disease and not hereditary the spread of the disease may have a powerful check put upon it. There has been a great diminution in the extent of the ravages made by the disease during the last 50 years, but even at the present time Europe alone is yielding more than 1,000,000 victims per year. Tables are inserted in the report to show the distribution of the disease in Europe. Russia has the highest mortality, Austria comes next, and then France, while Germany, Sweden, and Ireland take the next place. Norway, Denmark, Scotland, the Netherlands, and Italy stand together as almost the least affected, while England and Wales take the first place with the lowest mortality. Neither poverty alone nor poverty combined with severity of climate is necessarily a cause for consumption, for in the United Kingdom the province of Connaught, the Hebrides, and the wilds of Ross and Sutherland suffer as little from consumption as the southern counties of England. The provinces of Ulster and Leinster suffer more than any other section of the United Kingdom. From the tables it is also seen that the annual death-rate per 100,000 persons is 173 from consumption and 317 from inflammatory diseases of the breathing organs; total, 490. In Ireland the figures are 203 from consumption and 277 from inflammatory respiratory diseases, the total being 480, while in England and Wales the figures are respectively 135 and 315; total, 450. The figures for Edinburgh are 191 and 331; total 522. The average for the United Kingdom is 170 and 303; total 473.

There is now a great accumulation of proof that consumption is infectious and that there are many ways by which it can be conveyed to man. Transmission from parent to child, which formerly was believed to be the only mode of infection, is now known to be of exceedingly rare occurrence. Certain persons, however, show a more or less strong disposition to succumb to the invasion of the organism just as certain persons are more liable to be attacked by the infectious fevers. Turning to the question of the preventability of consumption the committee again emphasise as a truth to be written in letters of gold that consumption is not hereditary and points out the highly significant fact that no chronic malady is so much influenced by the application of sanitary measures. From the tables compiled by Dr. Arthur Ransome, which are given in the report, it is seen that while in the year 1838—the first year of Her Majesty's reign—the death-rate from consumption per 100,000 of the population was 38, by the year 1894 this death-rate had been reduced to 14. The only cause of this change was the inbringing of healthier conditions of common life. The Queen's reign had been a period of reform. The poorer classes had benefited much by the Factory Acts and the repeal of the Corn Laws, the dawn of sanitary practice appeared, and the blessings of fresh air, sunshine, and cleanliness began to be sought after. If within the past 60 years consumption has been reduced by nearly two-thirds by the ordinary development of improved sanitary measures, the disease may in the next century become as rare as small-pox or leprosy as the result of means taken directly to combat the evil. In Germany until a short time ago there were few consumptive sanatoria, but since the formation four or five years ago of the National Union for Combating Tuberculosis sanatoria have grown up in the neighbourhood of every considerable German town. At present there is one in the course of erection in Berlin which will receive as many as 1500 patients. As regards a protective serum, so far no substance has been found which is of much use in the human subject, although the last tuberculin produced by Professor Koch is highly useful as a test for cattle, and therefore is an important means of prophylaxis for human beings. The report goes on to explain the principles of the open-air treatment of consumption and shows that for the cure of consumption high altitudes and warm climates are not necessary, as was once thought to be the case. The hope is expressed that those who have the means to give will be stimulated by the work done in the Victoria Hospital in Edinburgh and at Mr. Quarrier's Consumptives' Homes at Bridge of Weir, to increase the means, which at present are small, for the treatment of cases which are still in the stage at which the cure is possible.

As regards the duties of municipalities towards the extirpation of consumption the report recommends the following as necessary steps: (1) the devising of means to inform the public regarding the origin of consumption and its main characteristics; (2) the adoption of a satisfactory method of disinfection of houses in which cases have occurred; and (3) the encouragement of the public to take the earliest note of the earliest signs of consumption and to call in a medical man who may in any suspected case obtain a bacteriological report on whether the patient is or is not tuberculous. These three propositions are in operation in Edinburgh and the committee does not see the necessity of introducing compulsory notification in this city. They are of opinion that as places and means of treatment become available sufferers will readily come forward for relief. The committee have come to the conclusion that one special duty is incumbent on the municipal authorities—namely, to devise means of dealing with cases in the last stages of the disease which are to be found in houses of inadequate accommodation. The mortality has been found to be highest

where bad sanitation is most pronounced. The sanitary condition of the city is being steadily improved and matters are consequently much better than they were, but of the persons who died from consumption in Edinburgh last year three-fifths inhabited houses of one, two, or three rooms, the house in no case exceeding a rent of £20. Presumably most of those persons were ratepayers assisting in bearing the burdens of the city until no longer able to do so. Had they been taken ill with one of the infectious fevers they would have been entitled to the use of the city hospital. But the municipality has as yet taken no steps to meet the case of consumption, although the disease from which they suffer is a more deadly one and one from the infection of which the public ought to be protected. It is no matter of philanthropy and no matter for the parish council to undertake. If the town authorities are to deal with those cases it must do so upon purely public and not on benevolent grounds. The town cannot set up for the exercise of benevolence, but it can justify on economic grounds the protection of the lives of the citizens from the great danger of a powerful infection. This is the principle upon which it carries on a hospital for the reception of persons afflicted with infectious diseases. It is true that there are municipalities where it is recognised to be a duty to take over the charge of citizens just entering upon consumption, where the expenditure upon effecting the cure of such persons is justified on economic grounds, upon the ground that those saved lives will prove as workers and wage-earners of far more value to the community than if they had been allowed to die. The committee do not venture to make any such proposal. They believe that if those dangerous cases which have got beyond the range of cure were provided for, the probabilities of a diminution of the disease in our city would be vastly increased; and that as the hopefulness of cure at the earlier stages of the disease comes to be realised and understood it will be found that the case will strongly appeal to wealthy and benevolent citizens. The committee recommends that when the new hospital for infectious diseases is opened at Colinton Mains 100 beds should be set apart in the present city hospital for the reception of advanced cases of consumption. The cost of this would be about £50 per annum per bed, or an annual expenditure of £5000. The committee believes that the resulting reduction in the mortality from consumption would more than repay the authorities for the expenditure involved. In an appendix there are brought together reports by Sir Henry D. Littlejohn, M.D., LL.D. Edin., medical officer of health, and of the conferences held by the special committee with leading physicians and surgeons, as well as recommendations from medical men.

*Aberdeen Working Men's Natural History Society.*

The annual meeting of the Aberdeen Working Men's Natural History and Scientific Society took place in Marischal College on Sept. 4th when the President delivered an address on the progress of the society, in which was urged the need for a proper museum for the city.

*The Plague Alarm in Aberdeen.*

In connexion with the outbreak of bubonic plague in Glasgow Professor M. Hay, M.D. Edin., medical officer of health of Aberdeen, has issued a short description of the symptoms of the plague for the guidance of the medical practitioners of the city. The medical officer of health and the sanitary inspector having both pointed out that Point Law, the centre of the herring fishing operations in Aberdeen, having no sanitary conveniences, is in an unsafe sanitary condition in the event of an outbreak of plague occurring, the Public Health Committee of the Town Council are to confer with a committee of the Harbour Commissioners on the subject of laying sewers for the efficient drainage of the district. Two suspicious cases have been observed—one at the City Hospital and one at the Royal Infirmary—but both have been authoritatively declared not to be cases of the plague. All the houses but one in Rennie's Wynd which are subject to flooding have been condemned as human habitations. These dwellings are sunk below the level of the present main outfall sewer which passes along the narrow wynd; there is a large factory within a few feet of the houses, and the action of the local authorities is not to be wondered at; but as usual they have taken no steps to provide cheap house accommodation elsewhere for the poor people to be displaced.

*Suggested Municipalisation of the Aberdeen Royal Infirmary.*

At a meeting of the "Citizens' One-Plank" Committee, held early in this month, a report on the proposed municipalisation of the Royal Infirmary was submitted by a sub-committee, in which it was contended that the system of voluntary support was wrong in principle since it allowed a large section of the citizens to evade their responsibilities towards the sick members of the community, while it also left the institution hampered for want of funds. A resolution was adopted to the effect that "this committee is of opinion that the only way of making adequate provision for the sick is by having the management of the infirmary placed in the hands of some popularly elected board with statutory rating powers at its disposal, and resolves to take whatever steps may be necessary to have that object realised." It was resolved to call a public meeting at an early date, and it may also be mentioned that, besides the Socialists, the United Trades Council have the same matter under consideration. The managers of the hospital are averse to any such radical change.

Sept. 11th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The late Sir William Stokes.*

HER Majesty the Queen has sent a message of gracious sympathy to Lady Stokes upon the death of her husband, the late Sir William Stokes, expressing her admiration of his noble, self-sacrificing works on behalf of her troops in South Africa and of the loss sustained by the distinguished profession to which he belonged in the death of one of its most eminent representatives. It will be remembered that the late Sir William Stokes was for some years Surgeon-in-Ordinary to the Queen in Ireland.

*Death of Dr. Arthur Wynne Foot.*

At a meeting of the standing committee of the Meath Hospital and County Dublin Infirmary held on Sept. 10th the following resolution, proposed by Mr. George Perry and seconded by Sir Philip Smyly, Surgeon-in-Ordinary to the Queen in Ireland, was passed unanimously:—

That the Standing Committee of the Meath Hospital having heard with deep regret of the decease of their late esteemed colleague, Dr. Arthur Wynne Foot, since their last meeting, desire to place on record their appreciation of his great services as physician, which for a period of over 21 years he rendered to this hospital, and to convey to Mrs. Foot the expression of their most sincere sympathy with her in her sore bereavement.

*The Royal Victoria Hospital, Belfast.*

At a meeting of the construction committee of this proposed new hospital held on Sept. 5th the eight tenders for the erection of the new hospital were opened, and after careful consideration the offer tendered by a Belfast firm, Messrs. M'Laughlin and Harvey, Limited, was unanimously accepted. The corporation of the city have arranged to give possession of the site for the hospital at once, and as by the contract the builders are bound to have it erected within two years and three months from the date of the execution of the contract no time will be lost. A small sub-committee was appointed to make arrangements for the laying of the foundation-stone, and it is hoped that this event will be honoured by H.R.H. the Prince of Wales. A committee was also appointed to look after matters of detail in connexion with the erection of the building and to advise the architect (Mr. Hennman of Birmingham) in regard to any points requiring adjustment which may present themselves during the progress of the work. The medical staff are represented on this committee. Subscriptions amounting to £81,162 5*s.* 5*d.* (together with interest) have been received and are lodged in the bank, while the promised subscriptions still outstanding amount to nearly £25,000. There is also a sum of £6653 14*s.* 10*d.* standing in the bank to the credit of the endowment fund, and this does not include sums received for the endowment of the "Cuming" ward, which will be handed over when the hospital is open. It is expected that the remainder of the subscriptions already promised will now be handed in.

*Death of Lieutenant-Colonel S. J. Flood, F.R.C.S. Edin., R.A.M.C.*

I regret to announce the death of Lieutenant-Colonel Flood, R.A.M.C., which took place at Holywood, Belfast, on Sept. 5th, the cause of death being pneumonia. Lieutenant-Colonel Flood was born at Danesfort, Belcoo, co. Fermanagh, in 1858, being the youngest son of the late Dr. Flood. He was a student at Queen's College, Galway, and at the

Ledwich School, Dublin. He was a Licentiate of the Royal College of Physicians and a Fellow of the Royal College of Surgeons of Edinburgh. In 1880 he joined the Royal Army Medical Corps, with which he saw service in Egypt and with which he was connected at the time of his death, being stationed at Holywood Barracks. He was very popular with his fellow officers and with the men. He leaves a widow and four children to mourn his premature decease.

*The British Association.*

The British Association at their meeting at Bradford accepted an invitation presented through an influential deputation on Sept. 7th to hold its meeting in 1902 in Belfast, a city which the members visited last in 1874, when Professor Tyndall was President, and the recollection of which has not yet passed into "the infinite azure of the past."

*The Outbreak of Typhoid Fever in Belfast.*

The recent report made public by the secretary of the Water Commissioners replying to the officials of the Public Health Committee, has caused a great sensation in Belfast and was very freely discussed at a special meeting of the city corporation on Sept. 7th. It is announced that the officials of the Public Health Committee will reply to it at the earliest possible moment. The thoughtful citizen, however, is getting pretty tired of this constant attempt made by two public bodies each to throw on the other responsibility for the prevalence of typhoid fever. One thing is clear, the water-supply of Belfast at present is not a first-class one, but to say that the water is the sole cause of the outbreak of typhoid fever is probably absurd, and even if it were the case would this in any way excuse the abominable sanitary defects which exist all over Belfast?

*Hospital Saturday in Belfast.*

Sept. 8th was Hospital Saturday, when a sum of over £500 was collected.

*Belfast Lunatic Asylum.*

It was decided at a meeting of the committee of the Belfast Asylum held on Sept. 10th to form a committee to confer with the medical superintendent with the view of making arrangements for the isolation of consumptive patients, of whom there are 13 suspected cases in the institution.

*An Inquisitive Workhouse Master.*

It would appear that the master of the Glenties Workhouse (co. Donegal) entered the dispensary of the Glenties district, which is situated in the front block of the workhouse buildings to get, according to his own statement, some boric acid for his eyes, and finding in his search two comparatively small parcels of post-mortem specimens, went next day, August 4th, to Belfast to consult the medical inspector of the Local Government Board for Ireland (Dr. C. J. Clibborn) in reference to the presence of the "two skeletons in the dispensary." On the inspector visiting the place, Mr. John Kelly, L.R.C.S. Irel., the dispensary medical officer showed him the parcels which were pathological specimens retained by him with the permission of private patients owing to their scientific interest. The matter was reported to the Local Government Board for Ireland and naturally in a district where superstition is rife it created a great deal of talk. The whole matter came up for consideration at the weekly meeting of the Glenties Board of Guardians on Sept. 10th, when after a long discussion the clerk was instructed to inform the Local Government Board that the board of guardians expressed their disapproval of the master's action in entering the dispensary and absenting himself without leave. They did not believe that he entered the dispensary for the purpose of getting boric acid and they unanimously expressed condemnation of his action. The whole matter is clearly a "mare's nest," and had the master simply mentioned the circumstance to the dispensary medical officer a simple explanation would have been given and disturbance and excitement in the district avoided.

Sept. 12th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Soi-disant Claim of Pharmacists to Gratuitous Medical Attendance.*

A CURIOUS little case has just come before one of the *juges de paix*. It concerned a pharmacist who refused to discharge his medical attendant's bill. In justification of his action the pharmacist put forward the plea that medical men never charged pharmacists. It is true that as a matter of fact a medical man who is in personal relation with a pharmacist may receive from the latter particular services. In such a case the medical man makes a return by giving medical advice and treatment free. But this is merely a personal matter between two people in friendly relation and creates no right for any pharmacist to get medical advice free or for any medical man to get medicines at a less cost than the general public simply because he happens to be a medical man. In the case which has just been before the courts the medical man was dead and it was his heirs who claimed the amount of the bill, details of which had been regularly entered in the books. The pharmacist argued that he had custom on his side if he had not law, and that decisions in favour of the custom had already been pronounced by various *juges de paix* in similar cases. The pharmacist lost his case and the *juge de paix* who availed himself of the opinion of an expert founded his judgment upon the following considerations. "Seeing that the alleged custom does not exist as universal between pharmacists and medical men, but that if a medical man who has personal relations with a pharmacist does not charge the latter for medical attendance this is only in exchange for services rendered and is purely voluntary and a matter of courtesy, no rule is thereby laid down which can prevent a medical man from charging a pharmacist with whom he has no habitual relations and who has not rendered him any services." It was admitted by D—— that Dr. B—— was not his usual medical attendant.

*The Adoption of an International Nomenclature for Causes of Death.*

Scarcely one month ago Dr. de Maurans drew attention to the difficulties which the diversities of medical terminology threw in the way of international scientific coöperation and he urged that it was the duty of the International Congresses to lay down some basis for a nomenclature which should be common to all countries. This appeal has been heard. The official delegates to the International Congress of Hygiene and Demography held in Paris from August 10th to 17th have decided that in order to make the work of comparison between the nosological statistics of different countries possible a uniform nomenclature should be adopted. The committee gave as an example the statistics adopted by the city of Paris, and all the delegates save one have agreed to recommend to their respective countries that the new nomenclature should come into force on Jan. 1st, 1901—that is to say, at the commencement of the twentieth century. It has already been agreed that French nomenclature shall be the one to be used in North and South America and in a great number of European countries.

*The Application to Man of the Regeneration of Confined Air by the Use of Peroxide of Sodium.*

M. A. Desgrez and M. V. Balthazard have laid before the Academy of Medicine[1] a method of regenerating confined air by the decomposition of peroxide of sodium by the use of cold water. They showed that the oxygen given off by the decomposition replaced that used in respiration, and simultaneously that the soda formed took up the carbon dioxide formed by the respiration, and finally that the toxins present in expired air were destroyed by the oxidising agent. Animals confined in a small space, but where the air was regenerated by this process, survived, while control animals in whose case no regeneration was practised died. Since then they have applied the process in the case of men and have made known their results. Their early experiments were made with a somewhat cumbrous apparatus and they were obliged to simplify it. A model which they showed can, however, be carried on the back and weighs about 12 kilogrammes.

Sept. 11th.

## SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

*Bâle Sanatorium for Phthisical Patients.*

DR. F. EGGER reports on this sanatorium which is situated at Davos and which with its 86 beds suffices for the necessities of the canton of Bâle, as 300 patients can be received annually, the average length of stay being 108

[1] THE LANCET, Feb. 25th, 1899, p. 552.

days. He separates the 530 patients—mostly of the working-classes and indigent population—who were received during the three years 1897 to 1899 into three classes. 1. (*a*) Initial cases with apex infiltration only; and (*b*) more chronic cases with localised lesions. 2. Recent and chronic cases with lesions of not more than one lung, but in good general condition. 3. More advanced cases with fever and such of a progressive character or with other tuberculous complications. Of the 284 cases in Class 1 111 were discharged cured, 120 were considerably improved, 38 were improved, 10 were stationary, and five were aggravated. Of 144 cases in Class 2 one was cured, 68 were greatly improved, 60 were improved, nine were stationary, five were worse, and one had died. Of 102 cases in Class 3 21 were greatly improved, 44 were improved, 16 were stationary, 16 were worse, and five had succumbed to the disease. Dr. Egger next discusses after results, which are of greater importance, especially to the patient. This refers only to patients one to three years after dismissal. 58 cases in Class 1 (*a*), 71 cases in Class 1 (*b*), 37 cases in Class 2, and five cases in Class 3, or a total of 171 cases out of 272 that could be traced were fit for work and would probably continue so; 16 were working (after result doubtful), 12 were only partially occupied, 19 were not fit for work, and 54 had died. (27 could not be traced.) Dr. Egger earnestly pleads for patients being sent to Davos in the initial stage, and his statistics support him. He objects to the diagnostic use of tuberculin on the strength of Dr. Knopf's (New York) statement that a latent tuberculosis can be stirred up from its quiescent state and terminate fatally. Out of 148 patients who were weighed from one to three years after their discharge and after resuming their usual occupations, 42·6 per cent. had increased in weight since leaving the sanatorium, 32·4 per cent. weighed more than before admission, 10·8 per cent. weighed the same, and only 14·2 per cent. had decreased in weight. However, a convalescent home near Bâle for some of the discharged patients is very desirable and the idea will soon be realised.

Zürich, Sept. 10th.

## ROME.

(FROM OUR OWN CORRESPONDENT.)

*Consular Report for 1899.*

IN his report recently issued the British Consul at Rome gives the following figures to show the diminution which has been effected in the death-rate of the city during the last quarter of a century:—

| Year. | Mortality per 1000 inhabitants. |
|---|---|
| 1875 ... ... ... ... ... ... ... | 33·9 |
| 1887 ... ... ... ... ... ... ... | 22 8 |
| 1899 ... ... ... ... ... ... ... | 17·2 |

The death-rate for 1899 compares very favourably with that of other towns in Italy and on the continent, as may be seen by another table from the same report:—

| 1899. | Death-rate per 1000 inhabitants. | 1899. | Death-rate per 1000 inhabitants. |
|---|---|---|---|
| Rome ... ... ... | 17·2 | Budapest ... ... | 22·3 |
| Leghorn ... ... | 19·0 | Cologne ... ... | 23·1 |
| Venice ... ... ... | 22·2 | Munich... ... ... | 23·9 |
| Bologna ... ... | 24·1 | St. Petersburg ... | 24·7 |
| Paris ... ... ... | 20·1 | Madrid ... ... ... | 30·1 |

There were five births, 22 deaths, and five marriages of British subjects during the year.

*Progress of the Anti-malarial Campaign.*

The Red Cross Society reports that during the first period (July 1st to July 23rd) of the experiments now being carried out under its auspices in the Agro Romano 30 patients were conveyed to Rome or elsewhere by the seven ambulances engaged in the work. During the second period (July 24th to August 15th) 61 patients were so transported. The medical officers attached to the ambulances attended during the first period to 880 patients, of whom 528 were affected with malaria, and during the second period to 892 patients, of whom 801 were malarial. In spite of the notoriously unhealthy character of the localities in which the ambulances are stationed no single member of the staff, either among medical men or attendants, had contracted fever during these two periods. The immunity thus enjoyed by the members of the mission is ascribed to the precautions adopted by the municipality for preventing the entrance of mosquitoes to the rooms in which the men sleep and is to be regarded as a further confirmation of the correctness of the mosquito theory of malarial infection.

*The Sanatoria for Tuberculosis.*

A Government Commission has been appointed to examine the scheme for the establishment of the proposed "Sanatorio Umberto I. per la Tubercolosi" described in my last letter. It has for its president Professor Bizzozero of Turin, and includes amongst its nine members Professor Durante and Professor Ballori of Rome, Professor De Giovanni of Padua, and five engineers from Milan, Turin, Rome, Naples, and Pisa respectively. The Parliamentary Committee charged with the duty of submitting the project to the Government is a large one, consisting of 29 deputies, and is presided over by Professor Baccelli. At Leghorn the municipality have taken in hand the foundation of the sanatorium for that city; the local savings bank has contributed a sum of 45,000 lire (£1800), and several members of the promoting committee offer handsome subscriptions towards it. At Pisa the communal council have passed a resolution devoting a sum of 30 000 lire (£1200) to a like object and soliciting in its favour the support of the province and communes.

Sept. 11th.

# Obituary.

WILLIAM MARSHALL, M.D. ST. AND., L.F.P.S. GLASG.,
CONSULTING PHYSICIAN TO THE DUMFRIES AND GALLOWAY ROYAL INFIRMARY.

THE death is announced, on August 30th, of Dr. William Marshall of Dumfries at the age of nearly 80 years. Born in Caledon, county Tyrone, where his father, Mr. Huggins Marshall, was then resident, William Marshall received his medical education in Glasgow, taking the L.F.P.S. in 1845 and the M.D. at St. Andrews University in the same year, after which he went to the Southern States of America. Returning home in 1848 he was sent with 11 others to Dumfries to assist during the cholera epidemic of that year. On the cessation of the outbreak Dr. Marshall remained in the town as assistant to the late Dr. McCulloch and after a few years started practice on his own account. He was recognised as a skilful practitioner and his kind and genial manner secured for him a host of friends and an extensive connexion. Dr. Marshall took a keen interest in the affairs of Dumfries, served on its town council, and supported zealously schemes for improving the sanitary condition of the town, notably in regard to its water-supply. He was specially concerned in the welfare of the Dumfries and Galloway Royal Infirmary, on the medical staff of which he served up to about four years ago, when he retired and was appointed consulting physician. He was also medical officer to the Dumfries Parochial Board for over 40 years, being eventually assisted by his elder son who, unfortunately, predeceased him. Dr. Marshall was one of the first in the district to be connected with the Volunteer movement and served as surgeon for some eight years, taking part in the review by the Queen in 1860. He possessed all the wit and charm of manner which distinguish the natives of the Emerald Isle. He was a capital *raconteur*, and not even severe suffering would prevent him from making witty remarks and telling a good story. He took a close interest in all outdoor sports, especially coursing, bowling, and curling. He was fond of music and until a contraction of his little finger became pronounced he was no mean performer on the violin. He was an ardent Freemason and recently was an office-bearer in the provincial lodge. Dr. Marshall was twice married and has one surviving son now in New Zealand.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Gervais-Koyziewicz, Surgeon of the Bordeaux Hospitals.—Dr. Domingos Freire of Rio de Janeiro, whose work in the direction of searching for the cause of yellow fever and his attempts to render individuals immune to it are well known.—Dr. F. H. Frölich, Surgeon-General in the Saxon Army and a well-known author, at the age of 63 years.

# PRIZES AND SCHOLARSHIPS AT THE MEDICAL SCHOOLS.

THE following is a list of prizes, &c., awarded for the sessions of 1899–1900:—

*St. Bartholomew's Hospital.*—Lawrence Scholarship and Gold Medal: C. J. Thomas. Brackenbury Medical Scholarship: A. T. Pridham. Brackenbury Surgical Scholarship: C. E. West. Matthews Duncan Medal and Prize: R. H. Paramore (Prize). Senior Scholarship in Anatomy, Physiology, and Chemistry: N. E. Waterfield. Entrance Scholarships—Chemistry and Physics: not awarded; Biology and Physiology: not awarded; (Junior) H. D. Clementi-Smith and K. S. Wise, equal; Preliminary Scientific Exhibition: not awarded; Jeaffreson Exhibition: M. B. Reichwald; Shuter Scholarship: H. H. Dale; Kirkes Scholarship and Gold Medal: A. E. H. Thomas. Bentley Prize: E. E. Young. Hichens Prize: A. Hamilton. Wix Prize: N. E. Waterfield. Harvey Prize: A. Hamilton. Sir George Burrows Prize: C. E. West. Skynner Prize: F. C. Shrubsall. Practical Anatomy (Junior)—Treasurer's Prize: W. Hamilton; (2) E. F. Travers, (3) T. J. Faulder, (4) C. E. Denton, (5) S. M. Lawrence, (6) W. C. Pickering, (7) C. H. Fielding, (8) H. Beckton, (9) W. H. Barnett. Practical Anatomy (Senior)—Foster Prize: (1) W. A. Aldred and H. V. Wenham, equal; (2) T. H. Harker, (3) J. Burfield, (4) A. C. Brown and C. C. Robinson, equal; (5) A. Hamilton, (6) A. F. Forster, (7) G. B. Aubrey. Junior Scholarships in Anatomy and Biology (1900): (1) T. J. Faulder, (2) E. E. Maples. Junior Scholarships in Chemistry and Histology (1899): (1) C. C. Robinson, (2) W. A. Aldred.

*Charing Cross Hospital.*—Livingstone Scholar: P. Rees. Huxley Scholar: R. R. Huxtable. University Scholars: A. E. Taylor and H. F. Skrimshire. Epsom Scholar: C. H. F. Johnston. Llewellyn Prize (£25): H. S. Gabb. Governors' Clinical Gold Medal: C. H. Fennell. Golding Prize: Certificate and £10, P. Gully. Pereira Prize: Certificate and £5, A. G. Pitts. Anatomy (Senior): Prize, A. G. Payne; Certificate, F. J. Pierce. Anatomy (Junior): Prize, C. G. Riddett; Certificates, P. Rees, H. Smith, P. Gully, A. G. Finch, and H. B. Sawday (equal), L. P. Maitland, and C. H. F. Johnston. Biology: Prize, P. Gully; Certificates, H. H. R. Bayley, H. F. Strictland, and G. C. Pounds. Chemistry: Prize, P. Gully; Certificates, C. P. Tessier, C. L. Saies, A. G. Finch, H. H. R. Bayley, and G. C. Pounds. Physiology (Senior): Prize, G. C. M. Davies. Physiology (Junior): Prize, G. Sheppard; Certificates, L. P. Maitland, P. Rees, H. Smith, and A. G. Finch. Medicine (Senior): Prize, H. S. Gabb: Certificates, J. P. Candler, G. O. Lambert, and E. F. Ackery. Medicine (Junior): Prize, A. E. Taylor; Certificate, H. M. Skrimshire. Surgery (Senior): Prize, Mr. E. F. Ackery. Surgery (Junior): Prize, H. F. Skrimshire. Practical Medicine: Prize, A. G. Pitts and G. O. Lambert (equal); Certificates, C. J. A. Mercier and A. R. F. Hubbard. Practical Chemistry: Prize, S. G. Amoore; Certificates, V. N. Whitamore, J. L. O. Tilley, A. G. Finch, and G. F. Denning. Psychological Medicine: Prize, H. S. Gabb; Certificates, A. G. Pitts, J. D. Rolleston, G. O. Lambert, and E. F. Ackery. Practical Midwifery: Prize, B. R. Lloyd; Certificates, A. G. Pitts and A. E. Taylor (equal). Midwifery: Prize, H. S. Gabb; Certificate, A. C. Ingram. Pathology: Prize, G. O. Lambert; Certificates, B. G. Fiddian and H. S. Gabb (equal); B. R. Lloyd and C. J. A. Mercier (equal). Public Health: Prize, C. H. Fennell; Certificate, D. V. Muller. Therapeutics: Prize, J. D. Rolleston. Forensic Medicine and Toxicology: Prize, B. G. Fiddian. Materia Medica: Prize, C. L. Lakin; Certificate, R. H. Cooper.

*Guy's Hospital.*—Open Scholarships in Arts: Frank Thomas Herbert Wood, Roan School, Greenwich, £100; Herbert Stanley Knight, Bancroft's School, Woodford Wells, £50; and Herbert Andrew Watney, Trent College, Derbyshire, Certificate. Dental Students: Osborne Black, Foyle College, Londonderry, £30. Open Scholarships in Science: Henry Francis Bell Walker, Stockport Grammar School, and private study, £150; John Hunter Clatworthy, Guy's Hospital, £60; Gerald Russell, Guy's Hospital, Certificate; and Harry Hunter Carter, Guy's Hospital, Certificate. Scholarship for University Students: Paul Norman Blake Odgers, Lincoln College, Oxford, £50; Greer Edmund Malcomson, Owens College, Manchester, Certificate; and Frederick Henry Parker, Pembroke College, Cambridge, Certificate. Junior Proficiency Prizes: Percy Reginald Bolus, £20; Edwin Henry Britton Milsom, £12 10*s.*, and Neville Ivens Spriggs, £12 10*s.* (equal); Kenneth Black, Certificate; Reginald Larkin, Certificate; and Alexander Moxon Webber, Certificate. Michael Harris Prize for Anatomy: Alexander Moxon Webber, £10; Reginald Larkin, Certificate; and William Leigh Maule Day and Lionel Henry Moiser (equal Certificates). Wooldridge Memorial Prize for Physiology: Percy Reginald Bolus, £10; Neville Ivens Spriggs, Certificate: and Edwin Henry Britton Milsom, Certificate. Hilton Prize for Dissection (1899): Harold Tipping, £2 10*s.*, and Alfred Herbert Edwin Wall, £2 10*s.* (equal). Arthur Durham Prizes for Dissection—First Year's Students: Edward Crosby Peers, £5. Senior Students: Alexander Moxon Webber, £15; Geoffrey Carlisle, Certificate; and Frederick Rogerson, Certificate. Dental Prizes—First Year's Students: Gerald Hamilton Morris, £10; and Samuel William Iles, Certificate. Second Year's Students (1899): John Black, £15; and Francis Wilberforce Garman and Harold Maurice, equal Certificates. Practical Dentistry Prize: Gerald Hamilton Morris, £5, and Arthur Henry Clogg, £5 (equal). Senior Proficiency Prizes: Graham Scales Simpson, £20; and Edward Cohen (Certificate). Treasurer's Gold Medal for Clinical Surgery: Graham Scales Simpson. Beaney Prize in Pathology (1899): Caleb Thomas Hilton, £34; and Frank Shufflebotham (Certificate). Richard Bredin Prize for Clinical Study: Caleb Thomas Hilton, £25.

*King's College, London.*—Sambrooke Exhibitions: Eardley Lancelot Holland, Thomas Henry Jones, and John James. Medical Entrance Scholarship: Arthur James Wigmore. Warneford Scholarships: John Alexander Drake and Matthew Robert Cecil McWatters. Senior Scholarship: Arthur Edmunds. Second Year Scholarship: Harold Benjamin Day. Junior Scholarships: Thomas Henry Jones and Eardley Lancelot Holland. Rabbeth Scholarship: Frederick Champ McCombie. Leathes Prize: Harold Balme and Colin James Galbraith. Warneford First Prize: Harold Balme; Second Prize: Edward Augustine Bell. Barry Prize (Divinity): Arthur Donald Griffith. Tanner Prize: Edgar Winn Fox Dolman. Todd Prize: Arthur Edmunds. Hygiene Prize: James Duncan Clay. Pathological Anatomy Prize: Alfred Hocart Brehaut. Obstetric Medicine, Forensic Medicine, and Medicine Prizes: Archibald Douglas Reid. Surgery Prize: Frederick Charles Carle. Professor Rose's Surgery Prize: Hubert Liston Willcox. Anatomy, Physiology, Chemistry, and Materia Medica Prizes: Albert Angelo Myers.

*London Hospital.*—Price Scholarship in Science (£120): R. Milne. Price Scholarship in Anatomy and Physiology (£60): A. W. S. Fisher. Entrance Science Scholarships—£60 Scholarship: T. D. Smith; £35 Scholarship: G. A. Soltau (equal, scholarship divided). Buxton Scholarships in Arts—£30 Scholarship: J. A. Mulvany; £20 Scholarship: J. E. Hoar. Epsom Scholarship for Students of Epsom College: L. Warren. Clinical Medicine—£20 Scholarship: A. B. Soltau and J. H. Philbrick (equal, Scholarship divided); Honorary Certificate: H. P. Bradley. Clinical Surgery—£20 Scholarship: A. B. Soltau; Honorary Certificates: A. L. Matthews, G. F. Barham, and W. Steen. Clinical Obstetrics—£20 Scholarship: W. F. Ellis; Honorary Certificates: A. L. Matthews, F. Challans, I. Stusser, and H. Balean. Duckworth Nelson Prize (Biennial, £10): awarded in 1899. Andrew Clark Prize—(Biennial, £26): H. P. Bradley; Honorary Certificate: A. B. Soltau. Letheby Prizes—Senior (£20): M. Culpin; Honorary Certificate: J. A. Milne; Junior (£10) T. D. Smith. Honorary Certificates: R. Milne, A. G. Tresidder, and V. E. Ridewood. Hutchinson Prize—(Triennial, £35): next award in 1902. Anatomy and Physiology—£25 Scholarship: M. T. Williams. Honorary Certificates: H. B. W. Smith, H. R. Cran, and R. V. Dolbey. Anatomy and Biology—£20 Scholarship: R. Milne; Honorary Certificate: D. T. Smith. Minor Surgery Prizes—£15 Prize: C. D. Walsh; £10 Prizes: J. Avery and H. B. W. Smith; £5 Prizes: A. C. Dixon, N. W. Hill, H. W. B. Danaher, R. V. Dolbey, and N. C. Wallis. Honorary Certificates: F. H. Rotheram and F. Todd. Practical Anatomy—£6 Prize: R. L. Ridge; £4 Prize: E. S. Molyneux; Honorary Certificates: F. W. Jones, H. H. Bashford, and T. S. Dudding. Anderson Prizes—£2: A. Simey, C. E. Ham, and R. A. Eastmonde. £1: A. J. Couzens, A. W. S. Fisher, and W. B. Vaile. Honorary Certificates: C. V. Bulstrode, R. Burges, E. M. Clarke, L. C. Coode, H. P. Croby, E. F. Fisher, H. R. Jeremy, H. E. Ridewood, A. M. Simpson, J. E. Spicer, I. Stusser, and E. Weatherhead.

*Middlesex Hospital*.—Entrance Scholarships: (1) W. N. Kingsbury and (2) T. R. Felix. University Scholarship: L. Courtauld. Broderip Scholarship: (1) F. D. Blandy, and (2) W. P. Panckridge. The Governors' Prize: F. D. Blandy. Hetley Prize: F. D. Blandy. Lyell Medal: R. F. C. Ward. Leopold Hudson Prize: T. W. Scott. Second Year's Exhibition: P. G. Foulkes; W. Gillitt (*proximé accessit*). First Year's Exhibition: W. G. Taylor. Medicine and Surgery Prizes: J. S. Goodall. Surgery Certificate: N. Black. Practical Medicine Prize: E. R. Griffiths. Certificates: C. E. Lakin, H. R. Dutton, and T. W. Scott (equal), G. P. Duprey, and G. H. K. Young. Practical Surgery Prize: L. F. Lovell-Keays; Certificates: G. P. Duprey, D. Smith, E. R. Griffiths, S. Hastings, R. Phillips, and C. W. Rowntree. Forensic Medicine and Public Health Prize: R. A. Pitter; Certificate: C. E. Lakin. Mental Diseases Prize: C. E. Lakin. Pathology Prize: A. E. Pinniger; Certificate: S. Hastings. Midwifery Prize: D. J. Thomas; Certificate: H. B. Smith. Practical Midwifery Prize: G. E. Froggatt; Certificates: T. W. Scott, D. T. Jones, C. E. Blackstone, and F. B. Penfold. Pharmacology and Therapeutics Prize: D. J. Thomas; Certificates: T. Rose and J. W. Hele. Anatomy Prize: W. Gillitt; Certificates: F. G. Foulkes, I. D. Jones, and T. Rose. Dissections Prize: W. Gillitt; Certificates: J. W. Hele and I. D. Jones. Physiology Prize: F. C. Foulkes; Certificate: W. Gillitt. Histology Prize: W. C. Macaulay; Certificates: H. W. Perkins and W. C. Taylor. Chemistry Prize (winter session): C. H. B. Thompson; summer session: F. L. Dickson; Certificate: J. C. L. Hingston. Practical Pharmacy Prize: T. R. Felix; Certificates: F. L. Dickson and W. C. Macaulay.

*St. Mary's Hospital*.—Entrance Scholarships—in Natural Science of £144: J. N. Kilner; £78 15*s*.: C. J. Singer; £78 15*s*. (not awarded). Exhibition in Natural Science of £26 5*s*: U. Marks. University Scholarships of £57 15*s*.: A. H. Thomas and Gnoh Lean Tuck, B.A. Exhibitions of £26 5*s*.: B. H. Spilsbury, B.A., A. G. Bate, B.A., and H. M. Wilson, B.A. General Proficiency Scholarships of £20 each—for Proficiency in Anatomy, Physiology (including Histology), Biology, Chemistry, and Physics (not awarded); for Proficiency in Anatomy and Physiology (including Histology): M. F. Kelly; for Proficiency in Midwifery, Pathology, Medical Jurisprudence, and Materia Medica: H. J. Van-Praagh; for Proficiency in Medicine and Surgery (including Operative Surgery): W. H. Willcox, B.Sc. Special Prizes—Gold Medal in Clinical Medicine: W. H. Willcox, B.Sc.; Kerslake Scholarship in Pathology and Bacteriology: W. V. Shaw, B.A.; Meadows Memorial Prize in Obstetrics: H. J. Van-Praagh; Clinical Medicine: H. J. Van-Praagh and B. F. Hussey; Clinical Surgery: W. V. Shaw, B.A., and J. F. E. Bridger (equal); Ophthalmology: R. R. Cruise and R. Hobbs; Dermatology: W. Sass and H. T. Doble; Prosectors: W. L. M. Goldie and J. H. Burgess. Class Examinations, Summer Session, 1899—Hygiene Prize: B. F. Hussey; Certificate: J. Klein; Materia Medica Prize: W. J. Morrish; Obstetrics Prize: E. W. Holyoak; Certificate: A. Whitmore, B.A.; Medical Jurisprudence Prize: B. F. Hussey; Certificate: E. L. Jenkins; Psychological Medicine Prize: W. H. Willcox, B.Sc.; Practical Chemistry Prize: E. G. R. Lithgow; Certificate, H. E. Batten; Chemistry Prize: U. Marks; Certificate, G. E. Peachell. Winter Session, 1899–1900—Medicine Prize, not awarded; Certificates: J. Tattersall, E. R. Clarke, B.A., and J. C. Matthews, B.A.; Surgery Prize: W. H. Clayton-Greene, B.A.; Certificates: C. H. Brodribb and R. R. Cruise: Practical Surgery Prize: C. H. Brodribb; Certificates: W. H. Clayton-Greene, B.A., J. F. E. Bridger, and T. H. J. E. Hughes; Pathology Prize: J. C. Matthews, B.A.; Certificates: F. M. G. Tulloch and E. R. Clarke, B.A.; Physiology (Senior) Prize, not awarded; Certificate: E. L. Ash; Physiology (Junior) Prize: W. K. D. Breton; Certificates: G. E. Peachell and A. F. Cole; Histology Prize: J. H. Burgess; Certificate: E. L. Ash; Anatomy (Senior) Prize: W. L. M. Goldie; Certificates: A. C. Motta and J. H. Burgess; Anatomy (Junior) Prize: G. E. Peachell; Certificate: J. N. Kilner; Biology Prize: S. H. Kilroe; Certificates: E. C. Young and F. C. Lloyd.

*St. Thomas's Hospital*.—Winter Session, 1899–1900.—Entrance Science Scholarships—First Scholarship (£150) and Certificate of Honour: L. Bathurst; Scholarship (£60) and Certificate of Honour: L. Craske. University Scholarship—Scholarship (£50) and Certificate of Honour: A. C. Hudson. First Year's Students—William Tite Scholarship (£27 10*s*.) and Certificate of Honour: K. Takaki. Second Year's Students—Peacock Scholarship (£38 10*s*.) and Certificate of Honour: H. S. Bennett; Certificate: F. W. W. Smith. Third Year's Students—Musgrove Scholarship (second tenure) and Certificate of Honour: S.U. Ind. Fifth Year's Students—College Prize (£10): F. C. Eve (Medicine); College Prize (£10): W. H. O. Woods (Surgery); College Prize (£10): T. S. Taylor (Midwifery); Hadden Prize (£10): J. E. H. Sawyer (Pathology); College Prize (£10): J. L. Lock (Pharmacology); College Prize (£10): R. B. Kinloch (Forensic Medicine and Insanity); and College Prize (£10): W. B. Fry (Public Health). Practical Medicine—Mead Medal: R. B. Kinloch; Certificate of Honour: F. C. Eve. Surgery and Surgical Anatomy—Cheselden Medal: T. H. Edwards. Pathology and Morbid Anatomy—Bristowe Medal: C. L. Hawkins; Certificates of Honour: A. E. Martin and L. S. Dudgeon. Grainger Testimonial Prize (£15): F. C. Eve. For Reports of Surgical Cases—Solly Medal and Prize: J. E. H. Sawyer. For General Proficiency and Good Conduct—Treasurer's Gold Medal: F. B. Skerrett.

*University College, London*.—Entrance Scholarships: Bucknill Scholarship (£120): G. Hall. Intermediate Medical Course (£57 15*s*. each): J. A. Ferrière and E. Mapother. Final M.B. Course (£79 16*s*. each): C. S. Parker and T. L. Llewellyn. Atchison Scholarship (£55 per annum for two years): R. E. Lloyd. Bruce Medal: R. E. Lloyd. Physiology (Professor E. H. Starling, M.D., F.R.C.P., F.R.S.)—Senior Class: Gold Medal, A. M. H. Gray. Third Class: G. S. Hett. Junior Class: Silver Medal, R. A. Greeves. Certificates: (2* equal) J. A. Ferrière and G. Hall, (4*) R. S. Woods, and (5*) E. G. Perodeau. Second Class: A. G. C. Findlay. Third Class: N. S. Finzi, P. M. Roberts, C. S. White. Anatomy (Professor G. D. Thane, Sub-Dean)—Senior Class—1st Silver Medal: A. M. H. Gray; 2nd Silver Medal: G. S. Hett. Third Class: C. H. Berry and M. W. Stewart-Smith. Junior Class—Silver Medal: R. A. Greeves. Certificates: (2*) G. Hall and (3*) C. D. Holdsworth. Second Class: J. A. Ferrière, G. E. O. Williams, R. S. Woods. Third Class: W. Appleyard, A. J. Blaxland, H. Farncombe, and A. G. C. Findlay. Medicine, Professor F. T. Roberts, M.D., B.Sc.—Second Class: L. G. Hopkins, A. E. Jones, and R. E. Lloyd. Surgery (Professor A. E. Barker, F.R.C.S.)—Gold Medal: R. E. Lloyd; Silver Medal: L. G. Hopkins. Second Class: A. E. Jones. Pathology (Professor Sidney Martin, M.D., F.R.S.)—Morbid Histology and Bacteriology—Tuke Silver Medal: T. L. Llewellyn. Third Class: C. S. Parker. Practical Surgery (Bilton Pollard, B.S., F.R.C.S., and Raymond Johnson, B.S., F.R.C.S.)—Erichsen Prize: L. G. Hopkins. Certificates: (2*) S. H. Bown, (3*) O. L. Addison, and (4*) T. C. Savage. Second Class: S. Bree, R. E. Lloyd, H. W. Reynolds, and A. N. Stevens. Clinical Medicine (Professor Sydney Ringer, M.D., F.R.S.)—Senior Class: Fellowes Gold Medal: H. W. Reynolds; Fellowes Silver Medal, A. E. Jones; Certificate: (3*) T. C. Savage. Second Class: D. L. Davies, A. Emerson, L. G. Hopkins, R. E. Lloyd, and G. A. Upcott-Gill. Junior Class (Professor J. Rose Bradford, M.D., D.Sc., F.R.S.)—Fellowes Silver Medal: A. F. Horn; Certificates: (2*) G. E. Waugh, (3*) C. S. Parker, and (4*) J. E. Stratton. Second Class: J. B. Burt, W. T. Crawford, L. A. E. de Zilwa, T. L. Llewellyn, and W. Parsons. Third Class: J. C. Fleming and F. J. Lawson. Clinical Dental Surgery (Lecturer, P. S. Spokes, M.R.C.S.)—Silver Medal, L. G. Hopkins. Certificates (2* equal) A. E. Jones and R. E. Lloyd. Honours List, 1899–1900.—Entrance Scholarships: E. H. Bennett-Bailey (110 guineas), C. G. Browne (£50), H. C. Hocken (£40), L. White (£40), P. Farrant (£40), H. G. L. Haynes (£40), C. D. Fox (£40), and W. H. France (£30). "Chadwick" Prize (value 20 guineas): W. Payne (Prize) and F. W. W. Dawson (Certificate). "Bird" Prize and Medal (value £14): W. Payne. Medicine: F. W. W. Dawson (Prize). Surgery: W. Payne (Prize) and F. W. W. Dawson (Certificate. Clinical Surgery: W. Payne.

* Obtained the number of marks qualifying for a Prize.

*University College, Bristol*.—Medicine Prize: P. G. Stock; Certificate: S. J. Willcox. Surgery Prize: R. G. Johnson; Certificate: P. G. Stock. Public Health Prize: T. Aubrey; Certificates: J. R. Frost and A. G. G. Plumley (equal). Senior Anatomy Prizes: J. D. C. Calcott and J. E. Sparks (equal). Junior Anatomy Prize: A. R. Short. Physiology Prizes: J. D. C. Calcott and J. E. Sparks (equal). Practical Physiology and Histology Prize: J. E. Sparks; Certificate: F. Parlett. Biology Prize: G. B. Gill; Certificate: W. T. Webb. Chemistry Certificates: G. B. Gill and

H. E. Hopper. Midwifery Prize: R. G. Johnson. Medical Jurisprudence Certificate: T. Aubrey. Pathology and Morbid Anatomy Prize: T. Aubrey. Operative Surgery Certificate: T. Aubrey. Practical Medicine, Surgery, and Midwifery Certificate: R. G. Johnson. Materia Medica and Practical Pharmacy Prize: H. de Vine; Certificate, A. R. Short. Practical Chemistry Prize: G. B. Gill. *Bristol Royal Infirmary*—Second Entrance Scholarship (value 10 guineas): H. O. Gough and P. Moxey (equal). Clarke Prize (interest of £489), for third year's students: P. G. Stock. Suple Medical Prize (gold medal and seven guineas in money), for students of the fifth year: James Phillips. Suple Surgical Prize (gold medal and seven guineas in money), for students of the fourth year: J. R. Frost. Tibbits Memorial Prize (value nine guineas), for Proficiency in Practical Surgery: J. R. Frost and E. M. Pearse (equal). Pathological Prizes (value three guineas): J. R. Frost and James Phillips. Ophthalmic Prize (value three guineas): P. G. Stock. Special Certificates in Obstetric Medicine: F. A. Coates, J. R. Frost, H. Hemsted, W. B. Prowse, and P. G. Stock. Dental Prize (value three guineas): S. J. Willcox. Special Dental Prize: J. L. O. Tilley. *Bristol General Hospital.*—Lady Haberfield Entrance Scholarship (interest of £1000): H. de Vine. Sanders Scholarship (value £22 10*s.*), for Proficiency in Medicine, Surgery, and Obstetric Medicine: R. G. Johnson. Clarke Scholarship (value £15), for Proficiency in Surgery: R. G. Johnson.

*Queen Margaret College.*—Winter Session—Medal in Chemistry: Christian E. S. Smart. Medal in Anatomy: Gertrude D. Bostock, B.Sc. Medal in Physiology: Isabel D. Mitchell. Medal in Materia Medica: Gertrude D. Bostock. Medal in Pathology: Margaret E. Bryson. Medal in Surgery: Mary J. Pirret. Medal in Practice of Medicine: Elizabeth M. Sloan. Medal in Midwifery and Gynæcology: Elizabeth M. Sloan. Summer Session—Medals in Practical Physiology and Practical Pharmacy: Eliza J. Miller. Medal in Practical Pathology: Martha H. Scott. Medal in Medical Jurisprudence and Public Health: Gertrude D. Bostock. Prize in Ophthalmology: Martha H. Scott.

*Anderson's College Medical School.*—Winter Session, 1899-1900. Junior Anatomy—Kerr Bursar: David L. Provan, Wishaw. Certificates of Honour (in order of merit): David L. Provan, Wishaw; Reginald N. Macdonald, Buenos Ayres; Charles H. Osmond, Somerset; William Cameron Bower, Bradford; Percy J. Thomson, Glasgow; and John Miller, Glasgow. Senior Anatomy—Certificates of Honour (in order of merit): William Don, Glasgow; William Pritchard Airey, Liverpool; John M. Kelly, Kilmarnock; and Robert Wallace, Glasgow. Anatomy Prosectors: Reginald N. Macdonald, Buenos Ayres; and Charles H. Osmond, Somerset. Summer Session, 1900—Senior Anatomy—Certificates of Honour (in order of merit): John F. Webster, Paisley; Reginald N. Macdonald, Buenos Ayres; and James Eadie, Glasgow. Physiology (Professor W. Ernest Thomson, M.A., M.D.). Winter Session, 1899-1900—Medal and First-class Certificate of Honour: John F. Webster, Paisley. Special Prize and Certificate for Practical Work: Reginald N. Macdonald, Buenos Ayres. Practical Physiology—Summer Session, 1900—Medallist: Ian Campbell, Crieff. Certificates of Honour—First Class: Ian Campbell, Crieff, and C. H. Osmond, Somerset; Second Class: L. E. Jarrett, Kent. Materia Medica and Therapeutics (Professor R. Barclay Ness, M.A., M.B.)—Winter Session, 1899-1900—Medal: Henry Doig, Glasgow. Certificates of Honour (in order of merit)—First Class: Henry Doig, Glasgow; David Moodie, Galashiels; and Robert Roberts, Anglesea; Second Class: James H. Milne, Glasgow. Dental—Second Class (in alphabetical order): John Christie, Glasgow, and William Patterson, Glasgow. Practice of Medicine (Professor Samson Gemmell, M.D.).—Winter Session 1899-1900—Senior Division—First Prize: A. D. Thompson, Forfar, and Alexander Wilson, Glasgow (equal); Second Prize: George White, Glasgow. First Class Certificates (in order of merit): James Millar, Kilwinning; Hugh P. Wright, Glasgow; Edward P. Cathcart, Ayr; John Forrest, Glasgow; Jacob Mains, Liverpool; Charles E. Cuthbert, Glasgow; Thomas T. Bathgate, Bellshill; W. B. J. Pollock, Glasgow; and James Scott, Glasgow. Junior Division—First Prize: Samuel J. Cameron, Glasgow; Second Prize: Edward Gillespie, Govan; Third Prize: J. C. Ross, Sutherlandshire. First Class Certificates (in order of merit): William Robertson, Kilmarnock; Alexander Munro, Ross-shire; Andrew Stewart, Dalserf; William A. Milne, Glasgow, and John Morrison, India (equal); and Thomas Anderson, Newfoundland. Surgery (Professor T. Kennedy Dalziel, M.B.)—Winter Session, 1899-1900—Medal: Archibald Stevenson, Kilwinning. Certificates of Honour (in order of merit): First Class: Archibald Stevenson, Kilwinning; John Forrest, Glasgow; and Archibald Macmillan, Springburn; Second Class: William S. Cowin, Isle of Man; and Thomas Carruthers, Bridge of Weir. Midwifery and Diseases of Children (Professor John Edgar, M.A., B.Sc., M.B.)—Winter Session, 1899-1900—Medal: John Forrest, Glasgow. Certificates of Honour (in order of merit): First Class: John Forrest, Glasgow; Second Class: William S. Cowin, Isle of Man; Thomas R. Hunter, Sheffield; A. R. Moir, Glasgow; Thomas Anderson, Newfoundland; and Alexander Scoular, Carluke. Diseases of Women (Professor John Edgar, M.A., B.Sc., M.B.)—Summer Session, 1900—Medallist: Robert Ramsay, Glasgow. Certificates of Honour (in order of merit): First Class: Robert Ramsay, Glasgow; Alexander Scoular, Carluke; Reginald Nairn Dunlop, Glasgow; and Cecil R. Martin, Calcutta; Second Class: Richard H. Hunter, Sheffield. Medical Jurisprudence and Hygiene (Professor Carstairs Douglas, B.Sc., M.D.)—Summer Session, 1900—Medal: J. R. Smith, Greenock. Certificates of Honour (in order of merit): First Class: J. R. Smith, Greenock; A. Scoular, Carluke; J. B. Conner, Greenock; and C. R. Martin, Partick.

*London (Royal Free Hospital) School of Medicine for Women.*—Anatomy (Senior) (Examiner, Stanley Boyd, F.R.C.S.)—Prize: Miss Slater; Certificates: Miss Hill, Miss E. Watts, Miss Parson, Miss Francis, Miss Townsend, Miss Whitlock, Miss Chambers, and Miss Whittingham (equal), Miss Lamb, and Miss Iredell. Anatomy (Junior) (Examiner, Stanley Boyd, F.R.C.S.)—Prize: Miss Bolton; Certificates: Miss Kensington, Miss Fraser, and Miss Elgood. Practical Anatomy—First Prize: Miss Whitlock; Second Prize: Miss Slater. Physiology (Senior) (Examiner, Dr. Brodie)—Prize: Miss Slater; Certificates: Miss Chambers, Miss Elgood, Miss Iredell, Miss Thin, Miss Parson, Miss Sexton, Miss Watts, and Miss Whitlock; Physiology (Junior) (Examiner, Dr. Brodie)—Prize: Miss Bolton; Certificate: Miss Payne. Organic Chemistry (Examiner, Miss Evans, D.Sc.)—Prize: Miss Chambers; Certificates: Miss Hill, Miss Iredell, Miss Slater, Miss Watts, Miss Thin; Miss Kidd, and Miss Woodward (equal). Inorganic Chemistry (Examiner, Miss Evans, D.Sc.)—Prize: Miss Board. Biology (Examiner, G. P. Mudge, A.R.C.Sc.)—Prize: Miss Gibbon; Certificates: Miss Schiele and Miss Waller (equal), Miss O'Brien. Physics (for Preliminary Science Students) (Examiner, Miss E. A. Stoney)—Prize: Miss Hall; Certificate: Miss O'Brien. Physics (for L.S.A. students) (Examiner, Miss E. A. Stoney)—Prize: Miss Board and Miss Mann (equal); Certificates: Miss Kellgren and Miss Renouf. Medicine (Examiners, Miss Cock, M.D., and Dr. J. Walter Carr)—Prize: Mrs. Willey; Certificates: Miss E. M. Sharp, Miss H. G. Jones, and Miss Woodcock (equal). Midwifery (Examiner, Mrs. Scharlieb, M.D., M.S.)—First Evans Prize: Miss Shepheard; Second Evans Prize: Miss Scharlieb; Third Evans Prize: Miss Walters. Certificates: Miss Hickman, Miss Woodcock, Miss Fraser, Miss McDougall, and Miss K. Vaughan (equal), Mrs. Willey, Miss E. M. Sharp, Miss Gregg, Miss Chamberlain, Miss H. G. Jones, Miss Ivens, Miss A. E. Brown, Miss Mecklenburg, Miss Thorp, and Miss Burgess. Operative Midwifery (Examiner, Mrs. Stanley Boyd, M.D.)—Evans Prize of Five Guineas: Miss McDougall; Certificates: Mrs. Willey, Miss Hamilton, Miss Fraser, Miss Ivens, Miss Shepheard, and Miss S. Smith (equal). Entrance Scholarship for October, 1899, given by the Executive Council (value £30): Miss Sommer (Examiner, Mrs. Flemming, M.D.). Mackay Prizes, October, 1899: First Prize (value £20): Miss Maude Smith. Second Prize (value £20): Miss Hooper.

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TYPHOID FEVER AT MERTHYR TYDVIL.—At the meeting of the Merthyr Tydvil Urban District Council held on Sept. 5th Dr. E. G. Simons, the medical officer of health, reported that since Jan. 1st, 1900, there had been 201 cases of enteric fever notified; this represented more than all the cases notified in the two preceding years. Dr. Simons added that Merthyr Tydvil had had five times as many cases per 1000 notified as the average of all other towns where notification was adopted.

# Medical News.

UNIVERSITY OF DURHAM.—At the First Examination for the degree of Bachelor in Medicine, held at the College of Medicine, Newcastle-upon-Tyne, in September, the following candidates satisfied the examiners:—

OLD REGULATIONS.

*Chemistry with Chemical Physics.*—Arthur Edward Clayton, L.R.C.P. and S., Edinburgh School of Medicine; John Spencer Hall, M.R.C.S., L.R.C.P., St. Thomas's Hospital; and James Sandison, M.R.C.S., L.R.C.P., London Hospital.

NEW REGULATIONS.

1. *Elementary Anatomy and Biology, Chemistry and Physics.*—First-class Honours: Thomas William Maddison, College of Medicine, Newcastle-upon-Tyne. Second-class Honours: Stanley Robson and Arthur Lewin Sheppard, College of Medicine, Newcastle-upon-Tyne. Pass List: George Nixon Biggs, St. Thomas's Hospital; Henry Mounsey Braithwaite, William Ernest Falconar, John Galloway, Norman Haliburton Hume, and Joseph Henry Lewars, College of Medicine, Newcastle-upon-Tyne; Aurelius Victor Maybury, Guy's Hospital; Ernest Martin, College of Medicine, Newcastle-upon-Tyne; Donald Murray Ross, University of New Zealand; and William Edward Stevenson, Samuel George Webb, and James Leslie Wilson, M.A., College of Medicine, Newcastle-upon-Tyne.
2. *Chemistry and Physics.*—Frederick Durnford Atkins, St. Thomas's Hospital; Llewelyn Alfred Henry Bulkeley and Arthur Budd, College of Medicine, Newcastle-upon-Tyne; Edmund Howard Barrett, M.R.C.S., L.R.C.P., St. Mary's Hospital; Herbert Christal and Hugh Boyd Cunningham, College of Medicine, Newcastle-upon-Tyne; Fred Thomas Holliway Davies, Mason College, Birmingham; Harold Edgar Featherstone, Albert James Gilbertson, Arthur Henry Hogg, George Errington Lloyd, Colin Francis Frederick McDowall, and Mary Raw, College of Medicine, Newcastle-upon-Tyne: Leslie Martin Rosten, St. Bartholomew's Hospital; Olga Schiele, London School of Medicine for Women; Frederick James Strachan, William Tait Sewell, and William Lister Tindle, College of Medicine, Newcastle-upon-Tyne; and Richard Le Geyt Worsley, M.R.C.S., L.R.C.P., L.S.A., St. George's Hospital.
3. *Elementary Anatomy and Biology.*—Cyril Claude Lavington, William Seymour, and William Frank Wilson, College of Medicine, Newcastle-upon-Tyne; and Ernest Young, St. Mary's Hospital.

VACCINATION PROSECUTIONS.—At the meeting of the Trowbridge board of guardians held on Sept. 5th it was decided that the vaccination officer should not prosecute vaccination defaulters unless authorised by the guardians.

THE LATE DR. S. GOURLEY OF WEST HARTLEPOOL.—The governors of the Hartlepool Hospital at their monthly meeting on Sept. 4th decided to place in the surgical ward a bronze medallion as a memorial of the late Mr. Samuel Gourley, M.D. Glasg., F.R.C.S. Edin., J.P. for the county of Durham. Dr. Gourley was for upwards of 30 years a member of the honorary medical staff of that institution. The medallion is the gift of his widow, Mrs. Gourley.

MILK-SUPPLY OF LLANELLY.—At the meeting of the Llanelly Sanitary Committee held on August 31st Mr. J. C. Hill, the newly-appointed veterinary inspector, reported that he had visited the majority of the rural retailers of milk and had not found any which met the requirements of the Local Government Board Order of 1885. All were deficient in either air-space, ventilation, light, flooring, or cleanliness. Within the urban area matters were not much better.

PRESENTATION TO A MEDICAL MAN.—At a recent meeting of the Sydney (Australia) City Council, the mayor of the city occupying the chair, the following resolution was unanimously carried: "That the retiring health officer, Mr. Gwynne-Hughes, be granted three months' leave on full pay, and that in accepting his resignation the council desires to place on record its high appreciation of his distinguished services to the council and to the citizens and that this expression of the council's wish be engrossed on vellum, signed by the mayor and town clerk, under seal, and conveyed to Mr. Gwynne-Hughes."

THE LATE MR. J. COUCH.—Mr. James Couch died at his residence, The Grove, Uplands, Swansea, on August 20th, in his seventy-fourth year. Mr. Couch, who was born at Swansea, received his medical education at University College Hospital, London, and took the qualifications of M.R.C.S. Eng. and L.S.A. in 1851 and 1866 respectively. He shortly afterwards commenced practice in Gower and then removed to Swansea where he for 34 years carried on an extensive practice. Mr. Couch was greatly respected in Swansea and much sympathy is felt there with his family. One of his sons is in practice at Swansea, and another, Mr. Llewelyn Couch, who was chief officer on the steamship *Mohegan*, only recently lost his life off the Manacles rock, Cornwall, while gallantly exerting himself to save the lives of the women and children.

## BOOKS, ETC., RECEIVED.

ALCAN, FELIX, Paris.
Le Phtisique et Son Traitement Hygiénique. Par E. P. Léon-Petit et Dr. Herard. 1895.

AMERICAN JOURNAL OF OPHTHALMOLOGY, St. Louis, Mo.
Original Contributions concerning the Glandular Structures appertaining to the Human Eye and its Appendages. By Adolf Alt, M.D., St. Louis. Illustrated. 1900.

BAILLIÈRE ET FILS, Paris.
La Pratique des Maladies des Yeux dans les Hôpitaux de Paris. Par P. Lefert. 1895.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
An Illustrated Dictionary of Medicine, Biology, and Allied Sciences. Fifth edition. By George M. Gould, A.M., M.D. 1900. Price 40*s.* net.

BOOT AND SON, 24, Old Bailey, London.
Anglo-Saxon Guide to the Paris Exhibition, 1900, with a complete List of the British Awards. New edition. 1900.

CHURCHILL, J. & A., Great Marlborough-street, London.
A Short Practice of Gynæcology. By H. Jellett, B.A., M.D. Dubl. Illustrated. 1900. Price 7*s.* 6*d.*
Southall's Organic Materia Medica. By J. Barclay, B.Sc. Lond., F.C.S. Sixth edition. 1900. Price 7*s.* 6*d.*
Ulceration of the Bladder, Simple, Tuberculous, and Malignant. By E. H. Fenwick, F.R.C.S. 1900. Price 5*s.*
A Manual of Midwifery. By A. L. Galabin, M.D. Cantab., F.R.C.P. Lond. Fifth edition. Illustrated. 1900. Price 15*s.*

CLARK, R. & R., Edinburgh.
The Climatic Conditions necessary for the Propagation and Spread of Plague. By Baldwin Latham, M.I.C.E., &c. Reprint. 1900.

DENT, J. M. AND CO., Bedford-street, Strand, London.
The Human Frame and the Laws of Health. By Drs. Rebmann and Seiler. Translated from the German by F. W. Keeble, M.A. 1900. Price 1*s.* net.
Ethnology. Translated from the German of Dr. Michael Haberlandt. By J. H. Loewe. 1900. Price 1*s.* net.

DIGBY, LONG, AND CO., Bouverie-street, Fleet-street, London.
The Latest Fruit is the Ripest, or Women's Work. By Fred. Jas. Gant, F.R.C.S. Second edition. 1898. Price 1*s.* 6*d.*

KIMPTON, H., High Holborn, London.
Essentials of Diagnosis, arranged in the Form of Questions and Answers. By S. Solis-Cohen, M.D., and A. A. Eshner, M.D. Second edition. Illustrated. 1900.
Diseases of Women: a Treatise on the Principles and Practice of Gynecology. By E. C. Dudley, A.M., M.D. Second edition. Illustrated. 1900. Price 21*s.* net.
A Manual of Clinical Diagnosis by Means of Microscopic and Chemical Methods. By C. E. Simon, M.D. Third edition. Illustrated. 1900. Price 18*s.* net.

LEADENHALL PRESS, 50, Leadenhall-street, London.
The Life of Sir Astley Cooper. By William H. Horrocks, F.R.C.S. 1900.

LEWIS, H. K., Gower-street, London.
A Handbook of the Diseases of the Eye and their Treatment. By H. R. Swanzy, A.M., M.B., F.R.C.S. Irel. Seventh edition. Illustrated. 1900. Price 12*s.* 6*d.*

MASSON ET CIE, Paris.
Traité Pratique des Déviations de la Colonne Vertébrale. Par P. Redard. 1900.

NEW SYDENHAM SOCIETY, London.
Selected Essays and Monographs (from Foreign Sources). By Various Authors. 1900.

OFFICES OF THE "CHEMIST AND DRUGGIST," Cannon-street, London.
The Art of Dispensing. By P. MacEwan, F.C.S. Sixth edition. 1900.
Veterinary Counter Practice. By Qualified and Experienced Members of the Royal College of Veterinary Surgeons. Third edition. 1900.

PUBLISHED BY THE SANITARY DEPARTMENT OF THE MINISTER OF THE INTERIOR, Tokio.
Bericht über die Pestepidemie in Kobe und Osaka von November, 1899, bis Januar, 1900. Erstattet von Dr. S. Kitasato. 1900.

SIMPKIN, MARSHALL, HAMILTON AND CO., Stationers' Hall Court, London, E.C.
Assouan as a Health Resort. By W. E. Kingsford. Second edition. 1900. Price 1*s.* 6*d.*

SOUTHERN PUBLISHING COMPANY, Fleet-street, London.
Sixth International Otological Congress, London, August, 1899. Transactions. Edited by E. C. Baber, Hon. Secretary-General. 1900.

Magazines, &c., for September: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, Cornhill Magazine, Sunday Strand, Captain, Traveller, and Sandow's Magazine.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BEALES, J. W. L., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the West Flegg Sanitary District of the East and West Flegg Incorporation, vice A. Crisp, deceased.

BENHAM, F. L., M.D. Lond., B.Sc., M.R.C.P., M.R.C.S., has been appointed a Public Vaccinator for South Australia.

BLACKER, ARTHUR BARRY, M.D., Durh., B.S., L.R.C.P. Lond., M.R.C.S., has been appointed Superintendent of the New X-ray Department at the Hospital for Consumption and Diseases of the Chest, Brompton.

BURKITT, G. O. E., L.R.C.P., L.R.C.S. Irel., D.P.H., has been appointed Honorary Surgeon to the Ear and Throat Department, the Perth Public Hospital, New South Wales.

CANN, T. M., M.R.C.S., has been re-appointed Medical Officer for the Workhouse by the Newhaven Board of Guardians.

CARY, ARTHUR JAMES, L.R.C.P., L.R.C.S., L.M. Irel., has been re-appointed Medical Officer for the Bleadon District by the Axbridge Board of Guardians.

EVANS, D. R. POWELL, L.R.C.P. Lond., M.R.C.S., L.S.A. Lond., has been appointed Medical Officer for the North Wimbledon District of the Kingston Union, vice O. W. Berry, resigned.

FINEMORE, J. H., L.R.C.P. Edin., L.S.A. Lond., has been appointed Medical Officer for Boonah, Queensland.

FOWLER, GEO., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Edin., has been appointed Assistant Resident Medical Officer to the Sheffield City Hospitals.

GAIRDNER, JAS., M.D. Edin., L.R.C.S. Edin., has been appointed Medical Officer by the Perth City Council, vice T. Crieff, resigned.

GOWLLAND, J. G. BLANTYRE, L.R.C.P., L.R.C.S. Edin., L.F.P. & S. Glasg., has been appointed Captain in the Army Medical Corps, Queensland Defence Force (Land).

HAWLEY, S. H., M.B. Durh., has been appointed Medical Officer for the First Sanitary District of the Walsall Union.

HIRST, W., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Assistant Resident Medical Officer for the City Hospitals by the Leeds City Council.

HOGG, C. A., Jun., M.B., C.M. Edin., has been appointed Senior Assistant Medical Officer in the Lunacy Department of the Hospital for the Insane, Gladesville, New South Wales.

HOGGAN, B. B., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Officer of Health for the Shire of Meredith, Victoria, Australia.

HOUSE, F. M., L.R.C.P. Lond., M.R.C.S., has been appointed Officer of Health to the Beverley Local Board of Health, West Australia.

JACKSON, H. W., M.B. Lond., L.R.C.P., M.R.C.S., D.P.H., has been appointed Medical Officer for the Middlesborough Central Sanitary District, vice A. Webster.

KIRK, T. D., M.D., M.Ch. Irel., has been appointed Medical Officer for the Forden Sanitary District of the Forden Union, vice T. Morgan, resigned.

MACDONALD, G. B. D., M.B., Ch.M. Aberd., has been appointed Officer of Health for the Shire of Waranga, Eastern Riding, Victoria, Australia.

MARSH, JAS., M.B., C.M. Edin., has been appointed Medical Officer of Health for the Atherton Urban District, vice J. T. Neech, resigned.

MILLARD, R. J. M.B., Ch.M. Syd., has been appointed Senior Medical Officer, Callan Park, New South Wales.

MORTON, G., M.B. Syd., has been appointed Medical Officer, Kenmore, New South Wales.

ORMEROD, E. B., M.R.C.S., L.S.A. Lond., has been appointed Medical Officer, Thornborough, Queensland.

PRATT, ELDON, M.D. Lond., has been appointed Honorary Anæsthetist to the Cardiff Infirmary.

PRYTHERCH, JOHN R., M.B., Ch.B. Edin., M.R.C.S., L.R.C.P. Lond., has been appointed Second Resident Medical Officer to the Chester General Infirmary.

RENDLE, R., F.R.C.S. Eng., has been appointed Health Officer for Normanton, Queensland.

SYDENHAM, F. W., M.D. Edin., D.P.H. Vict., has been appointed Medical Officer for the Second Sanitary District of the Walsall Union.

WADDY, F. H., M.D. Glasg., C.M., has been appointed Medical Officer for the South Sanitary District of the Sheffield Union, vice W. J. T. Baker, resigned.

WILLIAMS, J. H., M.D. Edin., C.M., has been re-appointed Medical Officer of Health for the Borough of Flint.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BELGRAVE HOSPITAL FOR CHILDREN, 77, Gloucester-street, London.—House Surgeon, for six months. Board and residence, with £5 allowance.

BIRMINGHAM GENERAL DISPENSARY.—Resident Surgeon, unmarried. Salary £150 per annum, with an allowance of £30 a year for cab hire, and furnished rooms, fire, lights, and attendance.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRISTOL GENERAL HOSPITAL.—House Surgeon, for three years. Salary £120 per annum, with board, residence, &c., in the house.

CITY HOSPITAL FOR INFECTIOUS DISEASES, Newcastle-upon-Tyne.—Resident Medical Assistant for one year. Salary £60, with board, lodging, and washing.

CITY OF LIVERPOOL INFECTIOUS DISEASES HOSPITALS.—Assistant Resident Medical Officer to the above Hospitals, unmarried. Salary £100 per annum, with board, washing, and lodging at the Hospital. Applications to the Town Clerk, Town Clerk's Office, Liverpool.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Commencing salary £125 per annum with the usual allowances.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125, with prospect of increase to £250, with furnished apartments, board, attendance, and washing.

CUMBERLAND AND WESTMORLAND ASYLUM, Garlands, Carlisle.—Junior Assistant Medical Officer, unmarried. Salary £130 a year, rising to £150, with board, residence, &c.

CUMBERLAND INFIRMARY, Carlisle.—Assistant House Surgeon for seven months from Oct. 1st to April 30th. Salary at the rate of £40 per annum, with board, lodging, and washing.

DAVID LEWIS NORTHERN HOSPITAL, Liverpool.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Salary £100, with board and lodging.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

EAST SUSSEX COUNTY ASYLUM, Hayward's Heath.—Second Assistant Medical Officer and Pathologist, unmarried. Salary £175 per annum, with board, lodging, washing, and attendance.

GLASGOW EYE INFIRMARY.—Resident Assistant House Surgeon. Salary £50, with apartments and board.

GUEST HOSPITAL, Dudley.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, residence, board, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months, with an honorarium of £25.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £30 for that period.

HULME DISPENSARY, Dale-street, Stretford-road, Manchester.—House Surgeon. Salary £150 per annum, with apartments, coal, and gas.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—Junior Assistant Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and washing.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon. Salary £85 per annum, with board and lodging. Also Assistant House Surgeon for six months. Salary £25 for that period, with board and lodging.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Non-resident House Surgeon for six months. Honorarium at the rate of £25 a year.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

MANCHESTER CLINICAL HOSPITAL FOR WOMEN AND CHILDREN, Park-place, Cheetham Hill-road.—House Surgeon. Salary £80 per annum, with apartments, and board. Apply to the Secretary, 38, Barton Arcade, Manchester.

NEWCASTLE-UPON-TYNE CITY LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £140 a year, rising £10 annually to £160.

NEW HOSPITAL FOR WOMEN, 144, Euston-road, London.—Three fully-qualified medical women as Assistants in the Out-patient Department.

NEWPORT AND MONMOUTHSHIRE HOSPITAL, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence (no stimulants).

NOBLE'S ISLE OF MAN GENERAL HOSPITAL AND DISPENSARY, Douglas, Isle of Man.—Resident House Surgeon, unmarried. Salary £72 per annum, with board and washing.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Physician. Salary £100 per annum, increasing £10 per annum conditionally, with furnished apartments board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon for the Hyson Green Branch, unmarried. Salary £200 per annum. Special arrangement as to board, &c.

PARISH COUNCIL OF KINCARDINE, Ross-shire.—Resident Medical Officer. Salaries offered £52 10s. per annum as Medical Officer, £5 per annum as Vaccinator, with fees in lunacy in addition. Apply to Mr. D. Ross, Inspector of Poor, Ardgay.

PARISH COUNCIL OF TINGWALL, Whiteness and Weisdale.—Medical Officer. Salary £40 per annum, which includes the cost of medicine for paupers belonging to the parish. Apply to the Inspector of Poor, Scalloway, Shetland.

PARISH OF RESOLIS AND DISTRICT, Ross-shire.—Resident Medical Officer. Salary £72 10s., with a good general practice.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, rising £10 annually to £200 per annum, with furnished apartments in the asylum and board and washing.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £60, with board, lodging, and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon, for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton. House Surgeon for twelve months. Salary £80, with board, lodging, and washing. No stimulants.

ROYAL BUCKINGHAMSHIRE HOSPITAL, Aylesbury.—Resident Surgeon, unmarried. Salary £80 first year, rising annually by £10 to £100, with board and furnished apartments.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, London.—House Physician for six months. Salary at the rate of £40 per annum, with furnished apartments, board, and washing. Also Resident Medical Officer for six months. Salary at the rate of £100 per annum, with furnished apartments, board, and washing.

ROYAL ISLE OF WIGHT COUNTY HOSPITAL, Ryde.—Resident House Surgeon. Salary £50 and a fee of £10 10s. for the annual course of lectures to the nurses.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), Greenwich, S.E.—House Surgeon. Salary £50 per annum, with board, residence, and washing.

SHEFFIELD UNION WORKHOUSE INFIRMARY.—Junior Assistant Medical Officer, for the Workhouse Infirmary, Fir Vale, Sheffield, for one year, unmarried. Salary £75, with furnished apartments, board, and washing. Apply to the Clerk to the Guardians, West Bar, Sheffield.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum, with residence, board, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at the rate of £24 per annum, with board, washing, and residence.

THE SECRETARY OF STATE FOR THE HOME DEPARTMENT gives notice of a vacancy as Medical Referee under the Workmen's Compensation Act, 1897, for Bolton, in County Court Circuit No. 5.

WEST DERBY UNION.—Resident Assistant Medical Officer for the Workhouse, Rice-lane, Walton-on-the-Hill, Liverpool. Salary £100 per annum, with first-class rations, apartments, &c. Apply to the Union Clerk, Brougham-terrace, West Derby-road, Liverpool.

WEST HAM HOSPITAL, Stratford, E.—Junior House Surgeon for one year. Salary £75 per annum, with board, residence, &c.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician and also House Surgeon for six months. Board and lodging provided.

WEST NORFOLK AND LYNN HOSPITAL, King's Lynn.—House Surgeon. Salary £100 per annum, with board, residence, and washing.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence in the hospital.

# Births, Marriages, and Deaths.

## BIRTHS.

BEALE.—On Sept. 8th, at Grosvenor-street, W., the wife of Peyton T. B. Beale, F.R.C.S., of a daughter.

BOWER.—On Sept. 7th, at Elton House, Gloucester, the wife of E. Dykes Bower, F.R.C.S. Ed., of a son.

DOBIE.—On Sept. 6th, at Hunter-street, Chester, the wife of W. Henry Dobie, M.B., M.R.C.S., of son.

MACAULAY.—On Sept. 2nd, at Milkwood-road, Herne-hill, S.E., the wife of Bryce Johnston Macaulay, L.R.C.P., L.R.C.S., of a son.

PEARSON.—On Sept. 8th, at Alicedale, Cape Colony, the wife of Maurice G. Pearson, M.B., B.Sc., F.R.C.S. Eng., of a son.

## MARRIAGES.

BIRD—BURRINGTON.—On Sept. 11th, at Wembdon, Bridgwater, by the Rev. George Trevor, vicar of Holy Trinity, Bridgwater, assisted by the Rev. J. M. Evans, vicar of the parish, George William Harvey Bird, M.A., M.B., B.C. Cantab., M.R.C.S., L.R.C.P., second son of the late George Adam Bird of Glenthorn, Worcester, to Nellie, elder daughter of G. G. Burrington, of Westfield House, Bridgwater.

CROOKS—REID.—On Sept. 8th, at Weybridge parish church, James Crooks, M.D., of Faversham, Kent, to Grace Marion, second daughter of the late George Reid, of 79, Queen-street, Cheapside.

DAVIES—WOODFIELD.—August 29th, at St. Stephen's parish church, Redditch, Hugh Davies, F.R.C.S. Eng., M.B. Lond., B.S., Vale House, Greenwich, to Elizabeth Victoria, fifth daughter of William Woodfield, Elmsdale, Redditch.

GREENE—EVANS.—On Sept. 6th, at the parish church, Cheshunt, William Adams Greene, M.R.C.S., son of the late Henry Greene, of Brookville, Co. Clare, to Mabel Alice Evans, elder daughter of Nicholl Evans, M.D., J.P., of Cheshunt, Herts.

SEDGWICK—SCOTT.—On Sept. 5th, at the United Presbyterian Church, St. Vincent-street, Glasgow, Hubert Redmayne Sedgwick, M.A., M.B., B.C., of Kingston-on-Thames, to Euphemia Scott, daughter of the late James Wallace of Rutherglen.

SPON—ROBINSON.—On Sept. 5th, at St. Peter's Church, Drayton, Abingdon, Berks, Harry James Spon, M.R.C.S., L.R.C.P., D.P.H. Cantab., son of Francis Nicolas Spon, of Brockley, to Constance Mary, third daughter of the Rev. F. E. Robinson, M.A., Vicar of the parish.

WALKER—SHAW.—On Sept. 4th, at Jesmond parish church, Newcastle-on-Tyne, Frederick Septimus Walker, M.D., B.S., youngest son of the late Thomas Walker, J.P., of Staincliffe, Seaton Carew, to Florence Edith, youngest daughter of Benjamin Shaw, Singleton House, Newcastle-on-Tyne.

## DEATHS.

DAGG.—On Sept. 4th, at Park-crescent, Worthing, Trevor Augustus Dagg, M.R.C.S., L.R.C.P., third son of the late John Ross Dagg of Hatfield, aged 38 years.

HURTLEY.—On Sept. 3rd, 1900, at 25, Brunswick-place, Leeds, William Maw Hurtley, M.R.C.S. Eng., L.S.A., aged 44 years, eldest son of the late Thomas Hurtley.

MOORE.—On Sept. 6th, suddenly, Thomas Moore, F.R.C.S., of Lee-terrace, Blackheath, aged 62 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

### THE SWANSEA HOSPITAL.

A SPECIAL meeting of the Board of Management of the Swansea Hospital was held on August 22nd, the chief business being the election of a chairman. Dr. H. A. Latimer, one of the consulting surgeons to the institution, was proposed and the nomination was duly seconded. Miss Dillwyn then moved as an amendment that another gentleman should be elected, on the ground that she was strongly opposed to the chairmanship being held by a medical man. She is further reported in the *Cambrian Daily Leader* as saying that "she thought they ought to consider the feeling of what she might call their outside constituents, who felt that there was already too much influence exercised in the management of the hospital by the medical profession." Mr. H. Goldberg seconded. The newspaper report is not very clear upon what those who were against a medical man being appointed said, but it is clear that some one made suggestions which were unfair, for towards the close of the meeting Mr. Ebenezer Davies is reported as saying that the remark that a medical man could not be expected to act fairly and honestly in the chair was an insult to an honourable profession. This same remark is also referred to by "A Friend of the Hospital," writing to the *Cambrian Daily Leader* of August 31st. Eventually Miss Dillwyn insisted on a division. The report does not say by how many votes her amendment was lost, but Dr. Latimer was eventually elected by 13 votes to 10. We are glad of this result, but we should like to understand how it is that ladies and gentlemen can allow themselves to make, or to assent to, charges of this description against the medical profession. Miss Dillwyn appears to think that a medical man cannot be trusted to adjudicate fairly in any matter where another medical man might be concerned. Objections might just as well be made to the appointment of a judge because some day he may have to try a member of the legal profession.

### A CONVALESCENT HOME FOR UPPER-CLASS CHILDREN.

*To the Editors of* THE LANCET.

SIRS,—I should be much obliged if you or any of your readers could tell me of a convalescent home for the children of gentlepeople. I have an idea that I at one time saw an advertisement of such an institution in THE LANCET. I am, Sirs, yours faithfully,

Leeds, Sept. 7th. ALFRED G. BARRS.

### SANITATION IN SCARBOROUGH.

*To the Editors of* THE LANCET.

SIRS,—Permit me to appeal to any medical man who may at the present time be visiting Scarborough and who may see this letter to observe the condition of the streets, particularly in regard to the sweepings that are allowed to lie and accumulate in all the thoroughfares. Although the town boasts so much of its sanitary arrangements the streets, even those where there is little traffic, smell strongly and refuse is allowed to lie for long intervals and helps to feed the boundaries of the pavements—in short, the gutters—with what ultimately becomes fine and filthy dust ready to be disturbed and blown about by any puff of wind. If some members of the medical profession would kindly note this discreditable and unhealthy condition that prevails in dry weather at the Queen of Northern Watering-places and make some reference to it in THE LANCET or direct to the officials in Scarborough they would perform a valuable public service.

I am, Sirs, yours faithfully,

Sept. 10th, 1900. Z.

### THE PLAGUE OR "TYPHUS BUBONICUS."

*To the Editors of* THE LANCET.

SIRS,—Searching for information on the above much dreaded disease I gather the following concise description from "Fagge's Medicine." The period of incubation is from two to seven days, followed by great malaise and depression. Intense pyrexia then sets in, which may be accompanied by violent delirium and rapidly assume a typhoid form. Death may occur at an early period, before there has been any symptoms characteristic of the malady. It may be preceded by hæmaturia, hæmoptysis, and black vomit. If life be prolonged to the second or third day there commonly appear one or more buboes in the groin, armpit, or neck. This formation is commonly attended by subsidence of the delirium and fever, profuse sweating, and the pulse falling to 90 or 100. The buboes break or are opened by a surgeon if they are tedious in healing. The prognosis is very fatal, seldom less than 60 per cent. of deaths. The treatment should consist of active stimulation and support. The buboes should be opened early. A second attack is comparatively rare. It is contagious and may be conveyed by articles of clothing—wool, silk, hair, books, &c. Warm and damp weather are favourable to it. It seems less apt to occur in persons over 50 years of age than in the young.

Were I called to undertake the treatment of cases of plague I should be inclined to administer the following, which I found useful in a very bad case of scarlet fever in Lazaretto in 1891. Solution of bichloride of mercury, two drachms; iodide of potassium, 10 grains; citrate of iron and ammonia, half a drachm; syrup, half an ounce; with water to one and a half ounces—one teaspoonful every two hours. Then when the temperature is down chlorate of potash and iron. The medication of these bubonic plague cases may be described as the use of the three B's—Brandy, Beef-tea, and Bichloride. The healing of the accompanying sluggish granulation might be expedited by the local application of equal parts of iodoform and oxide of zinc. The above is merely suggestive. The mode adopted by practitioners who have had experience in the east would be interesting and valuable.

I am, Sirs, yours faithfully,

Sept. 10th, 1900. INQUIRER.

## A SUBSTITUTE FOR BRANDY.

WE take the following note from the *League Journal*, a Glasgow temperance publication, of Sept. 8th. It forms part of an article headed "Our Women's Guild, Messages from Heart to Heart." The article, or perhaps we should say feature of the paper, is conducted by a Mrs. J. M. Oliver:—

> "Most members of 'Our Guild' will be glad to know of a very practical way of befriending the cause which lies so near, ay, and ofttimes presses so heavily, on our hearts. Some little time ago, when on a visit to a friend—a veteran temperance worker—she showed me the prescription for a 'Substitute for Brandy,' which was as follows:—
>
> SUBSTITUTE FOR BRANDY.
> In cases of fainting, severe pains, &c.
>
> EQUAL PARTS OF:—
> Strongest tincture of ginger,
> Sal Volatile, and
> Chloric ether.
>
> DOSE.—A *small* teaspoonful in about a tablespoonful of water.
>
> FOR CHILDREN.—Half the quantity.
>
> (*Any Chemist will make up a bottle of the mixture for 6d.*)
>
> This lady has had 2000 neat cards printed as above, which she distributes amongst those who are either in want of the prescription or who are able to reach others to influence them against resorting even in illness to alcoholic 'remedy' (?) which contains such incalculable possibilities for evil. I hope, nay, I *expect*, that every member of 'Our Guild' will forthwith cut out or copy this prescription, and then PASS IT ON.
>
> I took the prescription to a chemist of high standing and it is satisfactory to know that he gave it his unqualified approval. He said: 'It is a most excellent thing in *every way*.'"

We are sorry to dash Mrs. Oliver's hopes to the ground, but we should like to point out to her that brandy contains on an average about 50 per cent. of alcohol by volume. Now her prescription which is to influence others against resorting even in illness to alcoholic "remedy" is far more alcoholic than brandy; for tincture of ginger is practically pure alcohol with the essential portions of ginger dissolved in it; of nine pints and a half of sal volatile six pints are alcohol; and of 100 parts of chloric ether 95 are alcohol, so that her substitute contains quite 83 per cent. of alcohol by volume. Readers of "Mr. Ledbury" will remember Mr. Rawkin's favourite prescription, the Haustus Juniperi Comp., which the patient said was "blessed balm and their effects is peace." The composition was gin and tincture of cardamoms, but Mrs. Oliver's cordial would be even more efficacious.

## INSURANCE COMPANIES AND THEIR FEES.

*To the Editors of* THE LANCET.

SIRS,—A circular from an insurance company has just been issued to its medical examiners requesting them to subscribe to an agreement to a reduced scale of fees for examinations. Before this document be signed would it not be well for the examiners to confer on the matter?

I am, Sirs, yours faithfully,

Sept. 11th, 1900. ECLECTIC.

*** Yes.—ED. L.

## THE CLUB QUESTION IN LANCASTER.

THE medical men in Lancaster are at present engaged in an interesting contest with the members of various working men's clubs. In round numbers these have a membership of some 4000. At present the men pay 3*s*. 6*d*. per head per annum for medical attendance. This includes all medicines and surgical appliances. The work is divided amongst 12 practitioners. In June the latter, through the Lancaster Medical Book Club (a very old society, which has latterly been enlarged so as to include all members of the profession practising in the town), gave notice that after the end of the present year nothing less than 5*s*. per head per annum would be accepted for attendance on club patients. After some negotiations the clubs have offered 4*s*. "to finally settle the question so far as the present staffs are concerned." This offer was refused at a meeting of the Book Club held on Sept. 8th. The move is now with the workmen.

## "TIMES AND MANNERS."

IN the current number of the *Cornhill Magazine* Mr. A. D. Godley discourses in his usual pleasant manner upon the difference in manners between those of classic times and our own. Mr. Godley is at all events for the purpose of his verse *laudator temporis acti*. He points out how much happier from a medical point of view were the men of classic times as follows:—

> "Then should a too luxurious fare
> Sow sickness seeds (which was but seldom),
> A vow or inexpensive prayer
> At once effectively expelled 'em;
> Not yet the boons that science brings,
> No microbes yet could vex and plague you,
> At worst you died of common things—
> A fever or perhaps an ague.
>
> "How changed the modern's lot from yours!
> Daily do specialists affright his
> Inquiring mind with scores and scores
> Of things that end in death and-*itis*;
> Of ailments new with newer terms
> At Science feet we're always learning,
> With wholly unsuspected germs
> Awaiting us at every turning.
>
> "'Twas hard undoubtedly to be
> Beheaded by a tyrant's minions
> Because you chanced to disagree
> With his tyrannical opinions;
> Yet when I view the countless swarm
> Of troubles new that maim and kill us,
> Proscription seems a lesser harm
> Than medicine with a fresh bacillus!"

**COMMUNICATIONS not noticed in our present issue will receive attention in our next.**

## METEOROLOGICAL READINGS.

***(Taken daily at 8.30 a.m. by Steward's Instruments.)***

**THE LANCET Office, Sept. 13th, 1900.**

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 7 | 30·05 | W. | ... | 111 | 77 | 53 | 54 | 58 | Hazy |
| " 8 | 29·93 | W. | ... | 103 | 71 | 57 | 58 | 61 | Cloudy |
| " 9 | 30·01 | W. | ... | 107 | 75 | 51 | 60 | 64 | Cloudy |
| " 10 | 30·10 | N.W. | ... | 114 | 75 | 55 | 56 | 60 | Fine |
| " 11 | 30·36 | N. | ... | 112 | 70 | 52 | 55 | 59 | Fine |
| " 12 | 30·50 | N. | ... | 102 | 72 | 52 | 55 | 57 | Hazy |
| " 13 | 30·47 | N. | ... | 100 | 70 | 53 | 55 | 58 | Hazy |

**During the week marked copies of the following newspapers have been received:** *Linlithgowshire Gazette, Newcastle Daily Journal, Le Matin (Paris), Ross Gazette, Buxton Chronicle, Newcastle Chronicle, Manchester Guardian, Western Mercury, Glasgow Herald, Daily Express (London), Pioneer Mail, Times of India, Citizen, Scotsman, Architect, Liverpool Daily Post, Builder, Birmingham Gazette, Bristol Mercury, Yorkshire Post, Dundee Advertiser, Leeds Mercury, Blackburn Telegraph, The League Journal (Glasgow), Sanitary Record, Midland Counties Express, Rhyl Journal, Vegetarian, Hampstead Express, South London Mail, Bournemouth Directory, Southampton Observer, Brighton Herald, Perth Courier, Aberdeen Free Press, City Press, Falmouth Packet, The Guardian, Rutherglen Express, Midlothian Journal, Flint Observer, Stamford Guardian, West Sussex Gazette, Clifton Chronicle, Glamorgan Free Press, Herts Advertiser, North Devon Herald, Mining Journal, Reading Mercury, Hertfordshire Mercury, Manx Sun, Public Health Engineer, Local Government Journal, Surrey Advertiser, Harrogate Advertiser, Hereford Times, Beverley Recorder, Bath Argus, Lancaster Standard, &c., &c.*

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (18th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**WEDNESDAY (19th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

**THURSDAY (20th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**FRIDAY (21st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**SATURDAY (22nd).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

**At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.**

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (17th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Whitfield: Consultation. (Skin.)

**TUESDAY (18th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Taylor: Consultation. (Medical.) 6 P.M. Dr. J. E. Squire: Class. Applied Anatomy. Demonstration I.

**WEDNESDAY (19th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. G. F. Still: Consultation. (Pædiatrics.)

**THURSDAY (20th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

**FRIDAY (21st).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. N. Maclehose: Consultation. (Eye.)

# EDITORIAL NOTICES.

**It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.**

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

# MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

## Communications, Letters, &c., have been received from—

A.—Dr. W. T. Allen, Liverpool; A. M. C. D.; Mr. H. Adeane, Lond.; Apollinaris Co., Lond.

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# An Address

ON

# THE TREATMENT OF SOME COMMON DISEASES OF THE SKIN.

*Delivered before the South-Eastern Branch of the British Medical Association at Croydon on May 10th, 1900.*

BY PHINEAS S. ABRAHAM, M.D. DUB., B.SC. LOND., F.R.C.S. IREL.,

SURGEON TO THE HOSPITAL FOR DISEASES OF THE SKIN, BLACKFRIARS, AND DERMATOLOGIST TO THE WEST LONDON HOSPITAL.

GENTLEMEN,—When your chairman, Dr. Redfern, did me the honour to invite me to address you on this occasion it occurred to me that it might perhaps be more acceptable if I put together some rough notes of certain methods of treatment which I have found useful in some of the commoner diseases of the skin, rather than that I should inflict upon you an elaborate essay upon some special subject. I must first of all apologise for the very fragmentary nature of my communication, and secondly I must disclaim any idea of particular orginality in the measures that I am going to recommend. Many of the remedies that I shall mention are as old as the hills and I dare say are well known to you, and others are merely modifications of methods of treatment recommended by others. I was once present when an eminent specialist deprecated the admission of general practitioners into a certain special society on the ground that he did not see why specialists should give themselves away or give away their "tips," unless for a special fee. Fortunately, some of us still believe that we belong to a scientific profession and are sufficiently imbued with the Hippocratic spirit to be above such contemptible small-mindedness. At any rate, most of us specialists are always ready to impart all we know—little though it may be—to any brother practitioner who may consider it worth his while to listen to us either at the hospital or elsewhere.

I propose on this occasion to speak particularly upon the treatment of the following common diseases—eczema, psoriasis, impetigo, acne, and ringworm.

## ECZEMA.

That the numerous cases of cutaneous eruptions which are included under this name have more than one pathological cause most dermatologists are agreed. There can be no doubt, however, that the ubiquitous microbe is at the bottom of many of them, and it is to my mind more than probable that there is more than one microbe the growth and development of which in the skin will produce the inflammation, irritation, exudation, and exfoliation which are more or less characteristic of "eczema."

As with other microbic infections, moreover, another factor is necessary for the production of the disease: the micro-organisms will not flourish if the soil or cultivating medium—i.e., the tissues and juices thereof—be not suitable. Some of the modern dermatologists, especially on the continent, are, I fancy, rather inclined to ignore this latter factor and to depend too much upon purely external applications in the treatment of eczema. On the other hand, there can be no doubt that the older practitioners relied too much on internal medication in this and in many other diseases of the skin. I feel sure that in most cases the best results are obtained by simultaneous external and internal remedies Our aim should be to get the whole system—all the organs of the body—in a thoroughly healthy condition as well as to destroy the microbes or prevent their growth, and we must see to the digestion, to constipation, to the kidneys, to the circulation, and even to the nervous system—to everything, in fact, which may directly or indirectly influence the condition of the tissues and fluids of the skin.

I frequently give with benefit an iron and magnesia mixture—e.g., the mistura ferri aperiens of most hospital pharmacopœias—with a little nux vomica as a digestive tonic, or sometimes an alkaline bitter mixture with an aperient if necessary, and if able I regulate the diet as far as possible. As a rule I recommend simple, plainly-cooked food, the avoidance of much sugar, tea, strong coffee, pastry, cheese, beer, acid and sweet wines, or much alcohol in any form. Externally, the applications will vary with the form of the eczema, its acuteness, extent, position, &c. In acute inflamed cases, antisepsis, protection, and reduction of inflammation and exudation are to be aimed at, and either powders, pastes, liniments, ointments, or zinc gelatins may be employed. Many cases do well with what we at Blackfriars call the "unguentum hydrargyri cum plumbo," which contains 10 grains of acetate of lead, 10 grains of calomel, 20 grains of oxide of zinc, 20 grains of ointment of nitrate of mercury, and one ounce of vaseline. But occasionally an eczematous skin will not stand an ordinary ointment, and a modification of Lassar's paste may then be tried—e.g., three drachms each of zinc oxide and starch, 10 grains of salicylic acid, and one ounce of vaseline, or a calamine liniment containing one drachm of carbonate of zinc and half an ounce each of olive oil and limewater. When the weeping and inflammation are excessive a powder thickly dusted on is sometimes effective—e.g., half an ounce of starch, two drachms of oxide of zinc, and one drachm of powdered borax or boric acid. Many cases of acute eczema which have resisted other applications have yielded in my hands to the zinc-gelatin treatment (of Pick and Unna)—viz., half an ounce of gelatin, three drachms of oxide of zinc, one ounce of water, and half an ounce of glycerine, and I generally add 10 minims of ichthyol. The mass melted in a glue-pot and painted over forms an elastic, protective, and soothing covering. In all cases, immediately before applying any of the above, I order the parts affected to be well bathed with a very dilute antiseptic lotion. In preference I use a lotion containing half a drachm of creolin to a pint of soft boiled water, because it is effective as an antipruritic as well as being an antiseptic and—an element of importance in hospital practice—because it is inexpensive. Other weak antiseptic lotions are no doubt equally as good.

In dry eczemas and where there is but little inflammation, tarry ointments are usually very efficacious. Our favourite one at Blackfriars is the so-called "unguentum petrolei compositum." This contains half a drachm of alcoholic solution of coal tar, 10 grains of ammoniated mercury, and an ounce of vaseline. Creolin is sometimes with benefit substituted for the alcoholic solution of coal tar and I dare say that the liquor picis carbonis would also do.

As with the acute eczemas I always advise bathing the parts affected with a weak tarry lotion before applying the ointment night and morning, or even, if the eruption be extensive, a tepid bath containing from half a drachm to one drachm of creolin or other tar product to about six gallons of water. Soap is generally detrimental in eczemas, especially in the acute form, and I frequently recommend a muslin bag filled with bran to be used as a substitute. A warm sitz bath night and morning with rather more creolin in it—say one drachm to two gallons—I have found very useful in obstinate cases of eczema of the perineum and anus. In these cases, too, I have sometimes found the addition to the tar ointment of 10 grains of sulphur or 25 grains of ichthyol to be of good effect. This is applied immediately after the bath.

In eczemas of the limbs I keep the ointment bandaged on, and I am sure that careful bandaging of the legs from the foot to the knee is an important adjunct to the treatment, especially when varicose veins are also present, as they often are. There is one matter that I should like to point out in the treatment of eczema. It is a mistake to use strong ointments—a fact that, I believe, was first recognised by the elder Startin, the founder of Blackfriars Hospital for Diseases of the Skin, and which has not yet been grasped by the editors of the British Pharmacopœia, for the officinal ointments therein set down are mostly too strong in skin cases.

## PSORIASIS.

Although I regard the constitutional element in psoriasis of even more etiological importance than in eczema, seeing as we do among its other features its tendency to occur in several members of the same family, and in gouty and rheumatic subjects, I have come to the conclusion that external treatment is, comparatively even, of much greater use in this disease. As with eczema we ought to consider the state of the internal organs as well as any "diathesis" which may be indicated. I believe that the older practitioners were often right in giving alkalies and diuretics in these cases, but I have long become convinced that there is

no particular drug administered internally which can fairly be regarded as a specific for psoriasis. As for arsenic, I consider that its vaunted specific efficacy in the treatment of this disease is little short of a medical myth. I could produce notes of numerous cases in which its persistent exhibition for years has produced no effect either in removing the efflorescence, or in preventing its recurrence after its removal by external treatment. If, as perhaps happens occasionally, the patches disappear during a prolonged course of the drug, it has only been, according to my view, either after the patient has been made very ill, the nutrition of all the tissues having suffered—the skin with its patches of psoriasis along with the rest—or from the effect of concomitant measures. We frequently, indeed, see the efflorescence of psoriasis temporarily vanish during some other intermediate severe affection—gastritis, fevers, influenza—and I have even seen the spots go when a patient has meanwhile contracted syphilis.

Thyroid gland is another much vaunted drug which I have also discarded in the treatment of psoriasis. Some years ago I tried it extensively in the disease, and came to the conclusion that although in a few cases it undoubtedly caused the exfoliation and disappearance of the spots, in the majority it had no effect, and, indeed, frequently made the patients very ill without doing much good to the psoriasis. Even in those cases in which the results were good the rapidity of cure was by no means greater than with the ordinary external methods of treatment, nor was there any less tendency to recurrence. The external application of chrysarobin undoubtedly removes the efflorescence quicker than anything else. As an ointment, however, it has its drawbacks—ruining the patient's clothes, and producing severe and disagreeable erythema in tender parts and inflammation of the eyes if accidentally carried thereto. I use it now always in the form of a solution, to be rubbed in only on the patches which are situated on the extensor surfaces where the skin is less tender—e.g., 40 grains of chrysarobin, 10 grains of salicylic acid, and one ounce of solution of gutta-percha (in chloroform), this forms a film which, when dry, does not stain the linen. As it peels off it is to be replaced every day or two—generally until an erythematous blush appears around. A more or less saturated solution of chrysarobin in benzine, rubbed into the patch, and then when dry painted over with collodion or the liquor gutta-percha is also very effective. For other parts of the body I usually order a strong tar or creolin ointment—e.g., one drachm of creolin, 10 grains of ammoniated mercury, and an ounce of vaseline, often also with the addition of from 10 to 20 grains of salicylic acid. If possible I make the patients soak themselves for a quarter of an hour or 20 minutes every night in a warm bath containing creolin and then thoroughly inunct the patches with the ointment.

For psoriasis of the scalp, the most efficacious treatment in my experience is an ointment containing a drachm of ammoniated mercury and three and a half drachms each of soft soap and vaseline to be well rubbed in every night. By these measures thoroughly carried out the most inveterate cases can, I believe, be "cured" in a few weeks; and I am not aware that the affection then shows more tendency to recur than after any other method of treatment. Indeed, I know several old patients who were so treated who have had no return of their psoriasis for many years.

### IMPETIGO.

Everyone who visits the out-patient department of the West London Hospital is surprised at the enormous number of cases of impetigo that we see there and I have no good explanation of the fact that the disease is so prevalent in Hammersmith and the neighbourhood. In most skin clinics the cases of eczema are by far the most numerous; at Hammersmith the impetigo cases certainly predominate. Fortunately it is a disease easily cured and by the good old-fashioned remedy—ammoniated mercury ointment.

I do not approve of the crusts being removed by poulticing. Warm oil or a weak, warm antiseptic lotion ought to be sufficient. I generally order a weak creolin lotion for this purpose, the ointment to be applied immediately afterwards and re-applied night and morning. If pediculi are present, as is usually the case in the heads of our London School Board children, I recommend a thorough nightly washing with soft soap and hot water immediately before applying the ointment. If this treatment be kept up for some weeks the young pediculi are dealt with as they come forth from the nits and the pediculosis is soon eradicated.

### ACNE.

This is another common affection which in my experience can be cured with certainty and in a comparatively short time by a judicious combination of internal and external remedies. I believe that unless the skin is in a more or less unhealthy state the pus and comedo-producing organisms do not perform their nefarious function. The majority of acne patients will give some indication of dyspeptic trouble, constipation, &c., and the rosaceous cases particularly of flushings of the face, &c., and not infrequently they give a history of their faces being worse at the menstrual period. Most of them I find to be benefited by the tonic and aperient iron and magnesia mixture between meals, others by an alkaline bismuth mixture before food. In all cases I recommend the application to the spots every night of the compound sulphur ointment of Blackfriars which contains 30 grains of sulphur, 10 grains of ammoniated mercury, 10 grains of sulphide of mercury, and an ounce of vaseline, slightly varying the quantities in particular cases and adding oxide of zinc if there be much inflammation. Occasionally the old sulphur and lime-water lotion does well, but I find as a rule that the above ointment does better. Before its application I make the patients bathe the face with hot water and a 10 per cent. ichthyol soap well lathered on. This is to be done again in the morning and very often I tell them to keep the lather on for as long as possible. But a still more important part of the treatment, in my opinion, is the cautious application to each pimple of the tiniest driplet of pure carbolic acid, just liquefied with a little water, as recommended many years ago by Dr. Walter Smith of Dublin. As a rule, one application aborts and cures the pustule. The rapid efficacy of this application is particularly apparent in those very bad cases of recent alcoholic acne. In indurated cases where subcutaneous abscesses have formed and where the pustules are large and deep I puncture them, and with a small blunt-pointed hypodermic syringe needle, with the orifice apical. I thoroughly wash out the cavity with some antiseptic lotion—1 in 1000 sublimate, 1 in 20 carbolic, izal, or chinosol. I do not think it matters much which—in fact, I treat it as one would treat antiseptically an ordinary surgical abscess. I think it always well to remove as many comedones as possible in acne cases, and for this I use the comedo extractor which has been made for me by several London instrument makers.

### RINGWORM.

As we all know, many cases of ringworm of the scalp can be easily cured by the application of iodine tincture and liniment, Costa's paste, turpentine, or even common ink. When, however, the fungus gets deep down into the hair follicles it is not so easy to get at, and the case even in the most experienced hands may last for years. During the past 15 years I think I have experimented with most of the methods, and the number is legion, that have been proposed for the treatment of ringworm. I am now advising the following measures in the majority of cases. The scalp to be shaved every fortnight and calico skull caps to be worn day and night, an ointment consisting of one drachm each of pure carbolic acid and salicylic acid to the ounce of vaseline to be well rubbed in with a stiff brush night and morning over the patches, and the rest of the scalp slightly smeared over with the same ointment. Twice a week I have the scalp lathered with hot water and a soapy mixture containing two ounces of soft soap, two drachms of glycerine of carbolic acid, and two drachms of glycerine of boric acid, to be followed immediately by an application of the ointment. Once or twice a week, if possible, I use immediately after the washing my special pump which forces in by the atmospheric pressure any parasiticide liquid which you may wish to use. The area of scalp beneath the bell simply becomes impregnated with the fluid, making the soil very unpleasant at least for the undesirable trichophyton. I generally employ pure creasote and sometimes equal parts of ozonic ether and guaiacol which penetrates readily. Before using this machine it is as well to remove as much fat as possible from the follicles by swabbing the patch with ether. Many cases that have resisted other methods of treatment for years have in my hands yielded to this.

### CONCLUSION.

I think, gentlemen, that I have now wearied you enough, but before concluding I should like to express my opinion

that we are in this country in a great degree handicapped in the treatment of diseases of the skin from the fact that we cannot always have the various necessary measures thoroughly carried out. It may be all very well for the hospital patients and for very wealthy people who have the time to devote and who can afford to go to the West End nursing homes. In a large number of cases, however, the initial prescription and the occasional visit to the skilled practitioner are deemed sufficient; the circumstances of the patient's home rarely lend themselves to thorough inunction, suitable baths, &c., and, indeed, are seldom adequate, and the result often is that the case "hangs fire." The continental patient suffering from a disease of the skin is, on the other hand, better off. He goes to an experienced special practitioner who admits him into his private hospital at a cost varying according to his means, is seen and dressed every day by the practitioner himself or by his assistants, with frequent modifications of treatment as indicated, and I am obliged to admit is often cured quicker and more satisfactorily than he would be in this country. I have myself more than once—an admission which I regret to have to make—felt constrained to send patients who were above the hospital class to Aix la Chapelle, to Hamburg, and to other places abroad, because I conscientiously knew that their cases would be more thoroughly dealt with and at less expense than in a London nursing home. I have only now to thank you for listening to these very desultory remarks. I hope, however, that some of the measures which I have mentioned may prove of use to some of you.

# THE ETIOLOGY OF RHEUMATIC FEVER.

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ASSISTANT BACTERIOLOGIST TO ST. MARY'S HOSPITAL.

THE etiology of rheumatic fever has proved to be a problem of such complexity that it is necessary to state at the very outset of this paper the scope and object of the research. The various results that had been already obtained by investigators were in themselves our first difficulty, for they necessitated the employment of widely different methods to enable us to cover the ground already traversed. Our first intention was to obtain, if possible, some definite facts from which as a basis we might make further advances, and the discovery and isolation of micro-organisms in the form of diplococci in eight successive cases of rheumatic fever afforded us this opportunity. When we had obtained these diplococci in pure culture Mr. H. G. Plimmer undertook a series of inoculations into animals and the results that followed provided us with further data. Finally, microscopic investigations of the human and animal tissues have been another source from which we have obtained facts which we believe to be of considerable importance. The methods that have been used and the conclusions that have been obtained from these three sources are detailed in this paper, together with a brief historical survey of the work of others upon this subject.

There are many points of interest that are suggested by these results; but the most important fact deducible from our researches, as detailed below, is *that this diplococcus which we have isolated is a cause of rheumatic fever*. It is to this conclusion that our results seem irresistibly to lead. We are not, however, in the face of the results of others, in a position to state that these diplococci are invariably present in rheumatic fever, nor are we able to claim that they are the only cause of this disease.

## AN OUTLINE OF THE HISTORY OF THE BACTERIOLOGY OF RHEUMATIC FEVER.

Before giving an outline of our results a historical survey of the subject is appended sufficient to indicate the various views that are, and have been, held, and to do justice to others who have made investigations upon this question. This outline cannot claim to be exhaustive, but it does, we hope, give due credit to those who have already expended much labour in attempting to discover the true cause of rheumatic fever. In 1892 Fraenkel [1] called attention to a paper by P. Guttmann upon the etiology of rheumatism and its complications. Guttmann described a case of very acute rheumatism with exudative pericarditis complicated by abscesses in the kidneys and muscles from which the staphylococcus pyogenes flavus was isolated. This micro-organism was obtained from the pericardial exudation and the abscesses but not from the joints. Guttmann expressly stated that this was not a case of true rheumatism, nor did he consider this organism, if it were the cause of the rheumatism in this case, to be the sole cause of rheumatic fever. Leyden also concurred with this opinion. In the same year Sahli [2] discovered the staphylococcus pyogenes citreus in the synovial membrane of the joints in a case of rheumatic fever and also in the pericardial exudation. He considered rheumatic fever to be due to a staphylococcus infection but left it an open question as to whether or not the condition was due to an attenuation of the organism. Netter [3] also isolated a streptococcus from a case clinically resembling rheumatic fever but following acute suppurative otitis media. Lanz [4] in 1893 published a paper upon experimental results connected with suppurative polyarthritis. From the pus of an abscess of the brain operated on by Kocher he isolated a bacillus. This on intravenous injection into rabbits caused death in 23 days. Suppurative polyarthritis resulted and the bacillus was again isolated from the joints. To this organism he gave the name of bacillus pyogenes fœtidus liquefaciens. In 1894 Maragliano [5] obtained diplococci and staphylococci from a case which commenced clinically as rheumatic fever and ended as a septicæmia. This writer also insisted upon the relationship between rheumatic fever and suppurative affections. At this time Chvostek [6] and Singer [7] published papers upon the micro-organisms found in the urine of patients suffering from rheumatic fever. Singer found as the result of the examination of the urine in 17 cases that the staphylococcus pyogenes aureus was frequently present, and when present was to be found in considerable numbers, but became less as the disease declined. He associated this occurrence with the rheumatic process. Chvostek, though recognising the importance of Singer's investigation, doubted the validity of his conclusions. Dana [8] in 1894 isolated a diplococcus from a case of chorea following rheumatism. The organism was found in the meninges of the brain and spinal cord. Charrin [9] found streptococci in cases of rheumatic fever. Sacaze [10] made the interesting suggestion that some external wound, often insignificant, might be the site of infection in rheumatic fever. In 1896 Lubarsch, [11] in a paper upon the streptococcus group and the diseases caused by them, alludes to an exhaustive paper by Buss of Bremen upon the relation of angina faucium to rheumatic fever. Buss [12] in this paper came to the conclusion that the throat and intestines are in many instances the sites of the entrance of the rheumatic infection.

The clinical importance of the angina faucium that occurs in rheumatism had long been recognised. It was mentioned by Trousseau [13] in his "Clinical Medicine" and Dr. Kingston Fowler [14] in 1880 published an account of 20 cases of acute rheumatism ushered in by tonsillitis; Dr. Cheadle [15] further insisted upon this clinical fact in 1888 in the Harveian Lectures upon the rheumatic state in childhood.

Achalme [16] introduced a new field for investigation by a series of papers upon the bacteriology of rheumatic fever dating from 1891. He discovered a bacillus in the blood of patients who succumbed to rheumatic fever and by his subsequent researches confirmed this observation. His results

[1] Deutsche Medicinische Wochenshrift, No. 46, p. 809.
[2] Etiology of Acute Rheumatism, Correspondenzblatt für Schweizer Aerzte, 1892, vol. xxii.
[3] La Semaine Médicale, 1892, No. 7, p. 48.
[4] Experimental Bacillary Suppurative Polyarthritis, Centralblatt für Bacteriologie, 1895, Band xiv., p. 269.
[5] Infections from the Pyogenic Micro-organisms, Riforma Médica, 1894, Nos. 67 to 68.
[6] Verhandlungen des Congresses für Innere Medicin, 1897, p. 99.
[7] Wiener Klinische Wochenschrift, 1894, No. 26, p. 449.
[8] The Microbic Origin of Chorea, American Journal of Medical Science, 1894, p. 31.
[9] La Semaine Médicale, 1894, p. 376
[10] The Rôle of the Staphylococcus in Acute Articular Rheumatism, Archives Générales de Médecine, 1894, p. 513.
[11] Pathology, 1896.
[12] Deutsches Archiv für Klinische Medicin, 1894, vol. liv., p. 1: The Bacteriology of Acute Rheumatism.
[13] Clinical Medicine, vol. ii., p. 466
[14] THE LANCET, Dec. 11th, 1880, p. 933.
[15] Harveian Lectures on the Rheumatism of Childhood, 1888.
[16] Comptes Rendus de la Société de Biologie, 1891.

are of such importance that some space must be devoted to an account of them. The bacillus resembled that of anthrax both in size and in the blunt ends, but varied considerably in size though not in thickness in different media. It occurred in the blood in scanty numbers and was grown anaerobically, not aerobically. A mixture of milk and beef-tea was the medium used, but it grew well upon alkaline bouillon made from horses' flesh. The anaerobic tubes were not opened for from eight to ten days. Solid media were not well adapted for studying the properties of this bacillus. When growing in alkaline bouillon gas bubbles and a turbid deposit appeared within 12 hours. The bacillus stained well with all the aniline dyes but best with faintly alkaline methylene blue. In 1897 Achalme[17] published a detailed account of his researches upon this bacillus with clinical histories of nine cases in which it had been found. The results of injections into animals were also given. Sanious exudation at the sites of inoculation was a prominent feature and in the most severe cases death occurred from septicæmia. A true picture of rheumatic fever, as it occurs in man, did not appear to result in animals thus infected. The results that Achalme obtained have naturally aroused considerable interest, and it is remarkable that an organism of such a size and one that stains so well should have been overlooked by those who have investigated the tissues in rheumatic fever.

Thiroloix,[18] following Achalme's investigation of this bacillus, fully confirmed his results in a series of papers. In addition, in five cases of rheumatism he obtained this bacillus and inoculations into rabbits gave the entire picture of rheumatic fever. Again, he obtained the organism from the blood and pleural effusion in one case of rheumatic fever, and this produced in guinea-pigs sanious exudations and in rabbits a heart but not a joint inflammation. In two later cases he obtained the latter also. Triboulet[19] in a case of rheumatic fever found a bacillus resembling that described by Achalme. But later Triboulet and Coyon[20] found a diplococcus in five cases. In two of these the diplococci were associated with Achalme's bacillus, and they argue that severe and complicated cases are due to Achalme's bacillus together with the associated diplococci, whereas the simple cases of rheumatism are due to the diplococci alone. Riva[21] in 1897 isolated a specific micro-organism from eight cases of rheumatic fever. The organism varied much in shape in different media and occurred in both coccal and bacillary forms. He made use of a complicated medium slightly acid in reaction, an essential constituent of which was the synovia from the joints of horses. In 1898 Apert and Triboulet[22] obtained some remarkable results by the inoculation of a rabbit with a diplococcus isolated from the blood of a patient suffering from rheumatic fever. 20 days afterwards they found thickening of the mitral valve with hypertrophy and dilatation of the chambers of the heart and excess of clear fluid in the pericardium. There was also pleurisy but no peritonitis. None of the joints were affected. This diplococcus was identical in character with that found in 11 other cases of rheumatic fever. In spite of the absence of any joint lesions Triboulet considered this organism to be specific. Injected under the skin Apert found the diplococcus produced a local induration. Bettencourt[23] in 1898 supported the researches of Achalme and Thiroloix. Gustav Singer[24] in a monograph gave the results of an extensive investigation of many cases of rheumatic fever and was led to the conclusion that acute rheumatism is not a specific disease but owes its origin to streptococcal and staphylococcal infection. In 1899 Kronenberg,[25] in a paper upon angina faucium in acute rheumatic fever, expressed doubts that rheumatism is a disease *sui generis*, but he thought rather that it was a peculiar reaction of the joints and other tissues to a series of bacterial influences—as, for example, the gonococcal, the streptococcal, and the allied infections. In 1899 Westphal, Wassermann, and Malkoff published a paper, "Ueber den Infectiösen Charakter und den Zusammenhang von Acutem Gelenkrheumatismus und Chorea"[26] Westphal narrated the history of the case from which the material was obtained. It was a severe case of chorea that followed acute rheumatism, occurring in January, 1899. Violent delirium with hyperpyrexia and collapse resulted in death on Feb. 24th. The necropsy a few hours later showed minute vegetations upon the mitral valve and parenchymatous nephritis; there was no suppuration. Cultures were made from the heart's blood, pericardial fluid, mitral valve, spleen, and brain. Wassermann, after alluding to the researches of Löffler, Michaelis, Eberth, Litten, and von Leyden, described the bacteriological results. A diplococcus resembling morphologically that found by Von Leyden in rheumatic valvulitis was isolated and in 80 rabbits produced fever and multiple arthritis. This organism appeared as a diplococcus in the tissues but grew in culture as a streptococcus. The number of micro-organisms in the tissues of the patient was very small. It required a higher degree of alkalinity than that of the ordinary media, upon which it refused to grow. The incubation period was from three to ten days. All the tissues of the joint were inflamed and in the fluid of those which had been affected longest there was a considerable number of leucocytes. In addition there was exudation in the tendon sheaths and bursæ. The micro-organism was found in the arthritic exudation and cultures from the animals reproduced the disease in other animals. Litten[27] at the same date isolated from a malignant form of rheumatic endocarditis (non-suppurative) a very minute streptococcus which was fatal to mice and guinea-pigs but rapidly lost virulence upon culture. In a footnote to his paper he is of opinion that Westphal and Wassermann have probably found the true excitant of acute rheumatism but suggests that there may possibly be more than one. It appears to us that this diplococcus must resemble, if not be identical with, that investigated by Triboulet in 1897.

This brief survey is sufficient to show how complicated and uncertain the present position of the bacteriology of rheumatic fever still remains. In the following short analysis of the various hypotheses we hope to make clear that view of the subject which seemed to us the most probable and to indicate the direction in which our researches tended. There may be some who still decline to regard rheumatic fever as a microbic disease, but we have started upon the assumption that it is an infection, being led to this conclusion by the results of clinical and pathological experience and teaching. The broad clinical view of rheumatism which has been taken by such authorities as Dr. W. B. Cheadle, Dr. Thomas Barlow, Dr. D. B. Lees, and Dr. A. Garrod in this country appears to us to support this hypothesis very strongly.

*View No. 1.*—Allowing that the cause of rheumatic fever is microbic, one view that has met with considerable support maintains that there is no specific micro-organism, but that rheumatism is but a form of septicæmia which owes its origin to staphylococcal and streptococcal infection. The close analogy between the rheumatic processes and those of pyæmia and the frequent discovery of staphylococci and streptococci in cases of rheumatic fever have naturally led to this view. It is undoubtedly a very important one and involves bacteriological and clinical problems of the greatest difficulty. It raises the question of what is really the definition of the specificity of an organism and deals with what is still an unknown quantity—viz., the extent of variability that is possible in a micro-organism and its results under varying conditions of virulence and resistance. We have fallen back upon the teaching of clinical medicine and pathology as our guide in this matter Rheumatic fever as we meet with it in England is a common disease with, on the whole, very definite characteristics. However virulent the disease it may be practically asserted from the clinical standpoint that suppuration does not occur. Many cases die in the course of a year with acute cardiac inflammation, yet the heart and other viscera are not in a condition of suppuration. We were inclined to expect that an organism the cause of rheumatic fever if isolated and inoculated into suitable animals would produce in them a condition resembling the

[17] Sur le Rhumatisme Articulaire Aigu, Annales de l'Institut Pasteur, 1897.

[18] The Results of Inoculation of a Bacillus obtained from a Patient with Rheumatic Fever, La Semaine Médicale, 1893, p. 376; The Microbe of Rheumatic Fever, ibid., p. 420; The Bacteriological Examination of the Blood in Two Patients with Rheumatic Fever, Comptes Rendus de la Société de Biologie, 1896, p. 268; A Bacteriological Study of One Case of Rheumatic Fever, ibid., No. 30, p. 882; The Bacteriology of Rheumatic Fever, ibid., No. 34, p. 945.

[19] Comptes Rendus de la Société de Biologie, 1898, tome v., p. 214.

[20] Bulletin et Mémoire de la Société Médicale des Hôpitaux, 1898, p. 93.

[21] Centralblatt für Innere Medicin, 1897, Band xviii., p. 825.

[22] Comptes Rendus de la Société de Biologie, 1898, Band v., p. 128.

[23] Archives de Médecine, tome ii., No. 298.

[24] Aetiologie und Klinik des Acuten Gelenkrheumatismus.

[25] Angina in Acute Rheumatism, Münchener Medicinische Wochenschrift, 1899, p. 28.

[26] Berliner Klinische Wochenschrift, 1899, No. 29, p. 638.

[27] Ueber die Maligne (Nichtseptische) Form der Endocarditis Rheumatica, Berliner Klinische Wochenschrift, 1899, No. 29, p. 644.

rheumatic fever of man in the absence of multiple foci of suppuration. That this limit may be overstepped both in man and animals under exceptional, and perhaps as yet unknown, circumstances seemed to us very probable, but the general and average result that we expected was a condition in which the absence of suppuration would be a prominent feature.

*View No. 2.*—Another view maintains that the cause of rheumatism is a specific diplococcus. It is to this view that we inclined, though we would repeat once more that the definition of what is meant exactly by "specific" involves many difficult problems concerned with the virulence of the infection and nature of resistance.

*View No. 3.*—A third view maintains that the cause is a specific bacillus. This view is a decidedly simpler one, if it were proved to be true. If the bacillus, as, for example, that described by Achalme, be found to be invariably present in rheumatic fever it is easily distinguishable from the staphylococci and streptococci that are found so frequently associated in rheumatism, and its morphological characters alone would be of the greatest assistance in establishing the truth of its claim.

*View No. 4.*—A fourth view raises the question of a mixed infection of bacilli and cocci, an analogy to which is readily supplied by diphtheria. To us this view appeared one of great difficulty and withal unsatisfactory. There can be no reasonable doubt in the face of the numerous investigations that have been made that cocci of some form or other are frequently present in rheumatic fever and hence the origin of such a view as the one under consideration. Nor can there be reasonable doubt that cocci are capable of producing polyarthritis, valvulitis, pericarditis, pyrexia, sweating, infarction, and other manifestations closely resembling those of rheumatic fever. If, then, both the bacilli and cocci are needful to produce rheumatic fever the association must be a mysterious one. If the cocci are the cause of the symptoms it is possible that they are restrained from causing suppuration by the presence of the bacilli. If the bacilli are the cause of the symptoms it is possible that they produce them only when associated with these cocci, though this is difficult to realise when it is remembered that these cocci may themselves produce almost similar lesions.

*View No. 5.*—This last view holds that rheumatic fever is not a disease *sui generis* but a particular reaction of the tissues to varied infections. We thought that the remarkable constancy of the clinical symptoms of rheumatic fever, as met with certainly in England, were much against its being a condition that would result from many and varied infections.

Not only is there this diversity of opinion regarding the organism, but opinions differ also as to the explanation of the way in which the symptoms are caused. Does the micro organism remain localised to one spot—for example, the tonsils—and pour its toxins into the system, giving rise in this way to carditis, arthritis, nodules, and other local lesions? or is it widely distributed and present in the local lesions? We inclined to the belief that the organism was to be found in the local lesions, though perhaps only with great difficulty. The probability of its occurrence at these sites seemed to us to be indicated by the analogy of pyæmia.

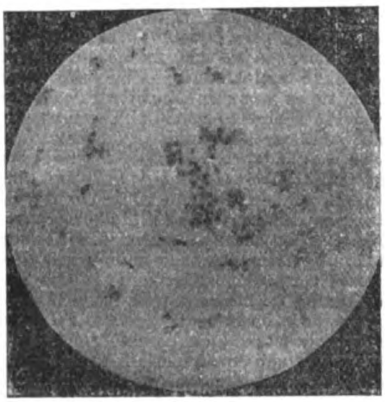
To summarise our point of view at the start of this investigation we thought it most probable that the organism would always be present in cases of rheumatic fever; that it would be capable of isolation; that it would produce the symptoms of rheumatic fever in a suitable animal; and that it would probably exhibit some definite peculiarities upon culture. We also thought that it would be present in the local lesions and that the infection would be a simple and not a mixed one. The analogy that there appears to be between rheumatic fever and septic infections pointed to the infection being coccal rather than bacillary. We were, however, naturally influenced by the positive results of Achalme and his corroborators, and their results appeared to us so definite that we gave especial attention to the discovery of this bacillus in our earlier cases.

### THE OUTLINE OF THE INVESTIGATION.

After this brief consideration of these various theories we give in outline the results of our investigation, then in detail the methods, cases, and bacteriological investigations, and finally a short summary of the facts which have been established, with some concluding remarks.

In January, 1899, we undertook the study of the bacteriology of rheumatism with the intention of confirming, if possible, the results obtained by Achalme. For some long time we were influenced by this intention, but finally abandoned the attempt, having failed to obtain a bacillus morphologically resembling anthrax either in culture or in the tissues. On the other hand, we obtained later in eight successive cases a diplococcus which grew in liquid media in streptococcal chains. This organism did not thrive upon ordinary agar or serum agar, and though we were able to grow it eventually upon blood agar it appeared to grow best in a liquid medium of milk and bouillon rendered slightly acid with lactic acid. Upon three occasions we isolated the organism in pure culture from the blood of patients during life who were suffering from acute rheumatic pericarditis. It was also obtained from the pericardial fluid after death and from the valves and lastly from the throat of a rheumatic patient. In our first two cases we did not investigate the characteristics of the diplococcus and in one recent case it was associated with numerous small bacilli. In one case a sarcina was present as a contamination. In five of the eight cases it was in pure culture. When we became acquainted with the researches of Wassermann, Westphal, and Malkoff, it seemed clear that this was the organism they had described, and we feel no doubt that it is identical although there have been certain differences in the results that we have obtained. As stated above, we succeeded best in cultivating it in an acid medium and have not had success with a strongly alkaline medium, as recommended by Wassermann, though we are in doubt as to the exact degree of alkalinity that Professor Wassermann found to be most suitable, about which point he made no definite statement of which we are aware. It is of considerable interest that we succeeded in growing the diplococcus on two occasions in the pericardial exudation and noticed in one of these instances an increase in flakiness of the fluid. On both these occasions the pericardial fluid was distinctly acid, so that there is this proof that the organism will grow in an acid medium. The demonstration of these diplococci in films from the pericardial fluid after incubation is very definite, and we have also found them in scanty numbers in films from recent vegetations, from unincubated pericardial fluid, from blood from the heart wall, and from the throat. Their demonstration in the tissues is by no means easy. We have, however, demonstrated them unmistakably in the tissue of a rheumatic nodule and in the valves, pericardium, and tonsil. Mr. H. G. Plimmer undertook a series of inoculations for us from the pure cultures that had been obtained and made intravenous inoculations into rabbits with results of which the following is an outline (Fig. 1).

FIG. 1.

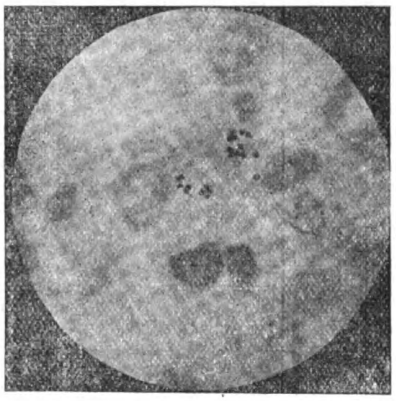


Micro-photograph of the diplococci from a culture upon blood-agar. The micro-organisms are arranged in small groups. The individual coccus is extremely minute, averaging 0·5 $\mu$. × 2100 times.

The pericardial fluid from Case 4, that of a boy who had died from an exacerbation of rheumatism, gave the first positive result. Three days after inoculation the animal limped upon the left fore leg, the left shoulder-joint was swollen, and the animal had lost flesh. Later the right hip-joint and right shoulder-joint became affected, wasting continued, and the rabbit died 10 days after inoculation. The post-mortem examination showed excess of clear fluid

in the right shoulder-joint and right hip-joint with reddening of the cartilages. The left shoulder-joint contained an opaque fluid which microscopically contained numerous endothelial cells and a few leucocytes. The heart appeared larger than natural, there was an excess of clear fluid in the pericardium, but apparently no evidence of pericarditis or endocarditis. The liver was dark red. In the lungs there were patches of broncho-pneumonia. There was no sign of abscess formation in any of the viscera. The clear fluid from the joints, taken with every precaution, was inoculated into milk tubes. Films were also made and a diplococcus was demonstrated and cultivated from this clear fluid. It was also demonstrated in the mitral valve (Fig. 2). Thus it will be seen that in

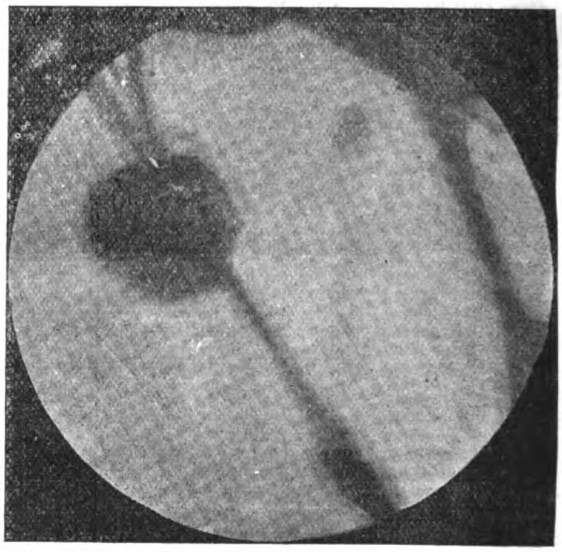
FIG. 2.



Micro-photograph showing the diplococci in the tissues. From a section through the mitral valve of a rabbit with early valvulitis. The valve showed the earliest evidences of a morbid change. The micro-organisms lay beneath the endocardium in the substance of the valve. The connective tissue cells of the valve had commenced to proliferate, giving rise to a slight projection upon the surface. The arrangement of the diplococci in small groups is somewhat characteristic. × 2100 times.

some respects our results in this case corresponded exactly with those of Wassermann. A polyarthritis had resulted and the joint first affected contained a fluid in which there were fibrin and some excess of leucocytes, the cartilages of the affected joints were redder than normal, and in none of the viscera were there any foci of suppuration. In one respect there was a difference and this was an important one: we had demonstrated the organism in the mitral valve. A second rabbit was inoculated from a culture of the joint fluid. The cultivations upon six blood agar tubes were injected intravenously into this rabbit with the following results. Upon the third day the right knee-joint swelled and the animal had lost 160 grammes in weight, then followed in succession the other knee-joint and the left shoulder-joint, and finally all the larger joints became implicated. The identity of the course of the disease with that in the first case was remarkable and certain further results developed. 17 days after the inoculation a systolic murmur was detected at the base of the heart somewhat superficial in character and the heart was acting with great rapidity. This murmur was detected for two days and then was lost and at the same time the heart sounds became faint. We diagnosed pericarditis with subsequent effusion. The next day the animal died. During the last week of the illness all the joint swellings had disappeared except that of the right knee. The necropsy showed an excess of clear fluid in the pericardium and a fibrinous coagulum in the sac with some roughening of the visceral layer over the large vessels. The right knee was full of an opaque fluid which, as in the first case, contained the diplococci, endothelial cells, and leucocytes. There was some excess of fluid in the other joints but this was clear. Upon the mitral valve there were two small white opacities resembling an early granulation. The liver was dark red and contained some small white areas which were quite firm and slightly raised. The spleen and kidneys were pale but otherwise natural. The tonsils were natural. Microscopic examination of the mitral valve did not confirm the suspicion of valvulitis. The opaque patches in the liver proved to be localised areas of coagulation necrosis. There was no trace of suppuration in the viscera. The myocardium showed well-marked fatty changes in the fibres comparable to the changes demonstrated by one of us (F. J. P.) in the human heart as occurring frequently in acute rheumatic carditis. The culture of the organism was repeated as before and the cultivations upon three tubes injected into a third rabbit, but with a negative result. The cultivations upon six tubes injected into a fourth rabbit resulted as follows. Four days after the inoculation the right knee-joint swelled and subsequently the right carpal joint and left knee-joint also and there was general wasting. Upon the tenth day we detected a soft murmur which next day we localised as mitral; this disappeared, but on the fourteenth day there was a murmur upon the right side which we diagnosed to be tricuspid in origin. The confirmation of these diagnoses being a matter of great importance upon the same day that the tricuspid murmur was detected the animal was killed. The necropsy showed that two joints contained an opaque fluid comparable to that found in the preceding cases and one a considerable quantity of clear fluid. There was excess of clear fluid in the pericardium (Fig. 3). The mitral valve showed

FIG. 3



Micro-photograph of a chorda tendinea, showing local swelling, the result of the diplococcus infection. A part of the mitral valve from a rabbit that had died from acute carditis was stained in bulk and stretched upon a slide together with its attached chordæ tendineæ. The upper limit of the photograph shows the lower margin of the valve. The chorda upon the left shows two swellings, an upper larger one close to the valve and a lower smaller one at its junction with the musculus papillaris. These swellings are caused by a connective tissue proliferation analogous to that in the valve substance and are the early expression of that change which in rheumatic fever results eventually in the deformity of the chorda tendinea seen in mitral stenosis.

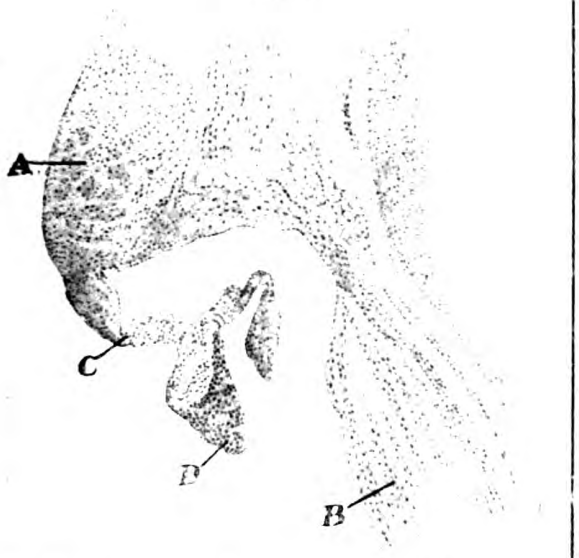
a condition macroscopically comparable to that of an early rheumatic valvulitis, and the tricuspid valve showed also, in the very earliest stage, a row of granulations along the border. The condition of the liver resembled that found in Case 2 and the kidneys also showed some white slightly raised areas quite firm on section. The tonsils were unaffected. The microscopic examination disclosed points of the greatest interest. In the parietal layer of the pericardium, stretched out and stained, we found the diplococci following the course of the blood-vessels in the perivascular lymphatic spaces. We also demonstrated them in the mitral valve and—what by the light of subsequent events was especially noteworthy—we discovered them in the kidneys in great numbers. There were no suppurative foci in the viscera (Figs. 4 and 5).

The organisms were once more isolated and injected intravenously into a rabbit. This rabbit developed polyarthritis, pericarditis, pleurisy, and pneumonia, with slight valvulitis.

The animal was killed at the height of the disease and the especial point of interest in the necropsy was the macroscopic appearance of the thoracic viscera. There were plastic pericarditis and mediastinitis, with plastic pleurisy over those parts of the lungs that are contiguous to the pericardium. The liver had the mottled appearance that is seen in man as a result of severe and acute rheumatic carditis. During the illness the rabbit had passed urine which was acid and contained numerous urates, granular casts, and diplococci. From the contents of the bladder we isolated and cultivated the diplococcus by the usual methods. There was also exudation into the tendon sheaths around the affected joints and the connective tissue near the larger joints had the gelatinous appearance of the nodule in man. We demonstrated the diplococci in the valves, pericardium, joint exudate, liver, kidneys, connective tissues around the joints, and in large numbers in the lungs and pleuræ. It is, we think, impossible not to recognise in this case the extraordinary similarity to the most severe types of rheumatic fever in childhood.

Another case in which some remarkable results occurred was the second of those in which we obtained a pure culture

FIG. 4.




THE MITRAL VALVE OF A RABBIT, TO SHOW THE COMMENCEMENT OF A VEGETATION (LOW POWER).

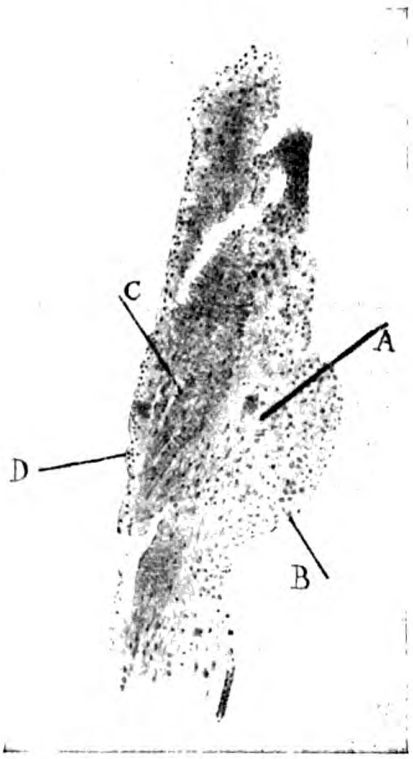
*A section through the auriculo-ventricular junction and mitral valve of a rabbit.*—In the process of embedding the valve has become somewhat bent upon itself, but it will be readily seen that the cellular proliferation (D) is upon the auricular surface. Under this magnification the organisms are not visible, but they are present at the margin of, and within, the cell proliferation.

*Explanation of the plate.*—A, The auricle. B, The ventricle. C, The mitral valve. D, The area of cell proliferation. Stain carbol-thionin.

of the diplococcus from the blood of a living patient suffering from rheumatic pericarditis. The organism was grown upon the acid medium and transferred to blood agar. Intravenous inoculation of a rabbit produced the following symptoms. Four days after inoculation the rabbit had begun to waste and limped upon the right hind leg, and the knee-joint became swollen. This continued for a week, the animal still wasting, but then it improved so much that the limp disappeared. The heart all this time acted very rapidly but there was no murmur. Five weeks after this there was a relapse and both the hind legs became very weak and the animal very emaciated. There did not appear to be any joint swelling at this time. This condition continued for about three weeks and then gradually passed off, and no cardiac murmur was detected at any time. Was this a paralytic phenomenon? It was a natural suggestion that it might be chorea, but, if so, there was not the slightest twitching, only this great weakness of both lower extremities that gradually passed away.

A third case which produced an experimental result was that of Case 6. The case was one of severe rheumatic carditis with early pericarditis. Associated with the diplococci there were some short bacilli and the growth in the pericardial fluid was accompanied by an offensive odour. An inoculation of the two organisms into a rabbit proved negative. An inoculation of the diplococci only into another rabbit also proved negative. We were surprised at this result and three weeks later a third attempt was made, though we felt very doubtful that any result would be obtained because of the difficulty of maintaining the virulence of the organism. This rabbit remained apparently well, but three weeks afterwards we found the temperature raised and a definite systolic murmur at the apex. There was no arthritic change, but the murmur remained constant for a week and was more definite than any that we had previously heard. The animal was then killed and the tricuspid and mitral valves were found to be

FIG. 5.




A transverse section of a cusp of the pulmonary valve, from a case of rheumatic carditis. The case, No. 7 in the series, was a characteristic example of rheumatic fever in childhood. After death the pericardium was found completely adherent and there were recent mitral aortic and pulmonary valvulitis. The pulmonary valve showed numerous minute projections upon the ventricular surface. The figure shows that the condition of the morbid change is still one of connective tissue cell proliferation and that the endocardium is intact. The diplococci were present in scanty numbers in the valve, but cannot be seen under this magnification. A, The commencing vegetation. B, The endocardium upon the ventricular surface. C, The connective tissue basis of the valve. D, The endocardium upon the arterial surface. Stain, carbol-thionin.

inflamed. There was also a moderate quantity of clear fluid in the abdominal cavity. We demonstrated the organisms in the valves and in the parietal pericardium, throughout which there was a definite cellular exudation.

The next case (Case 7) gave a negative result, but at this we were not surprised, for the pericardium was totally adherent, and though we obtained the diplococci from the granulations of the mitral valve they were in scanty numbers and the growth was not a vigorous one. No detectable clinical result followed the inoculation of a rabbit in the usual manner.

The last case (Case 8) was that of an adult, aged 32 years, who came to St. Mary's Hospital suffering from an acute

"sore throat." The throat was red and had the appearance of a rheumatic angina. There were muscular pains and a history of a previous attack of rheumatic fever. The heart was extensively diseased, both mitral and aortic valves were incompetent, and the action was excited and the præcordial dulness greatly increased in extent. The condition of the heart completely bore out the history of previous rheumatism. A culture was made from the throat in the milk medium and the diplococcus discovered among other organisms. This was isolated by means of blood agar plates and a pure culture injected intravenously into a rabbit. Three days after inoculation there was dyspnœa and the heart was acting with great rapidity. Two days after this a loud mitral murmur developed and the respirations were now extremely rapid. The rabbit died the same night somewhat unexpectedly. The necropsy showed great dilatation of the heart and a large vegetation upon the mitral valve with an adherent antemortem blood-clot filling the left auricle. We demonstrated the diplococci in the granulation, pericardium, and pleural exudation, and isolated them from the blood and cerebrospinal fluid.

It will be seen from this outline that on four different occasions very definite results have been obtained with rabbits. The results have been supported by demonstration of the diplococci both in the human and animal tissues. In addition to demonstrating the diplococci in the tissues in most of these eight cases we have found diplococci in the heart valves or pericardium in eight other examples of undoubted rheumatic fever, and in the pia mater and brain from a case of chorea with extremely violent movements, which proved fatal with but a slight valvular lesion and no pericarditis.

### THE OUTLINE OF THE METHODS OF BACTERIOLOGICAL INVESTIGATION.

1. *The materials for examination.*—The materials selected in the human subject for bacteriological examination were: (*a*) the pericardial exudation; (*b*) the blood from the heart; (*c*) the granulations from the valves; (*d*) the blood from the living subject during an attack of acute rheumatic pericarditis; and (*e*) the exudation from the inflamed tonsils. The material in the fatal cases was obtained as soon as possible after death and the necropsy was conducted with strict precautions for the prevention of contamination, all the instruments being carefully sterilised. The pericardium was exposed very completely by removing portions of the ribs as well as the costal cartilages upon the left side. The surface was seared with hot irons and any fluid present was drawn up in sterilised pipettes. The point of the pipette was broken off inside the pericardial cavity, the fluid withdrawn, and the pipette at once sealed. The surface of the right auricle was cauterised and the blood withdrawn in a similar manner. Finally, a sterilised suture was passed through the cardiac muscle at the apex and the heart pulled over to expose the left ventricle; then the posterior surface was thoroughly cauterised and rapidly opened with a sterilised knife, the walls were held apart by forceps, the blood-clot was removed, and the mitral valve was exposed and curetted.

2. *The culture media.*—Both liquid and solid media were used. The fluid media were incubated aerobically and anaerobically. The temperature of incubation was 37° C. The following media were used:—(*a*) Fluid.—(1) Bouillon and milk, acidified with lactic acid; (2) pork broth made with Chapoteaut's peptone and rendered strongly alkaline (in imitation of Wassermann's medium); (3) bouillon of various degrees of acidity and alkalinity; (4) ascitic fluid; and (5) cow's milk and human milk. (*b*) Solid media.—Agar, serum agar, blood agar, glucose agar, glycerine agar, and egg albumen. The organism grew best anaerobically in an acid medium. It also grew aerobically in the same medium and in blood smeared upon slightly alkaline agar. The anaerobic cultures were made in Pasteur's pipettes, which were exhausted by an air-pump and hermetically sealed. Films were invariably made from the culture used for experimental purposes before the inoculation.

The following is a detailed account of the eight cases of rheumatic fever with the investigations made from them.

CASE 1.—A girl, aged 17 years, was admitted into St. Mary's Hospital on Jan. 16th, 1899, suffering from purpura and rheumatic morbus cordis. This was the second attack of rheumatic fever and in addition five years before there had been an attack of chorea. This case was published in detail in THE LANCET of Oct. 28th, 1899, p. 1163. After a prolonged illness the patient succumbed to severe morbus cordis. A severe attack of pericarditis had developed while in the hospital and death occurred on April 15th. At the necropsy, which was made 24 hours after death, the pericardium was found to be adherent, the adhesions breaking down quite easily. The heart was enlarged and both hypertrophied and dilated. There was mitral, aortic, and tricuspid valvulitis. The other viscera showed the changes usually found in association with severe morbus cordis. There was one small infarct in the spleen. Under microscopical examination the cardiac muscle showed extreme fatty change. Bacteriology.—With Mr. H. G. Plimmer upon two occasions we made cultivations from the blood of the patient during life, taking advantage of a venesection that had been done for right heart-failure on each occasion. Both times we obtained from the tubes of the milk medium diplococci arranged in chains. The medium was treated aerobically and anaerobically. The milk tubes were the only media used.

*Note.*—At this time we were intent upon Achalme's researches and did not pursue the investigation of the cocci. In one of the anaerobic tubes we found a bacillus but were unable to isolate it, and after considerable investigation we came to the conclusion that it was a contamination.

CASE 2.—A patient, aged 19 years, was admitted into St. Mary's Hospital on Dec. 4th, 1899, suffering from pains in the joints and morbus cordis. This was the fourth attack of rheumatic fever. On admission there was advanced cardiac disease. Pericarditis rapidly developed and the patient died three days after admission. The necropsy, which was made 14 hours after death, showed recent pericarditis with turbid fluid in the pericardial sac, moderate stenosis of the mitral valve, and recent vegetations upon the aortic valve. Under microscopical examination the cardiac muscle showed much fatty change. Diplococci were demonstrated in the granulations of the mitral valve. Bacteriology.—The fluid from the pericardium was inoculated into the medium of milk acidified with lactic acid and aerobic and anaerobic cultures made. At this time we were still engaged in investigating Achalme's bacillus and following his directions the anaerobic tubes were left for 10 days. In both the aerobic and anaerobic tubes diplococci growing in a streptococcal arrangement were discovered. These organisms did not grow upon ordinary agar tubes. No inoculations were made into animals.

*Note.*—The strepto-diplococci were not thoroughly investigated, but it was found that an ordinary agar medium was not suited to them.

CASE 3.—A woman, aged 20 years, was admitted into St. Mary's Hospital, moribund, suffering from severe rheumatic pericarditis and mitral disease. The patient died the same day. The investigation was incomplete. Through a puncture in the pericardium we withdrew some sanious pericardial fluid in a sterilised pipette. Various media were used and from a bouillon tube and the milk medium we obtained diplococci contaminated with sarcinæ.

*Note.*—In this case the diplococci grew in chains in the acid milk medium in a manner precisely similar to that noted in the two preceding cases. Upon ordinary media these organisms failed to grow.

CASE 4.—A patient, aged nine years, was admitted into the Hospital for Sick Children, Great Ormond-street, on Oct. 11th, 1899, suffering from dropsy and morbus cordis. There was no definite history of rheumatism and no history of scarlet fever. Upon admission the heart was found to be enlarged and there was evidence of organic mitral disease. There were dropsy, albuminuria, and ascites. The illness was prolonged and the condition for some time stationary, but in March active rheumatism developed and nodules appeared; this was rapidly followed by cardiac failure and death on March 20th, 1900. At the necropsy, which was held 36 hours after death, the pericardium was found to contain some recent plastic exudation and excess of clear fluid. The valvular disease was slight but the heart was much dilated and hypertrophied. The lungs were œdematous, the liver was "nutmeg" in appearance, and the kidneys and spleen were firm. Under microscopical examination the cardiac muscle showed granular and fatty changes and films from the pericardial fluid and heart wall showed diplococci. Diplococci were also found in the mitral valve. Bacteriology.—(1) Three Pasteur pipettes of the pericardial fluid were incubated aerobically at 37° C. for three days; and (2) blood-agar tubes were inoculated with

the pericardial exudation and curetted granulations from the mitral and aortic valves. The diplococcus was found in every tube in pure culture. On blood agar they grew in discrete and easily detachable colonies. The pericardial fluid had increased in opacity and flakiness. The reaction of the pericardial fluid was distinctly acid and there was no offensive odour. Subcultures were made upon the milk medium, but on this occasion they did not grow well. Two tubes of the pericardial fluid were injected intravenously into a rabbit.

*Rabbit No. 1.*—Three days after the injection the animal was wasting and the left shoulder-joint was swollen. Nine days afterwards the right hip and shoulder had become swollen. On the tenth day from the date of inoculation the rabbit died from broncho-pneumonia. At the necropsy the heart appeared enlarged, but there was no definite valvulitis or pericarditis visible. There was a definite excess of clear fluid in the pericardial sac. The cartilages of the affected joints were reddened but there was no ulceration of their surfaces. The right shoulder-joint and right hip-joint contained an excess of clear fluid. The left shoulder-joint contained an opaque fluid and films afterwards showed that the fluid contained many endothelial cells from proliferation of the cells lining the synovial membrane of the joint together with a scanty number of leucocytes. The liver was dark red and engorged with blood. The spleen was firm and the kidneys were apparently natural. There were no traces of abscess formation anywhere. The lungs were solid in patches from broncho-pneumonia. There was no peritonitis. Under microscopical examination the strepto-diplococcus was demonstrated in the joint fluid and the mitral valve which was stained in bulk. The liver was engorged with blood. The heart showed no fatty change. The spleen and kidneys showed nothing distinctive. Bacteriology.—The clear fluid from the right shoulder joint and heart blood were used for inoculation of anaerobic tubes of the milk medium and 48 hours afterwards these tubes were found to contain the organism growing vigorously in chains. From these tubes six blood agar cultures were made aerobically. The six blood agar tubes were used for the inoculation of the second rabbit.

*Rabbit No. 2.*—Three days after inoculation the right knee-joint became stiff and the animal had lost 160 grammes in weight; four days afterwards the left shoulder became swollen; five days afterwards both the knee-joints became affected, and the right was more swollen; 14 days afterwards the animal was much wasted, the heart was rapid and feeble, and the animal was short of breath. The joints still remained swollen. 17 days after we detected a basal systolic murmur over the position of the large vessels; the next day this became fainter and then disappeared. With this disappearance the heart sounds became muffled at the base and we diagnosed as the most probable explanation a pericarditis with effusion. 20 days after inoculation the animal died. The swelling of all the joints except the right knee had gradually disappeared some days before death. At the necropsy the heart was enlarged and there was excess of clear fluid in the pericardium and also a viscid coagulum. The visceral layer of the pericardium showed slight roughening over the base of the heart. There was no definite valvulitis. The liver was dark red and mottled with white spots of varying size. The spleen was firm. The kidneys showed no definite changes. There was no trace of suppuration in any of the viscera. The affected joints were reddened and except in the case of the right knee contained a very slight excess of clear fluid. The right knee was distended with an opaque fluid which, as in the case of the first rabbit, contained many endothelial cells and also mononuclear and polynuclear leucocytes. The cartilages of the joints were unaffected. The tonsils were not inflamed. There was no peritonitis. Under microscopical examination: (1) in films from the joint the diplococcus was demonstrated in considerable numbers; (2) the heart muscle showed definite fatty change in many fibres; (3) the white patches in the liver proved to be liver cells undergoing necrosis; (4) the pericardial fluid clotted rapidly in the pipette after withdrawal, the clot in the pericardial sac and in the pipette showing a delicate fibrino-cellular structure; (5) the kidneys and spleen showed no change of note; and (6) there was no peritonitis. There were no foci of suppuration in the viscera. Bacteriology.—Cultures were made from the heart blood and right knee-joint in the milk medium and in both series of tubes the diplococcus was found growing vigorously in pure culture.

*Rabbit No. 3.*—A third rabbit was inoculated with the cultivations upon three blood agar tubes but with a negative result.

*Rabbit No. 4.*—A fourth rabbit was inoculated with the contents of six blood agar tubes and symptoms once more commenced to appear on the third day and developed as follows. On the third day after inoculation the right tarsal joint became swollen and tender. On the sixth day afterwards there was wasting and the left knee-joint was swollen. On the seventh day afterwards the right carpal joint swelled. The heart's action was excited and we suspected a mitral murmur. The next day this murmur was definite and then became less audible. On the tenth day after inoculation we suspected a tricuspid murmur and the animal was killed to verify these conclusions. For some days previously there had been very marked dyspnœa. At the necropsy the right carpal and tarsal joints were distended with an opaque fluid; the left knee-joint contained clear fluid. The cartilages were reddened but otherwise unaltered. The pericardium contained an excess of clear fluid. The heart was dilated. There was no visible pericardial roughening. The mitral valve showed definite granulations, the appearance exactly resembling an early rheumatic endocarditis. The tricuspid valve showed a still earlier stage. The aortic and pulmonary valves were unaffected. The liver was dark red and mottled with firm white areas, some of them slightly raised above the surface. The spleen was pale but firm. The kidneys were both pale and contained a few white areas, firm and slightly raised above the surface. The tonsils were unaffected. In none of the viscera were there any foci of suppuration. There was no peritonitis. Under microscopical examination (1) in the parietal layer of the pericardium, stretched out and stained in bulk, the diplococci were clearly seen in great numbers along the course of the vessels, lying apparently in the perivascular lymphatic spaces; (2) the mitral valve showed on section an early granulation on the auricular surface, consisting of a proliferation of the connective tissue cells of that part of the valve. The delicate endothelial layer of the endocardium passed over this granulation, and in the granulation and in the deeper part of the endocardium diplococci were visible. They could be seen also in the endocardium lining the auricle and ventricle and causing in places cell proliferation. They were also present in considerable numbers in the retiform tissue at the base of the valve, that is, in the position of the valve ring; (3) the joint fluid showed numerous diplococci and endothelial cells, also eosinophiles and some polynuclear leucocytes; (4) the liver showed numerous areas of coagulation necrosis; (5) the kidneys showed areas of coagulation necrosis, especially in the region of the convoluted tubules and numerous diplococci in these areas; (6) the heart muscle showed well-marked fatty and other degenerative changes; and (7) there was no peritonitis. Bacteriology.—The diplococci were obtained in pure culture from the joints and heart blood. This case made clear several important facts: (1) the early and definite affection of the heart which we had suspected previously to be a result of the infection became now a certainty; (2) the post-mortem appearances of the heart and the microscopic changes were analogous to those found in rheumatic fever; (3) again there was no suppuration in the viscera; and (4) the kidneys showed that the diplococci were present in great numbers. Inoculations were next made from the cultivations upon six blood agar tubes obtained from the foregoing case and were injected into a rabbit in the usual way.

*Rabbit No. 5.*—The rabbit developed the following symptoms. Four days after the inoculations the right carpal joint was swollen and the heart was rapid and excited. Other joint swellings followed. The cardiac rhythm became triple and later the action irregular. There were marked dyspnœa and a mitral murmur. Seven days after we heard a pericardial friction sound and diagnosed also pneumonia over the fronts of both lungs. Upon the previous day a great quantity of thick white urine was passed. On the eighth day the rabbit was killed, with the diagnosis of pericarditis, valvulitis, pneumonia, and polyarthritis. At the necropsy the appearance of the thoracic organs was such as is seen in severe rheumatic fever. There were pleurisy with plastic exudation and pneumonia over those parts of the lung that covered the heart. There were also mediastinitis and recent plastic pericarditis with some effusion of clear fluid in the pericardial sac. The heart was greatly dilated and the muscle was pale. The mitral valve showed early valvulitis. The liver was enlarged and mottled red

and white, just such an appearance as is seen in acute rheumatism. There were no white firm areas as in former cases. The spleen was enlarged and was softer than in previous cases. Both kidneys were pale. The joints contained an opalescent fluid and the connective tissue around them had the gelatinous appearance suggestive of a nodule formation. The tendon sheaths around the right tarsal joints contained an opaque fluid. There was no peritonitis. The tonsils were not affected. The bladder was much distended and thick white urine was withdrawn by a pipette. This fluid on adding acetic acid cleared rapidly. The urine under the microscope showed numerous dumb-bell shaped crystals of uric acid, diplococci, and granular casts. There was no suppuration in the viscera. The heart muscle was at once teased and examined microscopically. Numerous clear granules were seen in the fibres, which stained faintly with osmic acid. Under microscopical examination the diplococci were demonstrated in the mitral and tricuspid valves and in the pericardium; also in the joints, connective tissue around the joints, kidneys, and liver. In the lungs and pleuræ they were present in very great numbers, especially towards the surface. Bacteriology.—The inoculations were made in the usual way and a free growth obtained upon blood agar. The organisms were in this case isolated from the bladder.

*Note.*—This case presented the most striking resemblance to severe rheumatic fever both clinically and in the pathological results. The condition of the thoracic viscera was just as is seen in the virulent pleuro-pericarditis of rheumatic fever in childhood. The diplococci in this case were demonstrated in the lungs and liver.

CASE 5.—A youth, aged 16 years, was admitted into St. Mary's Hospital on March 20th, 1900, suffering from rheumatic pericarditis. This was the second attack of rheumatic fever and in addition he had suffered from chorea at the age of 15 years. The illness had commenced a fortnight previously to admission with a sore throat and pain in the right knee, followed by shivering, and pain in the chest. On admission there were general pericardial friction and mitral, and a suspicion of aortic, valvulitis. The heart was much dilated and right heart failure was threatened. On this account he was venesected. This patient made an excellent recovery from the pericarditis, but left the hospital in May with evidence of organic valvular disease. Bacteriology.—On March 24th the patient was venesected and due precautions were taken to obtain the blood free from contamination. Three different media were used: (1) the milk medium (acid); (2) the pork medium (strongly alkaline); and (3) the bouillon medium (alkaline). Anaerobic tubes were made of these media. In one anaerobic milk-tube the strepto-diplococci were growing vigorously. The remaining tubes were sterile. From the anaerobic milk-tube sub-cultures were made and a blood agar tube was inoculated upon which discrete colonies of the diplococci made their appearance. Sub-cultures were made and the remainder injected intravenously into a rabbit.

*Rabbit No. 6.*—Four days after inoculation the rabbit limped, the right knee-joint was swollen, and it had lost flesh. 11 days afterwards it was still limping and was thinner. 21 days afterwards, though the heart was very rapid, the limp had disappeared and a slight improvement set in. Five weeks afterwards there was a relapse and both hind legs became affected, and the animal could not support the weight upon them. It was now very thin. The heart sounds were very feeble and rapid but there was no murmur. This affection of the hind limbs seemed to be a paralytic phenomenon and no swelling of the joints was apparent. There was no twitching. This symptom also passed away in about three weeks and the animal could use both hind legs again in a normal manner.

CASE 6.—A girl, aged thirteen and a half years, was admitted into St. Mary's Hospital on March 25th, 1900, suffering from active rheumatism and morbus cordis. In January, 1900, the first attack of rheumatism occurred. The present illness had lasted three weeks. On admission the child was very ill. There were numerous nodules, the heart was dilated, there was organic mitral disease, and there was general pericarditis. She grew rapidly worse and died on the 30th. The necropsy, which was made eight hours after death, showed recent lymph upon the visceral pericardium and turbid fluid in the sac. There were recent granulations upon the mitral valve and some thickening of the cusps of the aortic valve. The liver showed an early nutmeg change. The spleen was firm and dark. The kidneys were pale. The pericardial fluid was definitely acid in reaction. On microscopical examination the heart showed very marked fatty change in the muscle fibres and diplococci were demonstrated in the granulations of the mitral valve. Bacteriology.—Films made of the pericardial fluid after incubation showed diplococci and a short bacillus. A cusp of an aortic valve and a piece of the mitral valve were stained and examined in bulk but no organisms were found. A section of the mitral valve showed the cocci in the granulations. The following cultures were made: (*a*) the pericardial fluid was incubated in pipettes; (*b*) the lymph was introduced into (1) blood agar, (2) the milk medium (acid), and (3) the pork medium (alkaline); and (*c*) fragments curetted from the mitral granulations were also placed in the same media. The heart blood was also introduced into other tubes of the same media. Anaerobic tubes were made of the milk medium (acid). The results were as follows. Two of the pipettes of pericardial fluid were sterile, one contained the diplococci, but with them numerous small bacilli, and the odour of the fluid was offensive. The blood agar was sterile. The tube of the heart blood was sterile. A blood agar tube was made from the pericardial fluid. The following inoculations into animals were made. 1. Five minims of the pericardial fluid containing the diplococci and bacilli were injected intravenously but the result was negative. 2. Later the contents of six blood agar tubes from a sub-culture were inoculated but the result was again negative. Later a third attempt was made. The culture upon blood agar was growing, but not vigorously, and a sub-culture was accordingly made in the acid medium and then this re-transferred to six blood agar tubes.

*Rabbit No. 7.*—A rabbit was inoculated but no apparent result followed until three weeks after the inoculation, when a definite systolic murmur was detected at the apex and the temperature in the rectum was found to be 102·8° F. No joint lesion developed and after detecting the murmur each day for a week the animal was killed. The necropsy showed definite tricuspid and mitral valvulitis and a definite excess of clear fluid in the peritoneal cavity. The organism was demonstrated in the valves and parietal pericardium in which there was definite cellular exudation.

*Note.*—This case corresponded clinically to the well-known rheumatic condition of organic valvular disease occurring without arthritis.

The pyrexia in the rabbits in these cases was moderate, the range being from 101° to 103·4° F. The temperature was taken in the rectum. In the more severe cases the fever was continuous though with some oscillation.

CASE 7.—A boy, aged nine years, was admitted into the Hospital for Sick Children, Great Ormond-street, on Feb. 26th, 1900, suffering from rheumatic fever from which his mother also had suffered. On admission there were pericarditis and arthritis. The illness was prolonged and after a partial improvement a relapse of carditis occurred and terminated fatally on April 30th. At the necropsy, which was made 30 hours after death, the tonsils were found to be large and inflamed. There was consolidation of areas of both lungs. The heart was large and the muscle pale and soft. The pericardium was generally adherent, the adhesions breaking down easily. There were recent granulations upon the mitral and aortic valves and the pulmonary valve showed very early inflammation. The liver, kidneys, and spleen showed the usual changes. At the microscopical examination the important fact was the demonstration of the diplococci in the tissue of a rheumatic nodule. The nodule was of about the size of a small pea and was situated over the left olecranon. The diplococci were in small clumps in the fibrous tissue. We are not aware that they have been demonstrated before in these structures which are looked upon as extremely characteristic of rheumatic fever. Bacteriology.—The recent granulations on the mitral and aortic valves were curetted and the heart blood taken in a sterilised pipette. Films from the mitral granulations showed a few diplococci. The milk medium and blood agar tubes were used. The milk medium was treated anaerobically, and from the curetted granulations of the mitral valve a growth of strepto-diplococcus was obtained but it was not abundant. The usual blood agar tubes were made but the growth was poor. Intravenous inoculation in a rabbit (No. 8) proved negative.

CASE 8.—A man, aged 28 years, came into St. Mary's Hospital on June 7th, 1900, suffering from a "sore throat." The illness had commenced with general malaise and pains in the

limbs and joints. There was a history of a definite attack of rheumatic fever four years before. The throat was injected and the tonsils were in a condition of acute catarrh. The heart was much enlarged and both mitral and aortic valves were incompetent. The enlargement of the heart, the character of the murmurs, and the pulse all pointed to a previous attack of rheumatic carditis and confirmed the history of previous rheumatism. We diagnosed from the history, the appearance of the throat, and the excited action of the heart that the condition was one of rheumatic tonsillitis. A culture was made upon the acid milk medium and the tube incubated aerobically. Minute diplococci were found in a film in association with other micro-organisms. Bacteriology.—24 hours after the culture had been made a film showed that a diplococcus was growing in association with other micro-organisms and blood agar tubes were inoculated from the milk culture. On the 12th blood agar plates were made from these tubes and a diplococcus isolated and transferred to blood agar tubes. The diplococcus resembled morphologically and in its growth that found in the seven preceding cases. On the 14th the contents of six blood agar tubes were injected intravenously into a rabbit.

*Rabbit No. 9.*—On June 15th the respirations were rapid and the action of the heart was excited. On June 16th the heart sounds were loud and the action was very rapid. On June 18th there was suspicion of a systolic apical murmur and of pleurisy. On June 19th a very loud systolic apical murmur was discovered and both pleurisy and pericarditis were suspected. The rabbit died in the night somewhat unexpectedly. At the necropsy the heart was found to be greatly dilated and there was some excess of fluid in the pericardial sac. The mitral valve showed a large vegetation upon the anterior flap and to this a large ante-mortem clot occupying much of the left auricle was firmly adherent. The posterior flap was reddened. The aortic valves were reddened and the aorta close to the valve showed a small patch of aortitis. The tricuspid valve was reddened. The pulmonary valve was apparently normal. There was recent fibrinous exudation in the pleuræ. The lungs were engorged and solid in small areas, close beneath the pleuræ. There was no trace of suppuration in any of the viscera. Under microscopical examination the diplococci were demonstrated in the vegetation of the mitral valve, in the pericardium, and pleural exudation. Bacteriology.—Cultivations were made anaerobically in the acid medium from (*a*) the blood and (*b*) the cerebro-spinal fluid from the lateral ventricles. In both instances the diplococci were obtained in pure culture.

*Note.*—This case by the light of the former one is of extreme interest. 1. It demonstrated conclusively that these diplococci when present in the throat of a man the subject of rheumatic fever will, if isolated during an attack of angina faucium, cause valvulitis and pericarditis, both non-suppurative, when inoculated intravenously into a rabbit. 2. The presence of the micro-organism in the cerebro-spinal fluid is very suggestive when the close association of chorea and rheumatic fever is considered from this point of view.

*(To be continued.)*

## SOME POINTS ABOUT POST-DIPHTHERITIC PARALYSES.

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FOR being able to publish the following details concerning post-diphtheritic paralyses I have to thank Dr. R. A. Birdwood of the Park Hospital, Hither Green, through whose courtesy I was permitted to have free access to the case-books, wards, and laboratories of the above hospital. I hope that the facts herein contained will be found lucid and concise. The figures are based upon all the cases of diphtheria admitted into the Park Hospital during 1899, and I start first with general facts and then enter upon a few points of special interest.

Without further comment I will start with the general facts for the year 1899, which were as follows. During 1899 there were 1316 cases of diphtheria in the wards. In the one year there were 275 cases of post-diphtheritic paralysis or paresis, so that in about one case of diphtheria out of every five cases the patients suffered from paralysis or paresis. There were 147 cases in males and 128 in females. Considering that the number of males and females admitted with diphtheria in 1899 were almost exactly the same, the above shows that the males (53·5 per cent.) suffered more from paralysis after diphtheria than the females (46·5 per cent.). Of those who suffered from paralysis there were 80 deaths (29 per cent.), 44 occurring in males (55 per cent.) and 36 in females (45 per cent.).

TABLE I.—*Incidence of Paralysis and Paresis in Age-periods and Sex for the Year 1899.*

| Ages. | Males. | Females. | Total. |
|---|---|---|---|
| Under 1 year | 2 | 3 | 5 |
| 1 to 2 years | 7 | 9 | 16 |
| 2 „ 3 „ | 9 | 8 | 17 |
| 3 „ 4 „ | 22 | 15 | 37 |
| 4 „ 5 „ | 19 | 10 | 29 |
| 5 „ 6 „ | 15 | 25 | 40 |
| 6 „ 7 „ | 19 | 16 | 35 |
| 7 „ 8 „ | 17 | 16 | 33 |
| 8 „ 9 „ | 7 | 9 | 16 |
| 9 „ 10 „ | 8 | 6 | 14 |
| 10 „ 11 „ | 8 | 4 | 12 |
| 11 „ 12 „ | 3 | 2 | 5 |
| Over 12 „* | 11 | 5 | 16 |
| Totals... ... | 147 | 128 | 275 |

* Including those in their thirteenth year. The ages of these patients were as follows: two were 12 years of age, four were 13 years, four were 14 years, three were 15 years, one was 16 years, one was 20 years, and one was 35 years.

TABLE II. *The 275 Cases taken in Five-yearly Periods.*

| Age-periods. | Males. | Females. | Total. |
|---|---|---|---|
| Under 5 years.* | 59 | 45 | 104 |
| 5 to 10 years.* | 66 | 72 | 138 |
| Over 10 years. | 22 | 11 | 33 |
| Totals... ... | 147 | 128 | 275 |

* In the age-period from three to eight years the numbers were: males, 92; females, 82; total, 174.

Thus out of 275 cases of paralysis and paresis for all ages we find that there were 174 cases that occurred between the ages of three and eight years, equalling 63·2 per cent. of the total number. Again, we see that there were 40 cases between the fifth and sixth year of age, equalling 14·5 per cent. of the fatal cases for all ages, which in the above table is in excess of any other period of life. The females suffered most severely in the five to six years period, whilst the males fared worst in the three to four years period, but this latter does not prove such to be the case absolutely without stating the number of each sex admitted from three to four years of age and from five to six years of age respectively.

### CARDIAC PARALYSIS.

By cardiac paralysis, or as it has sometimes been called "vagus paralysis," I mean to infer those cases which are clinically characterised by (1) heart failure, (2) vomiting, (3) blueness of the skin and the mucous membranes, and (4) generally coldness of the extremities in the final stages. As regards the circulatory system the following conditions are met with, those first mentioned being the most common ones: dilated heart; weak action of the heart; irregular, intermittent, or tachycardiac heart; the heart sounds are approximated; the first sound is faint, short, with systolic murmur, or is heard reduplicated at the mitral and the tricuspid areas; the galloping rhythmic heart; the brady-cardiac heart; and the heart with pulmonary systolic murmur. Generally several of the above conditions are associated together. Thus it is very frequent to find in the heart in a cardiac case at some period dilatation, weak action, irregularity, intermittency, tachycardia, approximation of the first and second sounds, and a short faint first sound often with a systolic murmur. When galloping rhythm is observed it is generally near the end. The pulse is generally very

fast, it is frequently irregular, is often hardly felt (especially when death is approaching), and frequently it is intermittent. As a rule all the above conditions are noticed in cardiac cases in some stage or other. There are occasionally hæmorrhages in these cardiac cases. They may be subcutaneous and are generally small in extent or there is sometimes epistaxis, &c. In some cases there is collapse and very sudden death. The temperature is first 2° or 3° up and then subnormal. In the respiratory system breathing may be laboured and there is occasionally sighing respiratory action. Œdema of the lungs is not infrequent. With regard to the urinary system albuminuria is almost invariably present; not infrequently there is suppression of the urine, and occasionally there is hæmaturia. The general nervous symptoms are: convulsions, drowsinesss, delirium (occasionally), and restlessness (frequently).

The above-mentioned facts enumerate the chief symptoms and signs in cases of cardiac paralysis, though of course there are others, but these perhaps are the ones worthy of mention. Some of the facts, especially those relating to the urinary system, are also what one might get in a case of diphtheria without the paralysis.

During the year there were 30 deaths in the various forms of paralysis after diphtheria and 64 of these cases were due to cardiac paralysis, so that only 16 deaths were due to other causes, whilst 80 per cent. of the deaths were the result of cardiac paralysis. Of all forms of paralysis 23 per cent. were of the cardiac variety, and of the 64 cases of cardiac paralysis 33 were in males and 31 in females.

TABLE III.—*Season in Cardiac Paralysis and the Approximate Proportion of Cardiac Cases to the Total Number of Diphtheritic Cases Admitted Each Month.*

| — | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of patients admitted with diphtheria in various months... ... | 71 | 113 | 67 | 48 | 73 | 113 | 148 | 115 | 111 | 158 | 159 | 135 |
| Number of cases in each month ... ... | 5 | 6 | 4 | 2 | 3 | 1 | 9 | 4 | 4 | 11 | 10 | 5 |
| Approximate proportion of cardiac cases | 1 to 14 | 1 to 19 | 1 to 17 | 1 to 24 | 1 to 26 | 1 to 113 | 1 to 16 | 1 to 29 | 1 to 28 | 1 to 14 | 1 to 16 | 1 to 27 |

*Age-periods of cardiac paralysis.*—Under the age of one year there was one case, from one to two years there were four cases, from two to three years 10 cases, from three to four years seven cases, from four to five years seven cases, from five to six years six cases, from six to seven years 12 cases, from seven to eight years six cases, from eight to nine years six cases, from nine to 10 years there was one case, from 10 to 11 years there were two cases, and from 13 to 14 years two cases. Here we find the great proportion of cases occurring between the ages of two and nine years inclusively, the majority being in the six to seven years age-period. After nine years of age there is a great falling off in these cases.

*The number of days after the beginning of an attack of diphtheria that the symptoms and signs of cardiac paralysis were first noted.*—In one instance the symptoms came on upon the second day of illness, while in one other case it seems to have been on the thirty-sixth day. These marked the two extremes. Of the 64 cases the average date upon which the symptoms appeared was the seventh day.

*Duration of cardiac paralysis.*—The extremes were one day and 14 days, though, perhaps, some doubt may be expressed as to the latter period. The average duration of life after cardiac paralysis was first clinically noted was four days.

*The temperature in cardiac paralysis.*—A fact which strikes one forcibly after looking over some 100 odd charts is that there seems to be one particular kind of chart which occurs in most cases of cardiac paralysis, especially seen in those cases which run their course in from six to nine days. For instance, a patient, aged six years, came in on the fourth day of the disease with a temperature of nearly 101°F., which fell to 100° on the fifth day, then on the sixth day there was a drop to 97°, and though the temperature nearly rose to normal again for a short time it kept near the 97° till the ninth day of illness, when it was below 97° and death occurred. The cardiac symptoms in this case came on upon the sixth day of the disease.

*Greatly swollen cervical glands in the early stages of cardiac paralysis.*—Large numbers of these cases show early great swelling of the cervical glands, generally bilateral. It certainly does not occur in all cases for there is a fair proportion without and, indeed, many cases show only the slightest enlargement. Still, cases of diphtheria with greatly enlarged cervical glands in the early stages require urgent attention and frequently turn out to be cardiac cases. The amount of membrane seen in these cases is not of much diagnostic importance, for though cardiac cases often have much membrane there is just as frequently very little, and again we often see many cases which are non-cardiac with great masses of membrane.

## DIAPHRAGMATIC PARESIS AND PARALYSIS.

There were 21 cases of this form of paralysis during the year, which compared with the total cases of all forms of paralysis and paresis during the same period, 275, gives the result that 7·6 per cent. of cases were diaphragmatic. It may be here mentioned that as diaphragmatic paralysis rarely occurs without some other paralysis or paresis these cases, with only one or two exceptions, contained various other parts affected in the same patient, as will be seen directly.

*Deaths from diaphragmatic paralysis.*—Of 21 cases of the above paralysis 11 terminated fatally and in 10 the patients recovered, so that practically half of the patients succumbed, and compared to the total deaths for the year from all forms of paralysis we find that 13·7 per cent. were due to diaphragmatic paralysis. In the 21 cases 13 were males and eight were females. The age distribution in these cases was as follows. Under the age of one year there were no cases, from one to two years there were two cases, from two to three years three cases, from three to four years six cases, from four to five years two cases, from five to six years five cases, from six to seven years no cases, from seven to eight years there was one case, from eight to nine years one case, from nine to 10 years there were no cases, and from 10 to 11 years there was one case. Most of the cases occurred between the ages of two and six years. As to the day of disease upon which diaphragmatic signs were first noticed clinically the two extremes were 11 and 50 days respectively, while the average time was 37 days. The duration of fatal cases after paralysis first set in was three days for the minimum time, while one case was put down at 65 days; but this case is not counted in the average, as when the first signs were noticed they were doubtful and probably the diaphragm did not suffer till some little time later. The average duration was from six to seven days.

The following are brief particulars of the various forms of paralysis or paresis which were associated with diaphragmatic paralysis and the day of onset in each case, counting from the initial symptoms of diphtheria to the first time the paralysis, &c., was noted.

*The palate and the diaphragm.*—Case 1.—The patient was a male, aged four years. The palate, 50 days; and the diaphragm, 50 days. Case 2.—A female, aged three years. The palate, 24 days; and the diaphragm, 27 days. Case 3.—A male, aged five years. The palate, 11 days; and the diaphragm, 11 days. Case 4.—A male, aged three and a half years. The palate, 35 days; and the diaphragm, 46 days. The point of interest is that the palate was always affected either before or at the same time as the diaphragm.

*The palate, the internal rectus, the muscles of deglutition, and the diaphragm.*—Case 1.—A male, aged three years. The palate, 31 days; the muscles of deglutition, 32 days the internal rectus, 33 days; and the diaphragm, 36 days. Case 2.—A male, aged one and a half years. The palate, 25 days; the muscles of deglutition, 37 days; the internal rectus, 41 days; and the diaphragm, 61 days. It will be noticed that the same order was maintained in each case.

*The palate, ocular, and the diaphragm.*—Case 1.—A female, aged four years. The palate, 20 days; ocular, 20 days; and the diaphragm, 39 days. Case 2.—A male, aged one and a half years. The palate, 22 days; ocular, 48 days, and the diabpragm, 46 days. Here the palate was amongst

the first to suffer, but the ocular affection varied. The above are returned as "ocular" because the particular muscles of the eye are not stated.

*The larynx, the palate, the external rectus, and the diaphragm.*—Case 1.—A female, aged five years. The external rectus, 31 days; the palate, 36 days; the larynx, 37 days, and the diaphragm, 40 days.

*The muscles of deglutition, the internal rectus, the ciliary muscle, and the diaphragm.*—Case 1.—A male, aged two and a half years. The muscles of deglutition, 29 days; the diaphragm, 34 days; the right internal rectus, 35 days; and the ciliary, 36 days.

*The right external rectus, the flexors of the neck, and the diaphragm.*—Case 1.—The diaphragm on the thirty-eighth day.

*The palate, the external rectus, and the diaphragm.*—Case 1.—A male, aged seven years. The palate, 20 days; the external rectus, 17 days; the diaphragm, 43 days. Case 2.—A male, aged five years. The palate, 24 days; the external rectus, 39 days; and the diaphragm, 47 days. Case 3.—The palate, 29 days; the external rectus, 45 days; and the diaphragm, 39 days. The variable position of the external rectus is seen, though the palate generally suffered first and the diaphragm generally last.

### PARESIS AND PARALYSIS OF THE PALATE.

There were 110 cases where the palate alone was affected, which equalled 40 per cent. of the total number of cases of various kinds of paralysis and paresis for the year. With regard to sex there were 61 cases in males and 49 in females. The minimum age was one and a half years, the maximum 35 years, whilst the average age was seven years. As to the day of onset the minimum time was the eighth day of diphtheria, the maximum the fifty-fifth day, and the average the twenty-seventh day. The following list shows fairly well how often the palate is affected either alone or with other parts:—

| | | |
|---|---|---|
| The palate alone | ... ... ... ... ... | 110 cases. |
| ,, with the ciliary muscles | ... | 5 ,, |
| ,, ,, external rectus | ... | 27 ,, |
| ,, ,, ocular muscles | ... | 3 ,, |
| ,, ,, right facial | ... ... | 1 case. |
| ,, ,, ciliary muscles and pupils | ... ... ... | 2 cases. |
| ,, ,, larynx | ... ... ... | 1 case. |
| ,, ,, diaphragm | ... ... | 17 cases. |
| Total of times palate suffered | ... ... ... | 166 cases. |

So that of 275 patients suffering from paralysis, &c., in 166 of these patients the palate was affected either alone or with others parts, which equals 60 per cent. of all the cases.

TABLE IV.—*Distribution of Paralysis and Paresis in the Various Months.*

| Month. | Cardiac. | Diaphragmatic. | All other forms. | Number of patients admitted to hospital. |
|---|---|---|---|---|
| January ... ... ... ... | 5 | 2 | 16 | 71 |
| February ... ... ... ... | 6 | 1 | 15 | 113 |
| March ... ... ... ... | 4 | 1 | 16 | 67 |
| April... ... ... ... ... | 2 | 2 | 13 | 48 |
| May ... ... ... ... ... | 3 | 0 | 17 | 78 |
| June ... ... ... ... ... | 1 | 0 | 10 | 113 |
| July ... ... ... ... ... | 9 | 3 | 18 | 148 |
| August ... ... ... ... | 4 | 3 | 33 | 115 |
| September ... ... ... | 4 | 4 | 22 | 111 |
| October ... ... ... ... | 11 | 1 | 7 | 158 |
| November ... ... ... | 10 | 1 | 11 | 159 |
| December... ... ... ... | 5 | 3 | 12 | 135 |
| | 64 | 21 | 190 | 1316 |
| | | 275 | | |

The cardiac and diaphragmatic cases have been discussed before. Under the heading "All other forms" every kind of paralysis and paresis barring the above two are included, but the majority of the cases in this list were those of palate paresis. The number of cases of paralysis can be compared in each month with the number of patients admitted with diphtheria. Noticeable points under the heading "All other forms" are the great number of cases in August (33) and the comparatively small number in October (seven); and it will be seen on looking at the table that just the opposite conditions obtain in cardiac paralysis, where there were rather few cases in August (four) and the greatest number in October (11.) November is somewhat similar to October.

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SOME NOTES ON THE

## USE OF MERCUROL: A NEW REMEDY IN URETHRITIS.

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DURING the last few years several so-called specifics for the treatment of urethritis have been placed on the market, the most prominent of which have been "argonin" and "protargol," both silver derivatives. Argonin, I believe, has lost its popularity somewhat on account of the difficulty some find in preparing a solution from it, and also on account of its liability to decompose. These difficulties were not considered against it until protargol was placed upon the market, which many think to be a superior preparation. Both of these compounds have been used by me in my private practice and clinics with good results.

Some months ago a new remedy was introduced, called "mercurol," which has been given a thorough trial in my clinic, and from the clinic history book of the cases treated by this remedy I have drawn certain conclusions which I present in this paper. Let us first consider what mercurol is before treating of its clinical results.

Mercurol is a chemical compound of nucleinic acid with mercury, the nucleinic acid being obtained from yeast. This organic combination, in the form of a brownish-white powder, is soluble in water but insoluble in alcohol. It does not precipitate albuminous liquids and is not precipitated by alkalies. All that the manufacturers claim for mercurol is that the action of the mercury is rendered more effective and less irritating than it would be outside of this combination. It is not claimed that the nucleinic acid exerts any remedial action, but only that it facilitates the action of the mercury. Briefly, the effect claimed for the nucleinic acid admixture is to render it possible to administer mercury in much larger doses than otherwise would be possible and that without pain or disagreeable symptoms to the patient.

During four months this remedy has been used quite extensively in my clinic at the Post-Graduate Medical School, and 150 cases in all have been treated by this drug, although the statistics that I quote have been taken only from patients who have come in during the last three months before writing this paper. The reason of this is because during the first month in which it was used we did not know what was the preferable strength to prescribe and also because it is our custom in introducing any new remedy to begin with what we consider the minimum strength. In using mercurol we began with a quarter of 1 per cent. and gradually increased it to, in some cases, as high as 5 per cent. By this means it was found that whereas the solutions of smaller percentage had little more effect than water, the stronger solutions were so irritating that the patients usually complained of them at first. We therefore concluded that the average strength that could be best borne by the patient was 10 grains to the ounce, or approximately 2 per cent. Since arriving at this conclusion we have had 100 cases on our books the records of which have been carefully kept. It cannot be said positively that all these cases are true cases of gonorrhœa, as only 33 of them were examined for the gonococcus, and of this number in only 30 was it found to be present. In the remaining 67 no bacteriological examination was made, or, if so, no mention was made of it, and the diagnosis was a clinical one. It is probable, however, that nearly all of these cases were cases of the disease in question, as the experienced eye is usually able to distinguish it. One of the above cases was extremely interesting

as no gonococcus could be found in the urethral discharge, although gonococci were present in that of some venereal ulcers situated on the glans. In prescribing the mercurol solution in these cases a 2 per cent. solution was ordered and the patients were directed to inject themselves with it by means of a small urethral syringe after urinating three times a day and to hold in the injection each time for five minutes.

How mercurol acts is still a question. As it is a germicide we would expect it to kill the gonococcus, but we do not as yet know the action of all germicides. It was supposed for a long time that urethral irrigations of a permanganate of potassium solution cured the disease by killing the gonococcus, but investigations later showed that this was not the case, but that they gave rise to a sub-mucous œdema which was an unfavourable culture ground for the bacteria and they ceased to multiply. The clinical reports of our cases, however, show that frequently in two days after beginning the use of mercurol the gonococci could no longer be found in the discharge, while in some cases they continued to be present for more than a month. In other cases the gonococci disappeared in a few days and then returned and continued in the discharge for some time longer, until shortly before it had ceased, or else the patient left the clinic and consequently could not be kept under observation. In one of the cases reported, for instance, the gonococcus disappeared in five days and returned four days later, after which it continued to be present for three weeks, when the patient left the clinic uncured.

In reading over the report of these 100 cases as summed up in the clinic history book I find the following: practically cured in three weeks, 22; cured in four weeks, 28; cases extending over four weeks, 17; cases leaving the clinic after one or two visits, 18; and cases under treatment at the present date, 15. Such a report can only be considered an "off-hand" one and not one of scientific importance. In fact, it is extremely difficult to make good statistics in this line of cases when the patients are all ambulants, as they do not look upon their sickness as anything more than a slight malady of trivial importance. In consequence of this they do not come steadily and do not attend to themselves properly. They often keep away from the clinic for weeks, only returning when the discharge is troublesome, and when it has diminished they often go on a "spree" and indulge in excesses which may bring it back again, as a discharge which has been absent for several days will frequently return after one drink of beer, wine, or spirits. These patients, also, at times leave the city for a few days or weeks, and consequently their treatment is interrupted. For this and many other reasons no sequence of cases is of great value, but rather selected ones, and the selection should be of those that have been under observation from nearly the beginning of the attack to the end, or at least for a more or less protracted period. It would, therefore, make our report of more value to those interested in the treatment of these cases if we were to cut it down. For of what interest is it to know that certain cases have been under treatment for over four weeks, or that they left the clinic after one or two visits, or are still under treatment, as it does not signify that they were cured or ever would have been.

The expression "practically" cured is also an indefinite one, although sometimes we have to take refuge behind it even at the present day. We can now say positively whether a case is cured or not, for in a case of cure the patient should be free from any disagreeable symptoms, should have no discharge, no flakes in the urine coming from the urethra, and no pus or flakes containing gonococci in the urine after massaging the prostate and seminal vesicles. In olden days physicians considered a patient cured when there was no longer any discharge to be noticed, and probably if this method of determination had been carried out in our clinics the percentage of cures would have been greater, and probably 50 per cent. of those coming regularly would have been considered cured in perhaps an average of four weeks; but the result of the treatment of those cases is now more exactly known, and statistics that were formulated before the days of the recognition of the gonococcus and the *tripperfaden* should no longer be quoted. Some of the cases considered cured or practically cured in the report had at the date of the last visit some of the following notes: (1) slight moisture at the meatus, first and second specimens of urine clear, no shreds; (2) slight moisture, urine clear, few shreds; and (3) no moisture, some shreds, urine clear. The first of these would be considered a cure if no pus or gonococci could be found in a smear of the moisture; the second would be considered a cure if no gonococci could be found in the moisture or shreds; and the third would be considered a cure if the shreds did not come from the urethra but from some inflamed surface above it, and there were no gonococci in the shreds. We all know that there can be a urethral moisture dependent purely upon functional trouble, such as spermatorrhœa and prostatorrhœa, and not upon any inflammatory condition, but the microscope can easily differentiate between them. If the urine is thick after the discharge has ceased the urethritis may be confined to the posterior urethra, and flow back into the bladder rather than forward. Such a return of the discharge would probably quickly follow the discontinuation of treatment and the centrifuged urine would probably show gonococci in its sediment. Therefore, in order to draw conclusions of some value we should only consider the cases that have been under treatment for three or more weeks, and leave out all those that made but one or two visits. If these two groups, consisting of 33 cases, be subtracted, and two more because there were no gonococci found present, we would have 65 cases to consider. Ten of these were cured positively in four weeks, that is to say, there was no discharge, the urine was clear and contained no shreds; 15 more cases were cured in six weeks; 20 more were practically cured in four weeks, that is to say, they had no discharge although there were a few shreds still in the urine or some cloudiness. The remaining 20, who were irregular in their attendance, came occasionally to the clinic during a period of from four to eight weeks, and finally wandered away with still some discharge and shreds present. This would make a list of 65 cases in which the results were as follows: Cases cured in four weeks, 10, or 15 per cent.; cases cured in six weeks and under, 15, or 23 per cent.; cases practically cured as there was no discharge though there were some shreds in the urine at the end of from four to eight weeks, 20, or 30 per cent.; cases not cured in from four to eight weeks, 20, or 30 per cent. It would not be fair, then, in considering the use of mercurol in urethritis to draw too hasty conclusions, but to study more carefully this compound in different strengths and mixed in different ways.

It has been noticed that solution of mercurol decomposes in from three to four days, and it therefore will be interesting to ascertain of what value it will be after decomposition has taken place.[1] Is the fluid, then, anything more than ordinary water? or does the precipitate contain particles of mercury which might irritate the urethral mucous membrane? The answer to these questions I cannot give, and will leave them as subjects for further investigation. I will state, however, that in some cases a 1 per cent. solution gave rise to a considerable burning sensation, while in others a 2 per cent. and stronger solution did not. It is probable that this depended a great deal upon the freshness of the solution, or it might have depended upon the part of the bottle from which it was taken—that from near the top being mild, while that from the bottom might have been stronger due to its containing particles of mercury.

One of the most valuable observations that I have made in the reading of this report is the fact that only two cases have suffered from complications, one having developed gonorrhœal rheumatism and the other epididymitis. This in itself would tend to argue much in favour of the use of mercurol, for where is there any other solution or mixture that has been employed in the treatment of these diseases which does not show a greater percentage of complications? When we consider that many writers claim that in 20 per cent. of all cases of urethritis epididymitis occurs, the rate of 1 per cent. which is reported in these cases certainly would seem to argue much in its favour as a harmless yet efficient injection. Another interesting feature is that in only one of the 100 cases was there any marked posterior urethritis, in which case there were the ordinary symptoms of frequency of urination, tenesmus, &c., which did not occur in the other 99. It is probable that in most cases of urethritis—that is, in from 80 per cent. to 90 per cent.—the disease travels down to the posterior urethra, but that in no more than 20 per cent. of them are there any disagreeably acute symptoms, while in this group of 100 cases only 1 per cent. have proved troublesome. Therefore, it would seem that mercurol probably quickly destroys the gonococcus, lessens the severity of the inflammation, and tends to prevent the development of

[1] Since writing this paragraph I have been informed by the manufacturers of mercurol that this difficulty has been obviated, and that the solutions are now more stable.

complications, but does not possess the power of entirely stopping the discharge in all cases; and it would therefore seem that after the discharge has developed into a moisture and gonococci are no longer found in it, or in urethral shreds in the urine, that it might be better to change from a mercurol solution to a mild astringent one.

In conclusion, it might be well to say from a comparative study of the different methods of treating gonorrhœa that it would seem that mercurol is an advance on the old methods of treatment by balsamics and astringent injections.

New York.

## BERI-BERI.

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FOR several years past it has been my lot in the course of ordinary professional work to have rather exceptional opportunities of observing and treating this somewhat obscure disease, and in view of the now not infrequent discussion as to its etiology, symptoms, and real character the following notes may be of some interest and possible value. When met with in Falmouth the disease is, as a rule, in an advanced state, and since we have generally only the comparatively uneducated observations of a captain or mate, or even fellow-seamen, on which to rely it is difficult to get a correct knowledge of its early history. On analysis of the facts that have come under my notice one of these two following conclusions is apparent—viz., (1) the beri-beri which reaches us is not the same as the beri-beri of the Malay Peninsula and elsewhere; and (2) beri-beri is not epidemic. Personally I incline to the former belief. I intend discussing the disease as it comes to us generally on vessels that have had a lengthy voyage and have passed through the tropics. Traders in the colder climates are far more liable to scurvy than to beri-beri, though, as is well known, the crews of American whalers are by no means free from attack. I have gathered that from 45 to 70 days out is the time when the disease first shows itself; the statement of captains that it seldom appears in the tropics but soon after leaving them is probably of no moment and only points to its slow onset. Another fact in support of an insidious attack is the statement that the manifestation of the disease is almost coincident with the appearance of the rice insect which is first seen in from 50 to 70 days.

Many theories have been advanced and all of them seem plausible enough till tested by the light of practical experience. Cornellisen and Sugensya go so far as to assert that the cause is a septic organism affecting clothes and woodwork. Now, during all the years that cases of beri-beri have been landed at the port of Falmouth no preventative means have ever been taken to check its spread. The patients have been admitted into the general wards of that most worthy institution the Royal Cornwall Sailors' Home, and not a single fresh case has occurred from infection. Then, again, ships that have landed sufferers have been known to go for years without a recurrence of the disease. For example, in 1896 a Norwegian barque was in at Falmouth with some of the crew down with beri-beri. She called again in December, 1899. She had been quite free from beri-beri in the long interval. Beyond the removal of the sick and the cleansing of the water-tanks nothing had been done on the occasion of her first call. Strange to say she was 120 days home on her second voyage from the same port whence three years before she had arrived with the disease.

To take another example, the German barque *Spica*, from Punta Arenas, put in here on Nov. 13th, 1897, with one case on board. I learnt from the patient who was landed here that he shipped at Punta Arenas where he had been in hospital to be treated for this very disease. He had lived and slept in the forecastle with the other sailors, all of whom were perfectly well on arrival here. I could give similar instances, but have, I think, sufficiently discounted the infection theory. Anderson attributes the cause to bad hygiene. This seems scarcely probable, as with very few exceptions it will be seen from the chart appended that the ships upon which cases of beri-beri have occurred were in a good sanitary condition although the ventilation might have been improved. The bilge-water, galleys, forecastle, and water-tanks were all in a satisfactory state, even when the majority of the crew were stricken down. I am certainly disposed to think that bad sanitation facilitates an outbreak of the disease by lowering the general health, but I do not think it causes it.

The captain of the Norwegian barque *Lotus*, 150 days home from San Juan del Sur, records that when in 33·34 south latitude the vessel was becalmed in a black fog; 14 days afterwards beri-beri appeared. In such a latitude the fog might have been of a malarial nature, and the incident might be quoted in evidence of Simmons's and Schebe's theory, but the several captains I have questioned merely look on this as a coincidence and can give no similar experience.

Ogata and Lacerdas suggest bad rice. To this supposition I do not attach much importance because (1) very little rice is eaten; (2) the captains invariably assert that the rice is perfectly good; (3) on examination I have always found it excellent on ships where beri-beri has broken out; and (4) out of 51 ships arriving here during 1899 with rice cargoes only four had cases of beri-beri on board. Pekelharing, Ogata, and Taylor all advance the theory that the anæmia is due to a micro-organism giving rise to a poison acting like muscarine and so causing acidity and disordered action of the sweat glands. Great authorities as these three undoubtedly are they nevertheless fail to find the same micro-organism. The first-named attributes the disorder to a diplococcus, Ogata to a bacillus, and Taylor to a spirillus. Other well-known authorities have failed to find any micro-organism at all.

In face of these different results of independent investigation it is hard to discriminate. Pekelharing says that diplococci are associated with the soil and overcrowded dwellings. Taylor maintains that spirilli are found in the soil, bad fish, and bad rice. These, though, compare unfavourably with the miasma theory of Simmons and Schebe. Let us take it for granted that the three authorities mentioned have found three separate micro-organisms which will produce the same effect, and also that the said organisms work in crowded dwellings and contaminated soil, and it obviously follows from the foregoing remarks that the incubation period is from 45 to 70 days. Now in comparison with enteric fever (from 5 to 21 days), malaria (from 5 to 21 days), and yellow fever (from 1 to 18 days), such a lengthy period seems unlikely. Then, again, how can this case be accounted for? A man brought home by the German barque *Spica* developed the disease on the voyage out from London before he could possibly have contracted it at any port of call. Unfortunately I could get no authentic information as to the food and sanitation of the vessel except that lime-juice was served out five days after leaving London.

As I have given my reason for doubting the theories of others it is right that I should suggest a cause myself. On British ships each man is supplied with one gill of vinegar a week, or half an ounce per day, and in the tropics lime-juice is also issued at the captain's discretion, failing the presence of a medical officer. Each man must have six ounces per week, making one and a half ounces of acidity per diem. Now when we consider what the effect of the tropical weather must have on tinned and salted meats, fruit, and vegetables, it makes me shudder to think of the decomposition and the manufacture of ptomaine which must go on—that is to say, during prolonged voyages of sailing ships through the tropics—and what a chance any alkaloids must have of asserting themselves in the disarranged stomachs of sailors who have been cooped up in a limited space on none too good a diet, who have had to drink tanked and often impure water, and whose bodies have been carefully prepared for fermentation and other disorders with vinegar and lime-juice. Let it not be thought that I am overstating the case. I am not. I merely give facts.

Now supposing our own toxic products are not ample enough to allow of this—which, by the way, is quite contrary to Sir T. Lauder Brunton's teaching—we might argue that the toxic alkaloids, such as muscarine, neurine, and neuridine, that one would be likely to absorb from such a diet as the ordinary sailor has might gain the upper hand. Pekelharing says it is due to a diplococcus acting like muscarine. Why not muscarine or one of its allies? We are well aware that acids taken in continued doses will disarrange the natural gastric secretion and cause fermentation leading to the production of gases and other noxious products as well as acids such as acetic, butyric, and lactic. Having established this fact we then come to consider the point of auto-infection. We are now comparatively alive to the important

results produced by the absorption from the intestinal canal of poisonous matters introduced from without, and we ought to be equally ready to appreciate the absorption by the intestinal canal of substances generated within, either by fermentation or imperfect digestion. It has been proved by recorded observations that sulphuretted hydrogen may be produced in the digestive tract, and Dremarquay has shown that it is very quickly absorbed into the blood. We are also aware that sulphuretted hydrogen will seize upon, and combine with, the oxygen, leaving the reduced hæmoglobin to be dissolved out of the corpuscles and diffused through the degenerated blood, both these conditions if carried to any extent being incompatible with life. Again, the citric acid of the lemon and the diluted acetic acid are known to have a peculiar deoxidising effect on the blood by converting the blood in part into a carbonate at the expense of the hæmoglobin. Thus $2K_3C_6H_5O_7 + O_{15}$ (from hæmoglobin) $= 3K_2CO_3 + 9CO_2 + 5H_2O$. Having reached this stage common sense must open our eyes to the fact that the lessening of the resistance to auto-infection is increased to a most dangerous extent. By this I mean the elimination of the toxic products by the excretory organs and the destruction of the said products by oxygenation, which consists in a continuous combustion of the leucomaines and the other animal alkaloids by the oxygenation of the blood in whose current they are consumed and burned.

As regards the symptoms, there is but little chance of gaining any definite or reliable information of the early history of the disease because the stories of the patient and his captain seldom agree. During the first week or few days the sufferer complains of a general malaise, loss of appetite, headache, &c. There is little, if any, rise of temperature. One case of 100° F. and one of 99° F. have been recorded by captains who kept a chart. I have myself taken the temperature in between 60 and 70 cases, all in a somewhat advanced stage, and I have come to the conclusion that a rise of temperature is an exception and not the rule. The malaise is generally followed by a strange loss of power in the lower limbs and complained of at first as a stiffness. This loss of power slowly increases, so that the men have to hobble about as best they can with the aid of ropes, deckhouses, hatches, &c. About this time, too, in about 50 per cent. of the cases a numbness of the lower extremities is often felt and a tickling or pricking sensation is complained of. These symptoms are generally followed by an œdema of the dorsum of the foot or ankle which spreads slowly up the limbs to the trunk. I once saw a patient who was simply water-logged. He would "pit" anywhere below the neck, but his face and head were quite natural. In the majority of cases the feet and legs are attacked first, but I have seen anasarca of the scrotum, abdomen, and chest with no œdema whatever in the legs. Many cases even have no œdema at all and are evidently the dry beri-beri of some authorities who state that the patients

A CHART ILLUSTRATING FEATURES IN CASES OF BERI-BERI ON BOARD 20 SHIPS.

| Name of ship. | Country. | Port left. | Days on voyage. | Cargo. | Number of crew. | Number of cases. | Number of deaths. | Condition of water on board. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| 1896. | | | | | | | | | |
| June 2nd, *Petrus.* | Norwegian. | Buenos Ayres. | 87 | — | 15 | 4 | — | ? | Dropsy of lower extremities. Probably beri-beri. South of the tropics. |
| August 20th, *Areola.* | ,, | South America. | 106 | — | 13 | 1 | — | ? | Anasarca. In the tropics. |
| August 22nd, *Freia.* | German. | Punta Arenas. | 185 | — | 21 | 2 | 1 | — | Provisions short. |
| Oct. 18th, *Congo.* | Norwegian. | Bangkok. | — | — | 12 | All hands. | 1 | Good. | North of the tropics. |
| Nov. 18th, *Vigar.* | ,, | Yucatan. | — | Logwood. | 16 | 4 | 2 | Bad. | Provisions short. In the tropics. |
| Nov. 23th, *Peer Gynt.* | ,, | Tobasco. | 105 | — | 10 | 1 (captain). | — | — | Sanitary condition good. |
| Dec. 13th, *Lodestar.* | English. | Rangoon. | 195 | Rice. | 20 | All. | 3 | Good. | Food and water good; sanitary condition good. In the tropics. |
| 1897. | | | | | | | | | |
| Feb. 21st, *Argentina.* | Norwegian. | ,, | — | Teakwood. | 11 | — | 1 | ,, | Sanitary condition good. In the tropics. |
| April 11th, *Taurus.* | ,, | Black River. | 40 | Logwood. | 10 | 1 | — | ,, | Sanitary condition good. |
| August 8th, *Haubet.* | ,, | Yucatan. | ? | ,, | 15 | 1 | — | ,, | Sanitary condition good. In the tropics. |
| Nov. 15th, *Spica.* | German. | Punta Arenas. | 190 | Cedar-wood. | 19 | 1 | — | ,, | Sanitary condition good. Nearly on equator. |
| Nov. 21st, *Agatha.* | Norwegian. | Pensacola. | — | Dyewood. | 10 | 3 | — | Bad. | Sanitary condition good. Did not pass through the tropics. |
| 1898. | | | | | | | | | |
| Jan. 19th, *Waldemar.* | ,, | Yucatan. | 122 | Logwood. | 14 | 3 | — | ,, | Captain died in hospital in the tropics. |
| April 7th, *Werner.* | ,, | ? | 142 | Teakwood. | 12 | 8 | 1 | ,, | Food good, tinned, and plentiful. |
| August 6th, *Phez Ugland.* | ,, | Bassein. | — | Rice. | — | 10 | 1 | Filthy. | Rice insects appeared about 30 days out when the first man fell sick. In the tropics. |
| Oct. 11th, *Copernicus.* | German. | ? | — | Rice. | 18 | 4 | 2 | Good. | Ship full of the rice insect; appeared 40 days out, as did sickness. |
| Nov. 18th, *Janette François.* | Dutch. | Java. | ? | Sugar. | 23 | 7 | 2 | ,, | In the tropics. |
| 1899. | | | | | | | | | |
| March 4th, *Lotus.* | Norwegian. | San Juan del Sur. | 152 | Cedar. | 12 | 3 | — | ,, | Black fog, 33 or 4 S. latitude; first disease broke out 14 days after. In the tropics. |
| August 28th, *Belgon.* | ,, | Lagoona, Mexico. | ? | ? | 10 | 2 | — | ,, | Port not in the tropics, but ship passed through the tropics. |
| Sept. 16th. *Taurus.* | ,, | Casabella. | 50 | Resin. | 10 | 4 | 4 | Bad. | In the tropics. |

suffer severely from neuritis. When the œdema subsides the true state of the neurotic mischief becomes manifest; the legs are most sensitive to tactile impression, and have a dull, aching pain which the sailors bitterly complain of.

To tabulate further and general symptoms for the sake of brevity and conciseness, the tongue is generally clean, pale, flabby, and frequently tooth-indented; the gums are pale, not spongy or swollen; the voice is natural; the breath is offensive, as from an ordinary disturbed stomach; the bowels are as a rule freely open (in a few instances they are irregular); and the urine in amount is normal and its colour is bright. I have tested 20 samples and found albumin in two of them. A colleague of mine had one bad case of albuminuria to treat. With regard to the sweat glands, Pekelharing speaks of the disorder of these glands. I believe they are active in the early stages as I have had many complaints of cold sweats suffered then. The pulse is full, strong, and slightly quickened, ranging from 90 to 120. The respiration is quickened, but inspiration and expiration are usually properly proportionate. There is palpitation of the heart and epigastric pulsation is felt. The commonest forms of cardiac lesion in my experience have been dilatation of the left ventricle and mitral regurgitation, though I have heard murmurs over most of the orifices and bruit of the carotids. The pupils react normally. I have not come across a case having Argyll-Robertson's pupil. The smell is normal. The sphincters are unaffected. The deeper reflexes in well-marked cases are lost but I have got distinct knee jerk and ankle clonus in mild cases. The extensor muscles quickly atrophy. Foot-drop is common and gives the patient a characteristic gait; he lifts his knees high and seems to drop his foot down anywhere and with no apparent control. I have not seen more than one well-marked instance of wrist-drop and but a few slight ones. I cannot say if Romberg's sign is present or not, but closing the eyes and turning will ensure a fall, probably from weakness.

In conclusion, I do not for a moment believe that beri-beri, as we know it, is infectious or contagious; in fact, I do not consider that what we in England call beri-beri *is* beri-beri—at least, not such as is met with in foreign countries. I put forward a theory that the disease that reaches us is due to an alkaloidal poison fanned into flame by the disarranged digestion of sailors who are kept on improper diet, and in that case by properly dieting the vessels and supplying the captains with iron and digitalis tabloids the disease in all probability would be reduced to a considerable extent if not stamped out. The necessity for the proper dieting of persons on board vessels is of course no original suggestion of mine; it has answered admirably in the Japanese navy and I see no reason why the British sailor should not have a similar fortunate experience.

Falmouth.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A FATAL CASE OF POISONING BY PARALDEHYDE.

BY LOVELL DRAGE, M D. OXON., M.R.C.S. ENG.

AS I believe that there is no case on record of death from poisoning by paraldehyde I send the following for publication in THE LANCET, having held an inquest upon the body of a woman who died from this cause.

The history of the patient was that she was 46 years of age and had suffered for some years from chronic emphysema, chronic bronchitis, and heart disease. She had been in the habit of using drugs of various kinds to excess. She had recently returned home from abroad, and on the day when a nurse took up her duties there was in the house a three-ounce bottle of paraldehyde besides another bottle containing six ounces of the drug. According to the nurse's statement, she asked the medical man in attendance how much of this drug was to be administered, and the order was two teaspoonfuls in a wine-glassful of water thrice during the night. However, in the course of the 24 hours five doses of two drachms each were administered. The patient had a constant craving for the drug. At the beginning of the next 24 hours one teaspoonful was given and this was repeated in about four hours' time and again after another four hours had elapsed. Roughly speaking, from midnight to midnight 10 drachms of the drug were used and in the next nine hours three drachms. I am inclined to think that possibly nearly twice as much was really given, but this is only a guess. The symptoms noted by the nurse were restlessness and some degree of delirium and constant craving for the drug.

About two hours after the nurse had given the last dose the patient possessed herself of another bottle of the drug containing at least six ounces. The bottle had a label pasted on it; on the label was printed the name of a respectable firm of drapers in London and the name of a man who was presumably a qualified chemist. Nothing but the word "Paraldehyde" was written on the label. The nurse estimated the quantity of the drug consumed by the patient at about two ounces. After the patient had taken this the nurse found on returning to the room that her condition was serious and she sent for a medical man. The practitioner who was in attendance and who had seen the patient on the arrival of the nurse was not at home, and his assistant, who came to the inquest, attended instead. This gentleman noted the following symptoms: unconsciousness, profuse perspiration, rather deep cyanosis, intermittent pulse, and shallow breathing, about normal in time. He administered strychnine hypodermically and some improvement in the patient's condition took place, but death occurred about three hours after the lethal dose was taken. Unfortunately, the nurse's statements, except as to the condition of the patient, were for the most part uncorroborated. According to this statement 13 drachms of the drug were administered in the course of 33 hours; at all events, enough was administered to produce the mental condition associated with the action of the drug before the patient herself took the fatal dose which was possibly less than the amount estimated.

Binz, in his work on Pharmacology, mentions that according to the German Pharmacopœia 85 drops are the maximum single dose and 170 drops the maximum quantity to be given in 24 hours. Having used the drug in my own practice to a considerable extent these doses are, in my opinion, correct, and I venture to call the serious attention of the members of the medical profession to the deplorable condition of affairs illustrated by the facts of this case. It must be common knowledge that drugs of all degrees of potency can be obtained by the ignorant in unlimited quantities from all sorts of sources. Nurses not infrequently bring them when they come into the houses of sickness and recommend them to the patients whom they come to nurse. The habit of taking drugs, especially those which act on one or other part of the nervous system, is on the increase, and I ask in all seriousness, Are the members of the medical profession sufficiently careful in their methods of prescribing, and especially with reference to the ordering, of proprietary remedies and drugs in the form of compressed lozenges and other articles of that genus? The fact is, so many lethal drugs, or drugs that may be lethal if not prescribed with adequate precaution, are introduced and advertised as harmless that it behoves us to proceed warily.

Hatfield.

### A CASE OF PHOSPHORUS POISONING.

BY WILLIAM E. NEWEY, M.R.C.S. ENG., L.S.A.

THE following case may prove useful and interesting some of the readers of THE LANCET. On August 11th I was called to see a man who was suffering from vomiting and intense burning pain in the stomach and bowels. His history was that on the 7th, when "in drink," he had swallowed three-pennyworth of rat-killer. Immediately after swallowing it he complained of violent pain in the stomach and sickness. He was given salt and hot water, after which he was very sick and vomited freely and expressed himself relieved. On the next day he was a little better, although he felt far from well; he, however, dressed himself and walked about. On the 11th he was taken much worse and I was sent for. When I saw him his temperature was normal, he was quite conscious and coherent, and his pulse was 90. He complained of thirst, constant vomiting, and great pain in the stomach and abdomen. An examination of the vomit proved it to consist wholly of altered blood of a very dark colour. His stools also were dark and pitchy in character. He was given the usual remedies, but they were of no avail,

and he quietly sank and died on the following Tuesday, the 14th, having lived exactly a week after swallowing the poison. The vomiting of dark-coloured blood continued up to the time of his death.

A post-mortem examination was made 24 hours after death. The weather was very warm but there were no signs of putrefaction. Very slight rigor mortis, if any, was perceptible. The body presented a most curious and interesting appearance. The whole of the neck in its entire circumference, back, and sides bore the appearance of having been stained in a deep solution of Prussian blue, the colour being most intense and brilliant; it was not mottled but uniformly stained. The arms and legs showed an icteric tinge; their superficial veins looked as though they had been injected with a solution of Prussian blue paint and were most beautifully mapped out. On opening the body the chief points noticed were as follows. The stomach contained half a pint of liquid blood; it was deeply coloured blue; it showed softenings and ulcerations in patches, and it was thickened in other parts. The whole of the intestines showed signs of an irritant poison; they were deeply pigmented with the colour, and the contents were dark and pitchy. The transverse colon was intensely inflamed and the fat of the great omentum showed bright extravasations of blood and was most striking in appearance. The heart, liver, and kidneys showed signs of commencing fatty degeneration. The lungs and the liver were deeply coloured blue. The brain was rather anæmic, soft, and almost diffluent in parts.

Dudley.

## MULTIPLE WARTS CURED BY REVACCINATION.

BY J. DIBBLE STAPLE, M.R.C.S. ENG., L.S.A.,
PUBLIC VACCINATOR FOR THE ASHLEY DISTRICT OF THE BRISTOL UNION

THE relatives of a girl, aged 15 years, consulted me in reference to a number of warts which she had on both of her hands. She had herself counted 94 on the right hand. Her parents had tried several "popular" remedies but with no satisfactory result. Having recently read in one of the medical journals that a number of warts had been cured in a patient who had been revaccinated, I determined, with the consent of the relatives, to give this treatment a trial. I revaccinated the patient on June 1st. The operation was successful, but no effect was produced upon the warts until seven weeks after, when, to use the description of the patient, the warts gradually "disappeared," leaving temporary white spots, and when I saw the patient on August 30th she had no trace of them.

Bristol.

VACCINATION IN MERTHYR TYDVIL.—At the meeting of the Merthyr Tydvil board of guardians held on Sept. 1st it was reported that for the last six months of 1899, in the various districts of the union, there had been 2182 births. Of these children 1484 were successfully vaccinated, three were insusceptible, 437 died unvaccinated, and 117 were medically postponed. There were 12 cases of conscientious objection, and 85 remained unaccounted for. The cases unaccounted for occurred in Merthyr and Gelligaer, and the clerk was instructed to write to the vaccination officers of these respective districts calling their attention to the large proportion of these cases.

FOREIGN UNIVERSITY INTELLIGENCE.—*Athens:* A chair of Hygiene and Bacteriology has been created to which Dr. Savas, a military staff surgeon, has been appointed.—*Berlin:* Dr. Emil Grunmach has been promoted to an Extraordinary Professorship of Medicine.—*Bologna:* Dr. Nicola Giannettasio has been recognised as *privat-docent* of Clinical Surgery and Operative Medicine.—*Greifswald:* Dr. Hugo Lüthje of Marburg has been recognised as *privat-docent* of Internal Medicine.—*Halle:* Dr. Fritz Haasler, *privat-docent*, has been granted the title of Professor.—*Heidelberg:* Dr. Fürbringer of Jena has been appointed to succeed Professor Gegenbaur in the chair of Anatomy.—*Munich:* Dr. Moritz Hofmann has been appointed to the chair of Forensic Medicine.—*Rome:* Dr. Lorenzo Bonomo has been recognised as *privat-docent* of Medical Pathology, and Dr. Mario Ponticaccia as *privat-docent* of Pediatry.—*Strasburg:* Dr. Edwin Faust has been recognised as *privat-docent* of Pharmacology.—*Utrecht:* Dr. Ziehen of Jena has been appointed to the chair of Psychiatry.

# A Mirror
OF
# HOSPITAL PRACTICE,
## BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propria collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.**

## WESTMINSTER HOSPITAL.

### TWO CASES OF GANGRENE OF THE LUNG TREATED BY PARTIAL EXCISION.

(Under the care of Dr. W. MURRELL and Mr. WALTER SPENCER.)

THE rarity of gangrene of the lung is indicated by the statistics of Waller[1] who in 2663 post-mortem examinations, including 895 cases of pulmonary disease, found only two of gangrene—i.e., less than 0·1 per cent. of the whole number; but Boudet[2] in 511 post-mortem examinations found nine cases of gangrene. The value of operation in pulmonary gangrene is undoubted. Reclus[3] says that in cases treated by operation the mortality is only 25 per cent., while in cases treated medicinally it is 75 per cent.

CASE 1.—A labourer, aged 32 years, was admitted into the Westminster Hospital on June 13th, 1900, complaining of pain in the right side which was increased by coughing. He stated that he had been perfectly well until three months previously when he contracted a cough which was attended with much expectoration. He had lost flesh and his appetite was bad. On admission it was found that there was dulness all over both backs with scattered moist sounds. At the right base posteriorly the dulness was more intense and the respiratory sounds were absent although friction could be detected here and there. The heart sounds were normal. The temperature ranged from 99° F. in the morning to 101° in the evening. The expectoration was of a peculiarly offensive character and the odour, in spite of the free use of antiseptic inhalations, could be detected in the corridors outside the ward. There was no doubt that the base of the right lung was gangrenous. The patient continued to lose flesh, was unable to take nourishment, and was in a critical condition. On the 28th the temperature ranged from 98·2° in the morning to 101·4° in the evening. The pulse was 112, feeble, and easily compressed and the respirations were 36. The expectoration, which could be separated into the typical three layers, contained streptococci and sarcinæ but no tubercle bacilli. The specific gravity of the urine was 1020; it was acid and contained neither sugar nor albumin. On June 29th Mr. Walter Spencer resected the seventh rib on the affected side and removed a large quantity of fœtid pus with portions of gangrenous lung. The pulse on the evening of the operation was 118 and the respirations were 56. The following night the temperature was 100°, the pulse was 134, and the respirations were 49. The patient rallied for a time, but died on July 3rd.

*Necropsy.*—At the post-mortem examination the following appearances were found. There were adhesions in both pleural cavities, but most extensively on the right side. On the right side behind the pleura was gangrenous and sloughy over a space as large as a man's hand. The upper lobe of the right lung was normal throughout but œdematous. The middle and lower lobes were coherent and in the lower part of the latter there was a gangrenous focus of the size of a Tangerine orange. Around, the lung was semi-solid with a tendency to break down. The left lower lobe showed a small cavity in the upper part of a distinctly pyæmic character. There was no evidence of tuberculosis in the lungs. Around the cavity in the left lung the pulmonary tissue was intensely œdematous and looked as if it were in a state of grey hepatisation, but it still contained air as indicated by the fact that some portions did not sink in water. The larynx, trachea, and bronchi were full of blood-stained mucus. There

[1] Prager Vierteljahrschrift, 1846, Band xi., p. 63.
[2] Archiv Générales, 1843, vol. iii.
[3] Revue de Thérapeutique Médico-Chirurgicale, Nov. 1st, 1836.

was no dilatation of the bronchial tubes. The bronchial glands were considerably enlarged.

CASE 2.—A married woman, aged 28 years, was admitted into the Westminster Hospital on June 2nd, 1900, suffering from pneumonia involving the base of the right lung. Her family history was not good; her father, sisters, and one brother had died from chest complaints which were probably tuberculous in origin, although the evidence on this point was inconclusive. She was taken ill suddenly on May 25th; there was no rigor, but there was acute pain on the right side which confined her to bed. On admission her temperature was 101·4° F. and on the following evening it was 102·8°. The expectoration was glutinous and rusty and it contained no tubercle bacilli. On examination it was found that there was deficient movement over the whole of the right side. There was a patch of dulness over the fifth and sixth ribs laterally and posteriorly; the dulness extended from the base of the lung to as high as the angle of the scapula. Vocal fremitus was absent and no respiratory sounds could be detected at the base, but in the upper part of the lung there were abundant moist râles. There were no friction sounds and the heart was not displaced. The left lung was apparently normal. No tubercle bacilli were found in the sputum. The urine had a specific gravity of 1026, was acid, and contained some albumin, but no sugar. The patient had no crisis and the temperature usually reached 103° in the evening. On June 18th it was noticed that dulness at the base of the right lung as high as the angle of the scapula still continued. Over this area vocal fremitus was absent and the breath-sounds were only faintly audible. Whilst the patient was being percussed she had a violent fit of coughing and expectorated a considerable quantity of thick yellow matter having a distinctly gangrenous odour. On the 24th, there being no improvement in her physical signs, the needle of a hypodermic syringe was inserted and some yellow offensive pus was withdrawn. On June 26th, under nitrous oxide gas and ether, Mr. Walter Spencer removed a portion of the eighth rib in the post-scapular line on the affected side. A cavity was opened which involved the base of the lung and communicated with a bronchus full of pus and gangrenous sloughs. The sloughs were drawn out, iodoform emulsion was injected, and an iodoform plug was inserted. In the evening the temperature was 100°, on the following day it was 100·4°, and on the third day 101·2°. The wound gradually healed and the discharge became less, but the progress towards recovery was slow. On July 26th tubercle bacilli were found in the expectoration in small numbers. There was a sinus about four inches in length and half an inch in diameter. This should have been opened up, but the patient declined a second operation and was sent to a convalescent home.

*Remarks by* Dr. MURRELL.—Cases of gangrene of the lung are not common. I have looked through the records of the hospital for a period of ten years and find that during that time 10,000 medical and about the same number of surgical patients have been treated in the wards. I have consulted the records of 1400 post-mortem examinations made during the last seven years. Out of this large number of cases I find only one of gangrene of the lung. I do not attach much importance to these figures, for there may have been many other cases tabulated under the name of the primary disease. Still the fact remains that gangrene of the lung is not a common disease. Some people would go even further and say that it is not entitled to be regarded as a disease at all, seeing that it never occurs as a primary affection. It may follow in the wake of acute lobar pneumonia and less commonly of phthisis. It may be lighted up by the fœtid contents of a bronchiectatic cavity or it may be due to embolism or thrombosis of the pulmonary artery. It may follow aspiration pneumonia and is sometimes the result of the inspiration of septic material originating in a cancer of the lung or larynx. Sometimes there is a direct invasion of the lung by contiguous diseases such as cancer of the œsophagus or of an abscess or suppurating hydatid. It may be a complication of pyæmia, otitis media, puerperal affections, or even bed-sores. In exceptional cases it is met with in the course of convalescence from long protracted illnesses, such as enteric fever. These exciting causes are common enough, and yet, as we have seen, gangrene of the lung is not common. It is a somewhat curious coincidence that these two cases should have occurred concurrently. In the majority of cases there is some predisposing cause, and this may be senile degeneration, marasmus from one of the intoxications, such as lead or mercurial poisoning, or alcoholism, or syphilis, or diabetes mellitus. In neither of these patients was there apparently any definite predisposing cause. The man was in the prime of life and there was no history of any previous illness. He was not alcoholic and the urine contained neither sugar nor albumin. In the case of the woman there was albumin in the urine, but it was small in quantity and disappeared before she left the hospital. The gangrene may be general, affecting the whole lung, but commonly there are only one or two necrotic foci. As a rule the gangrene is limited in extent, but rarely by a separating capsule. The symptoms are usually preceded by the symptoms and physical signs of the disease to which it is secondary. For example, it may begin with the physical signs of pneumonia, or phthisis, or malignant disease of the œsophagus. The characteristic sign is the intensely fœtid odour of the breath and expectoration. There is a fœtid odour in bronchiectasis, in advanced phthisis, and even in chronic bronchitis, but it never has the peculiar offensiveness of gangrene of the lung. In gangrene the expectoration contains not only the débris of the lung tissue but not uncommonly fragments of the lung itself. The general symptoms are a moderate degree of fever, a quick pulse and great depression, and constitutional disturbance. Medical treatment is of little avail, although antiseptic inhalations of carbolic acid, creasote, guaiacol, eucalyptus, and especially formic aldehyde may mask the smell. The only real relief and the only hope of recovery is the removal by surgical means of the gangrenous portion of the lung. This is the treatment which has been adopted in these cases.

## LIVERPOOL WORKHOUSE HOSPITAL.

### TREPHINING AND DRAINAGE IN AN APPARENTLY MORIBUND CASE OF STATUS EPILEPTICUS; RECOVERY.

(Under the care of Dr. W. ALEXANDER.)

IN the following interesting case the epileptiform convulsions appeared for the first time at 36 years of age and this fact was in itself very suggestive of a definite cerebral lesion, especially as there was a history of head injury. The affected area was localised by the right-sided twitchings and the correctness of the diagnosis was proved by the success of the treatment. It is probable that several distinct conditions are included under the term "status epilepticus" and only some of these are amenable to surgical interference. For the notes of the case we are indebted to Dr. W. T. D. Allen, senior resident medical officer.

A woman, aged 36 years, was admitted into the Liverpool Workhouse Hospital on July 4th, 1900, in a semi-unconscious state, suffering from very severe epileptiform convulsions. From her previous history the patient appeared to have been in good health until the previous February except for occasional attacks of articular rheumatism. She had been very much addicted to drink and in February she was taken into custody for this cause, and then it is stated that a policeman struck her on the head with his bâton. Her head became swollen and she was treated in the prison hospital. After two weeks in prison she was transferred to the workhouse hospital where she had an epileptiform fit which lasted for 15 minutes. The convulsions involved the limbs on both sides of the body and the patient was in a rather stupid condition for a day and a half after the fit. She made a gradual recovery and was able to resume her occupation in 10 days. She had never had a fit of any kind previously to this time. During the next four months she was in fair health except for a pain in the head which was at times very severe. On July 1st the convulsions began again and continued at very short intervals for four days until she was taken to the workhouse hospital. On admission there the patient was semi-unconscious and during 20 hours had over 40 fits. These began with twitching of the muscles of the lower part of her face on the right side and then spread to the right hand, arm, and leg. The corneal reflex was absent and the pupils were directed towards the right side. Each fit lasted for three or four minutes. On July 5th the patient, who appeared to be moribund, was trephined by Dr. Alexander over the upper motor area on the left side. The dura mater bulged into the opening when the piece of bone one inch across was removed. The dura mater was opened; the cerebral veins were much enlarged and lay bathed in a layer of fluid a quarter of an inch thick. The

fluid was held in position in the meshes of arachnoid and pia mater and when the meshes were pricked the fluid ran away in a clear sparkling stream. As the brain seemed to be healthy beneath and there were no signs of any gross lesion such as cerebral tumour or bone injury or disease, a double cyanide gauze drain was placed in contact with the opening in the membranes and the rest of the wound was closed. After the operation the patient had several severe fits and these continued for three days, but gradually diminished in severity and frequency. Since then she has had no return of convulsions and the pains in her head, which were at first troublesome, have passed away. The scalp wound is now healed and the patient is quite well and strong.

*Remarks by* Dr. ALEXANDER.—In the presence of deep unconsciousness in status epilepticus the medical man often feels quite helpless. Bleeding is often useless because the blood will not flow and oxygen or chloroform makes no impression. In such cases the compressed cerebral hemispheres may be relieved, either, as in this case, by drainage of the serous effusion that sometimes exists or in others by the venesection of the congested cerebral veins. The operation itself under aseptic precautions is so harmless that its performance is more than justified under such serious conditions as the above case presented.

## GENERAL HOSPITAL, BIRMINGHAM.

### A CASE OF THROMBOSIS OF THE LEFT VENTRICLE WITH MULTIPLE EMBOLI AND GANGRENE OF THE LEGS.

(Under the care of Mr. T. F. CHAVASSE.)

FOR the notes of the case we are indebted to Mr. F. V. Milward, resident surgical officer.

The patient was a countryman, aged 57 years; he was well nourished and to all appearances must have been robust until the present illness commenced. He stated that he had never been ill in his life. Three weeks before his admission to hospital on July 12th, having previously had some indefinite pains in his legs, he noticed that his right foot had become cold in the night. Blueness and mottling succeeded the initial pallor and he was brought to the hospital with well-marked gangrene of the right foot. There was no line of demarcation, nor did one form subsequently, and putrefactive processes never became much advanced, the skin being free from blebs. Constitutional disturbance was more severe than the local condition seemed to warrant. The patient was apathetic, the pulse was very feeble, the tongue was furred, and diarrhœa was present. The urine contained a cloud of albumin and many granular casts, but no sugar. No abnormal sounds could be detected either in the heart or the lungs. Two days before death gangrene made its appearance in the left foot and leg, and this, together with the cardiac depression and the presence of albumin in the urine, put all idea of surgical treatment out of the question. The patient gradually sank and died on the 16th from exhaustion.

*Necropsy.*—A post-mortem examination made on the 17th revealed the following appearances. There were well-marked gangrene of the left foot and leg and early gangrene of the right foot. The heart weighed 14 ounces. The left ventricle upon being opened was found to contain an ante-mortem clot of the size of a hen's egg; it was somewhat pyriform in shape, the base being attached to the apex of the ventricle and obscuring the posterior set of musculi papillares and chordæ tendineæ, so that its apex almost touched the posterior flap of the mitral valve. There was some chronic thickening of the aortic and mitral cusps, but there were no recent vegetations. The kidneys contained numerous infarcts of all sizes and in various stages of organisation. The spleen (five ounces) was converted entirely into one large infarct. There was a small and quite recent embolus in the left middle cerebral artery. An examination of the vessels of the limbs showed complete thrombosis of the veins in the left leg from the middle of the thigh downwards. The thrombus was becoming organised. There was also thrombosis of the left posterior tibial artery and of the right popliteal artery. No emboli were discovered in either vessel, but they had probably become indistinguishable through subsequent organisation of the thrombi.

# Reviews and Notices of Books.

*The Medical Diseases of Childhood.* By NATHAN OPPENHEIM, A.B. Harv., M.D. Coll. P. & S., N.Y., Attending Physician to the Children's Department of Mount Sinai Hospital Dispensary. Illustrated. New York and London: Macmillan Company. 1900. Pp. 653. Price 21*s.*

THE object of the author of this work has been to write a book on the diseases of children which will tend to promote a greater use of logic and a lessened reliance upon empirical methods than have formerly been common. He quite rightly draws attention to the fact that the tendency of our thought in the present time is in the direction of the accurate recognition of abnormal conditions, but we cannot agree with his deduction from this statement. He says: "For when this is accomplished (viz., the accurate recognition of abnormal conditions), the treatment, so far as it is elaborated, follows as a matter of course." It must be confessed that although our knowledge of pathology and bacteriology has greatly advanced, yet in many instances our therapeutics have not followed that advance. That further investigation may bring us eventually nearer to such a desideratum we do not deny, but at present the expression "as a matter of course" is utopian. Dr. Oppenheim goes on to remark: "The greatest stress in modern medicine has been laid upon the necessity of depicting lesions in the most graphic manner possible. Following out this idea the whole available space for illustrations in this book has been given up to micro-photographs of pathological sections, which have been thought to have a keener and greater didactic value than pictures of instruments, photographs of patients, and representations of surface changes." The author may certainly be congratulated on the result. These micro-photographs are one of the principal features of a very good book. They have been beautifully reproduced and they form one of the best series of such photographs which we have seen. The majority of micro-photographs leave much to be desired, but in those now before us the details are most plainly delineated, and characteristic specimens have been selected. It is an excellent plan to insert a micro-photograph of the normal structure of each organ, as is here done; it is most useful for comparison, and more especially is this the case with the stomach and intestines. These normal histological specimens are also beautifully reproduced. There are 101 original illustrations in half tone. Some of these are particularly good, such as the micro-photographs representing acute yellow atrophy of the liver, atelectasis with compensatory emphysema, and epidemic cerebro-spinal meningitis.

The clinical descriptions throughout the work are uniformly good and the pathology and etiology are thoroughly up to date. Some of the therapeutical measures suggested will hardly commend themselves, however, unless all other means fail. Lavage in various diseases of the stomach in the adult is strongly recommended by some authorities, but the majority of practitioners prefer to employ less unpleasant and usually equally efficacious remedies; much more would this principle hold with children. Dr. Oppenheim, however, advises lavage in the chronic gastritis of children and his description of the process would make the practitioner pause before adopting it. He adds: "As it may be necessary to continue this treatment for weeks the mother or nurse may be instructed in its details." Our sympathies certainly lie with the little patient. For purposes of differential diagnosis in cases of gastric disorders Dr. Oppenheim states that one of the best methods of differentiation is by means of a test meal, which is to consist of milk in infants, of bread-and-milk in somewhat older children, and of milk, bread, and meat in children of eight

or more years. Such methods of diagnosis, however, have not found general acceptance and the general belief is that equally good results may be obtained, except in very few cases, by means less calculated to inconvenience the patient.

Taking the book as a whole we have perused it with much pleasure. It is well written and we can cordially recommend it to those who wish special information in the medical diseases of childhood.

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*Practical Manual of Diseases of Women.* By H. MACNAUGHTON JONES, M.D., M.Ch. R.U.I. Eighth edition, revised and enlarged. With 640 Illustrations and 28 Plates. London: Baillière, Tindall, and Cox. 1900. 8vo, cloth. Pp. 947. Price 18*s.* net.

THE eighth edition of this book certainly does credit to the publishers and printers. It is issued in a much more convenient size than was the last edition, and the binding and type leave little to be desired. When, however, we critically examine the part played by the author we must confess to a considerable amount of disappointment. We will at once admit that we have read many parts of the book with much profit and interest. It is not intended, however, solely for the specialist, but, as the title-page tells us, for the student and practitioner, and it is from their point of view that it must be judged. That the book contains an immense amount of information no one can deny. That such information has been arranged in a form suitable at any rate for the student few, we think, would be prepared to maintain.

The book is, as a manual, almost too much up to date. It contains practically everything new of any importance or otherwise that has been published in gynæcology since the last edition appeared. The result is that not a few theories, operations, and modes of treatment are included the actual value of which at the present time is quite uncertain, such, for example, as the vibration treatment of Jayle and De la Croix de Lavalette for uterine fibroids and adnexal affections. Many of the old statements to which we called attention as being present in the last edition are yet to be found. Dr. Macnaughton Jones still believes, apparently, that perimetritis, pelvic phlegmon, and uterine fibroids are amongst the results, direct and indirect, of uterine versions and flexions. It would be interesting to know the facts upon which these statements of the author are based. Several similar instances could be adduced, but these are, after all, but small matters and of but little weight in judging of the real merits of the book. The author has visited the clinics of most of the leading foreign gynæcologists and the experience gained he has included in various portions of his work. We do not remember ever to have seen a text-book in which the excerpts from other writers exist in so great an abundance as in this. As a means of ready reference for such gynæcologists as are unable to gain access to or to read the various extracts in the original the advantages of the work are undoubted. The want of proportion that exists between various chapters and sections is, however, very striking. A full account is given of the rare tumours known as endothelioma and gyroma, but when we turn to what is perhaps the most important part of any work on gynæcology —the chapter on Cancer of the Uterus—we find a curiously confused and involved account of medullary cancer, scirrhus, carcinoma, and epithelioma or cancroid, without any attempt being made to distinguish clearly between the pathological and clinical varieties of the disease.

This new edition certainly bears eloquent testimony to the author's unbounded industry, but it is at the same time a striking example of how little industry avails in the production of a really good work unless it be combined with a systematic method and some power of determining the relative values of various facts and theories. The illustrations are very numerous and some of them are very good.

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*Encyclopädie der Haut- und Geschlechts-Krankheiten.* (*Encyclopædia of Diseases of the Skin and Generative Organs.*) Edited by Professor LESSER. Leipsic: F. C. W. Vogel. 1900. Crown 4to. Pp. 548. Price 30 marks.

THE problem of how to keep the practitioner in touch with the vast and rapidly-growing store of medical knowledge becomes more difficult every year. The additions to it are unlimited and the practitioner wishes, or at all events is expected, to know much more than he and his patients were content with a few years ago, yet the number of books he will buy are limited by considerations of expense. Two coöperative methods of dealing with the difficulty are in vogue. In the one a "system" consisting of a number of more or less comprehensive essays by the different contributors is produced; in the other a dictionary is compiled. Each plan has its good points, and though personally we think that the "scrappiness" of the latter is not compensated for by its advantages, such as facility of reference and necessary conciseness, we admit that it is largely a matter of taste as to which of the two is to be preferred.

The editor of the volume before us has dealt with the problem on the lines of a dictionary with considerable success. He has been fortunate enough to secure the services of an able staff of contributors, among them Professor Finger, Professor Neisser, Professor Seifert, Professor Paschkis, and Professor von Zeissl, to mention only two or three at random, and the result of their labours is an excellent book. It resembles Quain's "Dictionary of Medicine" more perhaps than any other English work, but is on a larger scale. It is impossible in the space at our disposal to criticise in detail the work of the large number of writers employed (they number no fewer than 42). It varies in quality naturally, but on the whole maintains a high level and is thoroughly practical throughout. The articles are written clearly and tersely and on the subject of treatment both sections, that on dermatology in particular, are unexpectedly full. It has, however, two serious faults. The principle of the subdivision of labour is carried to an excessive degree. In a cursory examination we have found no fewer than 14 writers on syphilis and doubtless many more could be found by further research. The general course of the disease is described by Blaschko, galloping syphilis by von Zeissl, the congenital variety by Caspary, Lustgarten's bacillus by Rille, laryngeal syphilis by Heymann, syphilitic disease of the heart by Mracek, of the ear by Jansen, of the mouth by Seifert, of the eyes by Greeff, of the kidney by Ullmann, of the nerves by Laehr, of the bursæ by Isaac, leucoderma by Schäffer, while we are indebted to Wolff for an account of the principles on which the disease is treated. With such a multitude of contributors repetition is unavoidable and that there should be as little as there is speaks volumes for the editor's skilful supervision. One of the best articles in the volume is the one on Ear Disease by Dr. Jansen which we have just mentioned, and it is the only one to which is appended a list of references to current literature. This deficiency in bibliography is a grave defect in the book. The text cannot possibly cover more than a portion of the subjects dealt with, and the book as a work of reference loses half its value if it fails to indicate where further information may be found. In spite of these shortcomings the volume will be found to be a convenient and trustworthy cyclopædia. It forms one of a series of medical encyclopædias in course of publication by Vogel of Leipsic. Two volumes on midwifery and gynæcology and diseases of the ear have already appeared, while three others on diseases of the eye, hygiene, and general surgery are in the press. Each volume is quite

independent of the others, and the whole, judging by the sample before us, should form a most valuable addition to medical literature.

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*Étude sur la Lèpre au Brésil.* (*A Study of Leprosy in Brazil.*) By Dr. JOSÉ DE MAGALHAES. Rio de Janeiro: Pereira Braga and Co. 1900. Demy 8vo. Pp. 186.

THE object of this book is to combat some of the conclusions arrived at by the Conference on Leprosy held at Berlin in 1897. The irritation left by this (in some ways unfortunate) conference lends a tone of bitterness to the author's remarks, which is accentuated, perhaps, by the consciousness that the majority of leprologists have abandoned the views which he holds and he himself is a voice crying in a heedless wilderness.

Dr. de Magalhães firstly holds that leprosy is not due to the bacillus lepræ on the ground that even, he says, in tuberculous cases it frequently cannot be found, and when found can neither be cultivated nor reproduce the disease by inoculation. He does not believe it to be contagious because in Brazil, where lepers mix freely with other people, the disease does not spread. Some Brazilian writers disagree with him here, but these persons he regards as unpatriotic. "See," he says sadly of one of them, "how a Brazilian furnishes arms against his own country." Finally, he thinks the disease is hereditary in a wide sense of the word—i.e., that leprosy may be transmitted directly or may alternate with neuroses such as epilepsy. Without any hereditary transmission at all, he further says, it may be produced by improper diet, long exposure to damp, "emotions sad or keen, trauma, &c." In face of this list with the comprehensive "&c." at the end of it, that we are not all lepers is owing obviously only to the miraculous intervention of Providence.

Leprosy, we are told, flourishes in Brazil mainly in marshy districts, where it supports Mr. Hutchinson's theory by attacking principally the fish-eating part of the population. Thus it is very prevalent in Para and in parts of Maranhao. Even to allow whale's flesh to form a large part of a person's food would seem to be enough to produce leprosy, as is shown by the disastrous effects of such a diet on the Itacaripa islanders. To avoid getting leprosy in Brazil, then, it would be as well to abstain even from the appearance of fish. As regards treatment, the essential thing is to improve the dietetic and hygienic conditions of the people; isolation the author regards as brutal and unnecessary.

The greater part of the book is taken up with the opinions of various authorities on the points at issue. The account of the author's own work occupies but a few pages, and nearly as much space is devoted to a spirited denunciation of bacteriologists in general and Hansen in particular. So vigorously does he inveigh against them that in one place he has to check himself with the reminder that the "study of leprosy requires calmness, prudence, and meditation."

A vigorous opposition is as useful in science as in politics, but in the former its duty is not merely to oppose but to oppose in an unbiased spirit. While we admire Dr. de Magalhães as a man who is not afraid of being in a small minority, it cannot be denied that the partisan spirit in which he writes detracts seriously from the value of his work.

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SWANSEA WORKHOUSE INFIRMARY.—At the meeting of the Swansea Board of Guardians held on Sept. 10th it was decided to appoint a resident medical officer to the Workhouse Infirmary. Mr. D. H. Thomas, the visiting surgeon, having resigned the appointment, will be granted a superannuation allowance.

# Analytical Records

FROM

# THE LANCET LABORATORY.

(1) SOLOID STAIN METHYL VIOLET; (2) TABLOID BISMUTH RHUBARB, AND SODA; AND (3) ENULE PREDIGESTED MEAT AND MILK SUPPOSITORIES.

(BURROUGHS WELLCOME AND CO., SNOW HILL BUILDINGS, LONDON, E.C.)

WE have already pointed out the convenience of "soloid" microscopic stains. They afford a ready means of preparing a staining solution for microscopic work in a short time and possess the advantage that they need not be used until required, and of course the dye in the solid state, as in the "soloid," is permanent, while the liquid stains are liable to changes. A recent important addition to the list is the methyl violet soloids containing 0·1 gramme of the dye. Standard solutions can therefore easily be prepared with the "soloid" methyl violet. As is well known, methyl violet is a useful and quick stain for various micro-organisms and notably for the diphtheria bacillus. The following formula of ingredients now embodied in a tabloid is of well-known value in certain forms of gastric disorder: bismuth subnitrate, three grains; powdered rhubarb, one grain; and bicarbonate of soda, two grains. The tabloid on moistening readily disintegrates, so that for the purpose of administration the drugs contained in it may be regarded as being taken in the form of powder. We have also received specimens of rectal suppositories containing predigested meat and predigested milk respectively which are of a size suitable for administration to children. They are of a shape which renders the expulsion of the suppository after its greatest diameter has been passed impossible. This particular brand is distinguished by the word "enule."

SHREDDED WHEAT BISCUIT.

(THE CEREAL MACHINE CO., 57 TO 63, JACKSON-STREET, WORCESTER, MASS., U.S.A., AND 6 AND 8, EASTCHEAP, LONDON, E.C.)

It is surely enough to know that this preparation is wheat, whole wheat, and nothing but wheat, to be able authoritatively to speak of it in terms of praise. There is a strong tendency nowadays to submit natural foods to some process of preparation, a course which too often leads to the loss of a very serious proportion of the valuable food constituent of the original product. According to our analysis this is not so with the shredded wheat biscuit, besides which all that is done in its preparation is to make the whole wheat berry elastic by steam after it is thoroughly cleansed, and then to tease it out, so to speak, into a homogeneous mass of shreds. In appearance the shredded wheat biscuit may be said to resemble a miniature wicker-basket. It is a very palatable and crisp biscuit containing the entire constituents of wheat, which, of course, include the germ. Our analysis gave the following results: moisture, 10·35 per cent.; proteids, 12·84 per cent.; mineral matter, 1·50 per cent.; fat, 0·80 per cent.; soluble carbohydrates, 38·40 per cent.; and insoluble carbohydrates with fibre, 36·11 per cent. We have not examined a preparation of wheat in which the total amount of soluble matters is so high as is shown in the foregoing analysis of shredded wheat biscuit. And this large proportion of soluble carbohydrates is due chiefly to dextrinised starch. The clear water extract of the biscuit gives a heavy brown red colouration with iodine instead of blue, as would be the case with soluble starch. It is evident, therefore, that the process of preparation not only moulds the biscuit into a pleasing texture and form, but renders it a very digestible article of diet as well. A comparison of the foregoing analysis with the analysis

of entire wheat shows that the proportion of constituents is the same, but more than a third of these constituents by weight is converted into a more digestible state. The biscuit may be used with distinct advantage as a substitute for bread and a great many attractive dishes can be prepared with it. Though it contains the entire wheat it is free from irritating husk. Dietetically it is superior to the average white bread. Owing to the fact that the carbohydrates of the original wheat are largely broken down in the method of manufacture it is very suitable for invalids. The biscuit keeps well, apparently neither absorbing moisture nor losing it. In view of these results we regard the shredded wheat biscuit as a very important addition to our daily foods. It represents an unimpoverished natural product and on this account claims our commendation.

### CAFOLIN LIQUID COFFEE.

(THE CAFOLIN CO., 20, EASTCHEAP, E.C.)

We believe this to be a genuine coffee extract concentrated by approved methods. According to our analysis it contains just over 1 per cent. of caffeine. A good infusion of coffee (one of coffee to ten parts of water), according to our analytical experience, contains on an average 0·11 per cent. of caffeine, so that this "liquid" diluted ten times would yield a beverage of the same strength as good coffee infusion as regards the amount of alkaloid. The diluted liquid coffee does not, however, contain any important quantity of the other principles of freshly roasted coffee which are represented chiefly in oils and certain aromatic substances. The liquid has a tendency to deposit its caffeine associated with tannin. The liquid yields a palatable beverage of pleasant coffee flavour possessing the stimulating properties referable to caffeine in the same degree as a well-made infusion of coffee, judging from the proportion of alkaloid present.

### (1) GLOBENARIS WATER; AND (2) MEAT PREPARATIONS.

(COOPER AND CO., 80, GLOUCESTER-ROAD, SOUTH KENSINGTON, LONDON, S.W.)

It is curious how the presence of an excess of oxygen in ordinary carbonated water modifies its taste. The sharpness of ordinary aerated water seems to yield in favour of a smoother or "rounder" flavour. Of course, oxygen is not dissolved by water with the same facility as is carbonic acid gas. Nevertheless, we found in "globenaris" water just over 5·26 per cent. of oxygen in the escaping gases. The water proved to be of praiseworthy purity, barely a trace of residue being obtained on its evaporation, nor was there any evidence of metallic contamination on testing carefully with the well-known delicate reagents. It is exceedingly difficult to prepare distilled water without some form of contamination, however slight, creeping in, and when it contains carbonic acid and oxygen under pressure the difficulty is enormously increased. We have found that oxycarbonated water attacks metals such as copper and zinc much in the same way as do the mineral acids. By first oxydising the metal an oxide is formed which soon gives place to a soluble supercarbonate. Messrs. Cooper and Co. have taken immense pains to produce aerated waters of remarkable purity and have established special machinery for this purpose which we have had the opportunity of inspecting. Such attempts deserve success and we are glad to be able to record that this success has been obtained judging from the satisfactory results of our analyses of the products. It need hardly be added that after taking these special precautions with the machinery every endeavour is made to provide against the contamination of the water in syphons. In these vessels pure fittings are used, the outlet tube of the syphon being porcelain-lined. In addition to pure plain aerated water charged both with oxygen and carbonic acid Messrs. Cooper and Co. also prepare medicated oxycarbonated waters containing, for example, lycetol, lysidine, phenocoll, and piperazine. Oxycarbonated water affords a very agreeable way of administering these drugs which are known to be of value chiefly in conditions in which excess of uric acid is a feature. Amongst other preparations submitted to us by this firm was a specimen of meat juice which on analysis gave the following results: moisture, 61·00 per cent.; mineral matter, 6·91 per cent.; and organic matter, 32·09 per cent. The total nitrogen was 3·72 per cent. which proved to be distributed as follows: nitrogen in insoluble albumin, 0·284; in acetic acid coagulum, 0·180; in peptone and albumose, 2·092; and in meat bases, 1·164. The juice is therefore a true nutritive as well as stimulant. We examined also a beef essence and a chicken essence, both of which are jellies containing, as our examination showed, a desirable proportion of the nutrient matters of beef and chicken respectively. Moreover, both jellies possessed a delicate and palatable flavour.

### (1) KALSBECK TABLE WATER; AND (2) KALSBECK TABLE WATER CUM LITHIA.

(REID AND DONALD, PERTH.)

Both aerated waters proved to be free from the common impurities of waters of their class. They were bright and sparkling and yielded a clean mineral residue on evaporation. The table water contained 16 grains of mineral salts per 12-ounce bottle, consisting chiefly of the carbonates of lime and the alkaline carbonates. The lithia water yielded on evaporation just over 23 grains of mineral salts; this increase may broadly be taken as due to the carbonate of lithium present. The water gave a well-marked reaction for lithium when examined by means of the spectroscope. The waters were free from organic matters. In accordance with these results we regard them as approaching a satisfactory standard of purity, while the lithia water has an added value on account of the lithia present which may in this way be administered very agreeably.

### FLORAL HAIR DOUCHE.

(SOUTHALL BROTHERS AND BARCLAY, LOWER PRIORY, BIRMINGHAM.)

This is a very pleasant spirituous preparation containing certain ingredients which are admittedly beneficial when applied in this form to the hair. It is practically a dry preparation—that is, contains no water—so that its application produces no stickiness and leaves the hair clean and dry and with a generally agreeable sensation on the scalp. From a consideration of the formula it would seem that this douche is a good tonic application for the hair. It is distinctly antiseptic and contains no irritating or injurious substances. On account of its wholesome influence on the scalp it minimises the tendency to dandruff.

### SOLEX IPECACUANHÆ.

(FLETCHER, FLETCHER, AND CO., HOLLOWAY, LONDON, N.)

Solex ipecacuanhæ is practically a standard ipecacuanha preparation by means of which ipecacuanhæ wine may readily be prepared. The preparation is neutral and miscible, containing 0·8 gramme of total alkaloid in 100 cubic centimetres, and the inert extractive matters are as far as possible eliminated. The preparation mixed with seven volumes of sherry forms the vinum ipecacuanhæ B.P., 1898. The result is after some time a slightly turbid liquid, which may be rendered, however, quite bright by filtration without affecting its active therapeutic strength. We are glad to record this important improvement, inasmuch as the ordinary liquid extract of ipecacuanhæ is one of the most unsatisfactory preparations of the pharmacopœia. Solex ipecacuanhæ, on the contrary, is a standard preparation yielding an ipecacuanha wine of definite strength and therapeutical efficiency on diluting it with sherry in the proportions indicated.

# THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 22, 1900.*

IT would be a libel on the wealthy men of Great Britain, who are yearly becoming wealthier in spite of wars and Chancellors of the Exchequer, to regard them as indifferent to the best voluntary use of their superfluous means and especially to the enormous amount of good that may be done by the endowment of medical science and research. The voluntary hospitals of this country are sustained in their blessed and benevolent work by a deeper personal sympathy with the sick poor than exists in most countries where such institutions are maintained by enforced rates or taxes. If we could convince the generous wealthy that the cause of medical science is the cause of the poor and that the cultivation of this science would help the work of hospitals as well as minister to the prevention and cure of disease among all classes, we should procure such bequests and legacies, not to say gifts during life, from benevolent men as would make Britain what Britain ought to be as the country of JENNER and of LISTER—the leader in those investigations which go to the very root and source of disease with a view to its extinction and suppression as well as its cure. There are indications that if such countries as ours are to preserve their power and their rule in the world they must not rely so much as heretofore on the tendency to multiplication in the race which so far has well supplied our wants. We must husband the lives that we have in all stages of their existence and oppose with all the resources of reason and of law whatever can be demonstrated to be the cause of disease and premature sickness and death. It is only this demonstration that needs to be forthcoming to induce generous citizens to make endowments that might alter the whole outlook of many individual lives and of particular races. It is only the nature of the problems to be investigated that hinders. This is so abstruse and complicated and so much out of the track of common observation that it seems incomprehensible and uninteresting to the lay mind. Mr. ANDREW CARNEGIE, whose colossal wealth, if well used in this way, might without any noticeable impoverishment of himself be equal to the elimination of two or three of the great causes of death that are the despair of our large city communities, draws a distinction, especially with reference to our own country, in this respect between the lay mind and the professional mind. He speaks of the splendid legacy of Sir ERASMUS WILSON to the Royal College of Surgeons of England and looks in vain for any similar liberality in the aristocratic classes of Great Britain. This comparison, or contrast, is only part of a larger contrast which Mr. CARNEGIE in his "Triumphant Democracy" draws between the alleged selfishness of the aristocratic classes and the liberality of the Republic of which he is so justly proud He is more right when he suggests that the contrast is due to personal differences in the intelligent apprehension of the questions and problems to be studied rather than to the nature of the Government under which we live. He is naturally proud of the splendid educational institutions of the United States bestowed by individuals on the Republic—the Johns Hopkins University, the Cornell University, the Vanderbilt University, the Packer Institute, the Vassar College, the Wellesley College, the Smith College, the Bryn Mawr College, and the Stevens Institute, the Johns Hopkins University alone having cost £1,000,000. Mr. CARNEGIE himself has given $50,000 to build a laboratory in Belle Vue College. As we have said, the researches and investigations needed refer to problems of great complexity and are naturally understood better by the medical man than by the rich layman, whether aristocratic or democratic. Our belief is that we have only to make the nature and claims of these problems a little more clear to our wealthy compatriots to get from them as generous gifts as those which have founded and now maintain our voluntary hospitals. It was THOMAS GUY, himself a rich man, who built and endowed a hospital which for over 100 years ministered to 400 of the poor of south London, and the generosity of his successors has enabled the hospital to do a still larger service to the poor.

There is every reason to wish that wealth should be devoted to medical science for its benevolence to man and beast, for both have promise of untold benefits from its researches. We have an object lesson at the present moment in Great Britain. In Glasgow a few cases of plague have appeared. Where is the panic that such an event would have occasioned a hundred or even fifty years ago? It does not exist. Why? Because medical science has defined the danger and the way to deal with it. In several quarters, even in this aristocratic country, many signs are appearing of the intelligent application of wealth in a benevolent way to medical science. Witness the munificent gift of Lord IVEAGH to the Jenner Institute of Preventive Medicine. Only last week we noticed the gift to Guy's Hospital of £5000, the interest of which is to be used "to increase and spread the knowledge of the means of preventing and treating disease." The gift is from "A Friend of the Hospital" and tends to indicate that the same sympathy which provides hospitals will soon endow research and that such an intelligent use of wealth will be most natural in a country which has endowed colleges, universities, and hospitals for centuries back. The more Mr. CARNEGIE revolves this subject in his mind the more difficult will he find it to know for which mercy to be most thankful—that he was born a Scot or that he was nurtured an American.

THE paper issued by the War Office last week containing the proceedings of the court of inquiry into the treatment of the British prisoners of war at Pretoria, with a covering despatch from Lord ROBERTS to the Secretary of State for War, is by no means pleasant reading. It discloses a very discreditable state of things on the part of the late Transvaal Government. It also contains a very emphatic expression of opinion on the part of the Field Marshal in regard to a member of the medical profession. After speaking in deservedly

appreciative terms of the efforts made by Dr. P. H. HAYLETT and Dr. R. VON GERNET to ameliorate the condition of their patients in the hospitals at Racecourse and Waterval and of the timely aid and effective coöperation rendered by some gentlemen resident in the neighbourhood, Lord ROBERTS goes on to say: "On the other hand, it would be difficult to condemn too strongly the conduct of Dr. H. P. VEALE, M.B. Cambridge, whose heartlessness in ignoring the disgraceful treatment of the sick prisoners and the remonstrances addressed to him by the medical officers in immediate charge of them calls for the severest reprobation." We have thought it right to quote the exact words used by the Field Marshal because they serve to indicate the feeling of indignation which a perusal of the whole of the documentary evidence evidently aroused in the mind of Lord ROBERTS, who is universally recognised as a just and humane man.

It is necessary, however, to remark that the War Office document is incomplete in that many of the letters referred to in the text are not published, and it is only fair to Dr. VEALE to state that in his examination before the court of inquiry he said that he was one of the three medical members of the Transvaal branch of the Geneva Red Cross Society; that he had nothing to do with the sanitary arrangements of the prisoners of war at the Racecourse, although he allowed that it would be his duty as medical officer attending the sick to represent and try to remedy anything which he found prejudicial to health, and this he did; that he disclaimed all responsibility for the medical and sanitary arrangements for the prisoners of war at Waterval; and that he denied having received most of the letters alleged to have been addressed to him by Dr. HAYLETT representing the grievous condition of the hospitals and their occupants. We propose to defer any comment of our own on Dr. VEALE'S conduct until sufficient time has been given to permit of his making public what he has to say in justification or explanation of his action.

Whilst we are upon this unpleasant subject we may add that we are glad to believe that there are not many clergymen in the Church of England like the Rev. J. GODFREY who under colour of consideration of his duty to the Transvaal Government and in order to gratify his "desire to maintain the honour due to his position" discontinued the regular ministrations of the services of the Church because a prisoner, and he a non-combatant, had escaped. We commend to the notice of the Rev. J. GODFREY a study of the life of Father THOMAS of Algarve who refused his ransom in order to minister to the Portuguese prisoners of the Moors in the dungeons of Al Araish.

As regards the general question of the treatment of the British prisoners of war—the bad quality and insufficient quantity of the rations, the neglect of all sanitation, the treatment of the colonial corps prisoners, and so forth—we need not dwell upon a subject which has been already so fully discussed in the daily journals. Happily that is all over and a thing of the past now.

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THE *New York Medical Record* of August 11th contains a full abstract of an address on American Medicine, delivered at the International Medical Congress in Paris by Dr. JACOBI of New York, which gives a very interesting account of the development of the profession and of medical science and literature in the United States. There are parts of the address with regard to which opinions may differ. We observe that our contemporary in its issue of August 25th takes exception to Dr. JACOBI'S criticisms on American medical journalism, and it must be admitted that Dr. JACOBI is very candid in the denunciation of hundreds of medical journals which, according to him, represent rather "the growing commercialism" of the century than any ardent desire to advance medical science or medical literature. He declares that there are 300 such journals and that neither medical science nor medical ethics would suffer if the number were reduced to 50. Such a great number of journals and the competition implied thereby Dr. JACOBI thinks to be inconsistent with the independence of the editors and with high aims on the part of the proprietors. Our contemporary resents such aspersions with some warmth, and if we thought that Dr. JACOBI meant his criticism to be applied indiscriminately to American journalism we should regard the resentment as reasonable. But we must take his arithmetical and other facts into consideration. His figures are certainly startling apart from his positive statement, which most of us in Europe can confirm, that many journals seem to exist to puff proprietary articles. Perhaps he is wrong in regarding them as in any proper sense medical journals. Certainly no such number of real and honest journals could be supported even by the large numbers of the American profession. For the class of papers which he condemns no censure is too severe and it seems to us that all honest medical journals should feel grateful to an independent critic for plain speaking on the subject. The one necessary thing for the respectability of journalism, professional or otherwise, is independence. It would be unreasonable to expect proprietors to be above all considerations of profit, but it will be a bad day for scientific journalism if an independent medical critic cannot say what he thinks of the fitness of the journals of the profession to advance its science and its dignity.

Dr. JACOBI is almost equally severe on the number of medical societies in America. In Colonial times there were two; in 1876 nearly every State in the Union had its medical society, and most counties in each State have their own medical society. All the state societies are represented in the American Medical Association, save one. The exception is a great one—that of the State of New York. This State is excluded, and it is instructive to notice that the reason for its exclusion is an ethical one. There is no central authority in the United States vested with any legal disciplinary power over members of the profession as is the case to a certain extent with the medical authorities and the General Medical Council in the United Kingdom. The disciplinary power in the United States lies in the societies, and chiefly in the American Medical Association in which all the State societies are represented. The State societies exercise their disciplinary power by refusing membership to medical men who take out patents for medicines, or who advertise themselves or allow themselves to be advertised by others; and the American Medical Association has its code of ethics based, we are proud to say, on the classical work of PERCIVAL, our own great

medical moralist. It expects all associated State societies to fall into line with the requirements of this code and, failing to do so, it excludes them from representation or expels them as in a significant case in 1882. The question of holding relations with homœopaths arose in that year. There was the same universal feeling against such relations as obtains in this and in all European countries. It obtains, also, in the United States, but in the New York State Society a special point was raised and contended for strongly. This Society admitted the general impossibility and incongruity of consultations between regular practitioners and those committed to the dogmas of HAHNEMANN, but it was argued that in some cases it would be inhuman to refuse a consultation and the Society modified their law to meet exceptional cases and cases of emergency. For this modification, of which Dr. JACOBI speaks approvingly, the State of New York was expelled from representation in the American Medical Association. The American Medical Association has no legal relation to the legislature of the United States as the State societies have. It is nevertheless a powerful body, more powerful in some respects for being voluntary and unrestrained by law, and is capable, as we have seen, of making its views felt by the societies of individual States. The action of the association in this particular question was the more resolute and striking inasmuch as homœopathic and eclectic practitioners in the States are legally recognised as much as regular practitioners, but this is only an additional reason for regular practitioners in voluntary associations emphasising the difference between them and their fanatical competitors.

The peculiar legal position of the profession in the United States is well shown by Dr. JACOBI and must be remembered by all who wish to judge fairly the difficulties in the way of medical practitioners and medical teachers there. Of late years, with an enormous advance in medical education and in medical practice, there has been actual retrogression on the part of the States in respect of medical legislation. In 1840 the legislatures of nearly all the States had laws for protection of the citizens from quacks. Between 1840 and 1850 most of these laws were repealed or not enforced out of deference to unlicensed practitioners. The power to confer degrees rests in the different States on the most various conditions of law. In New York and Pennsylvania the conditions are satisfactory, but in Illinois, where so much has been done by medical teachers to improve education, legislation like that of New York has been defeated. In Ohio and Nebraska the statutes require only the nominal endowment of $5000 for the creation of a degree-conferring institution. In other States and Territories any body of men may form an educational corporation with power to confer degrees. So wide is the difference of standard of medical education and qualification that it is difficult for the different States of the Union to arrange for reciprocity of medical practice between their graduates.

Such are the disadvantages of the medical profession in a new country having democratic institutions based on an exaggerated view of the rights of the individual in regions where he can have no rights not acquired by study and special knowledge. But such disadvantages can only raise our esteem for those who, prevailing over all difficulties, have brought the medical profession to a pitch of efficiency, alike in the region of research and the domain of practice, which compares favourably with the standard of any European country. The number and competition of the schools, of which in 1899 there were 156, with 24,119 students, having a very inadequate check on their degree-conferring powers, only makes us wonder the more that within recent years it has been possible in many States to extend the medical curriculum to three or four years, and to report through societies and journals an amount of good work which implies a very high standard of education in some quarters and a very high pitch of medical and surgical ability diffused throughout the enormous area of the United States. Dr. JACOBI, while severe enough in his criticisms on medical journals and medical societies, leaves us in no doubt that he is proud of his *confrères* and not altogether prepared to condemn that democratic constitution which has created medical libraries and medical laboratories that are the envy of older countries.

# Annotations.

"Ne quid nimis."

## THE WORK OF THE GOVERNMENT LABORATORY.

THE work of the Government Laboratory grows apace and increases in interest every year. There can be little doubt that the appointment of Dr. Thorpe a few years ago in succession to Dr. (now Sir James) Bell led to a considerable amount of reorganisation of this important department. The annual reports at any rate show that the operations conducted in the Government Laboratory have been reduced to something like a system. As a result of this improvement in the equipment of the department together with the erection of new and modern constructed laboratories in Clement's Inn-passage, the Government has called into greater requisition the services of its laboratory department. The old Somerset House laboratory was primarily instituted for the purpose of controlling Inland Revenue regulations which referred chiefly to beer and spirits. The work now not only relates to Customs and Excise but to the examination of foods, water-supplies, sewage effluents, Government office supplies, and a number of miscellaneous articles with which the various Government departments come into contact. Further than this the principal of the laboratory practically occupies the position of a consultant and adviser to the Government, a *rôle* which cannot be fulfilled without the institution of some amount of original research. Dr. Thorpe was called upon, for example, to inquire into the use of lead compounds in pottery manufacture, and this involved the making of a number of experiments on the composition of "frits" which could be regarded as least likely to produce lead poisoning. The inquiry, as we know, has led to excellent results which have stimulated the pottery industry to abandon the use of raw lead and in some cases to discard the use of lead altogether for glazing purposes. Again, Dr. Thorpe's assistance has been in request in an inquiry into the composition of defective steel rails, and other subjects have been referred to him relating to the defects of boiler-plates, shafting, and cranks in connexion with accidents under investigation by the Board of Trade. The work of the principal of the laboratory has been considerably increased also by the fact that he has been appointed by the Local Government Board, in succession to the late Sir Edward Frankland, to undertake the analyses of the London water-supplies. In our opinion this

department should have been perfectly distinct from the work originally undertaken in the Somerset House Laboratory. It is to be observed, however, that a special room has been fitted up for the purpose of making the analysis of the London water-supplies. Still it is evident from the present report that Dr. Thorpe's hands are quite full and we should have thought that this important department of public work would have been placed in the hands of a person who could devote his whole time to the subject. As we have already pointed out the reports on the water-supply are much belated and are generally issued two months after the taking of the samples. We do not gather whether the additional space granted for the analysis of the London water-supplies includes a bacteriological laboratory. Since filters and disinfectants are also examined in the Government laboratory we presume that bacteriological tests are conducted there, though in the instances given in the present report we do not find any details as to how the antiseptic value of rejected and accepted disinfectants was arrived at or as to exactly why a certain filter was found to be satisfactory and others unsatisfactory. We are glad to see that the relations between the public analysts and the Government Laboratory authorities continue to improve. In the majority of cases the findings of the public analyst as to adulteration of milk and butter and other things have been upheld. We note, also, with satisfaction that Dr. Thorpe has conferred with representatives of the Society of Public Analysts as to the analytical data to be regarded as criteria in deciding whether or not butter contains foreign fats. The laboratory officials have also been busy in examining samples of imported beer for the presence of preservatives for the information of the departmental committee now inquiring into that subject in its relation to the purity of food. Beer continues to be diluted, but the practice is almost entirely confined to London. Of 95 samples of tobacco taken from manufacturers and dealers 20 were found to be adulterated with liquorice or glycerine. A curious case of spontaneous ignition was investigated in which it was shown that zinc dust sent through the post in a paper wrapper had been the cause of the phenomenon. The report teems with interesting facts in connexion with most kinds of fraud and adulteration as well as also with many important points relative to home industries and those which involve risk to those engaged therein. Instead of the mere digests of these facts in an official document of only 17 pages we should like to suggest that the whole of the results obtained in the Government Laboratory during the official year should in the future be embodied in a blue-book much in principle and in scope like that issued annually by the medical officer of health of the Local Government Board.

## THE SOUTH AFRICAN COMMISSION.

WE must, of course, await the publication of the report of the South African Commission at the end of its inquiry before expressing any definite opinion in regard to the subjects under investigation. There does not seem to be any valid reason, however, against our calling attention, in the meantime, to the very important evidence given by Lord Roberts which has been supplemented by that of his private secretary, Lord Stanley, and followed by the testimony of Lord Kitchener. As chief of the staff Lord Kitchener was probably better acquainted with the difficulties and details of the transport service than any other officer at the seat of war. It is naturally very satisfactory to us to find from the brief reports which have appeared of their evidence that we were amply justified in the position which we took up from the first and to which we have throughout adhered. That is, however, a very secondary and insignificant matter as compared with the general sense of relief which promptly followed the perusal of Lord Roberts's evidence. It was not so much with the truth or otherwise of Mr. Burdett-Coutts's allegations that most people concerned themselves as it was with the suggestion that all the suffering and hardship which he so vividly described were attributable to want of foresight, negligence, and bad management. It was this that made his allegations so distressing to people in this country. The assurance of Lord Roberts that owing to the difficulties of transport in connexion with his advance and the nature of the country they were unavoidable has naturally given rise to an immense sense of relief. We know now that, in the opinion of Lord Roberts, the campaign had been an extraordinarily difficult one from the hospital point of view and that the Royal Army Medical Corps, assisted by the civilian surgeons, as he emphatically stated, had met the difficulties magnificently. We need not discuss the facts detailed by Lord Roberts in his evidence in connexion with the insufficiency of the railway and other methods of transport at his disposal, but we may make a remark in passing that we are glad to have from the first pressed for the appointment on the Commission of some one or more managers of our big railway lines, to whom the facts and figures addressed by Lord Roberts cannot fail to prove of great value when the time comes for drawing up the report. We may add that Lord Kitchener's evidence agreed with that given by Lord Roberts. He said that the difficulties of transport were very great and constituted a serious problem throughout. It had been largely requisite to subordinate everything to the necessity of a rapid advance. The hospital appliances carried on Lord Roberts's advance amounted to 1680 tons and it was impossible to take more equipment or *personnel*. Lord Kitchener acknowledged that doubtless a good deal of suffering was undergone, but this was not due to neglect by the medical officers or to the equipment of the field hospitals. The experience gained in South Africa will not, we trust, prove barren of good results but lead to all needful improvements in our military and hospital systems in the field. Altogether apart from the report of the Commission there will remain subjects for serious consideration. As Lord Roberts suggested, it will no doubt be very advisable when the war is over that there shall be a departmental inquiry into the questions which have been raised in connexion with the Royal Army Medical Corps in time of war.

## INDUSTRIAL TRAINING OF GIRLS UNDER THE POOR-LAW.

A REPORT has been prepared by Miss Stansfeld, assistant inspector to the Local Government Board, on the Industrial Training of Girls in the Metropolitan District Schools, presenting the objects it is desired to attain and the methods of training adopted in the various schools. As is so frequently the case with educational reports, the teaching provided is described with but few indications of the mental and physical characteristics of the children and their special needs; thus material is lacking for the formation of a sound opinion as to what their training for industrial occupation should be. We dwell upon this point because much confusion exists between educational training planned to evolve the mental powers and character of the child and technical teaching in preparation for the work of adult life and self-support. Technical instruction is a poor substitute for educational labour spent in building up and evolving mental ability during early years. The report says: "The effects of neglect and heredity on mind and body are often only too apparent, and, even with the more active and intelligent children, it requires, in some cases, two or three years' existence in the brighter and healthier atmosphere of the school, before the influence of

previous surroundings can be finally thrown off; nor is this all, the pick of the Poor-law children are, as a rule, boarded out, and the failures of that system are returned to the workhouses and find their way to the schools. The presence of 'ins and outs' and the admission of children of 11 years old and upwards in a state of almost complete ignorance, seriously affect the administration of the schools." It is to a careful study of the scientific principles of training, founded on observation of the special children to be educated, that we look for advancement in results; also for some definite plan of action in place of vacillation and oscillation of opinion between methods of school training and technical instruction for the purpose of fitting the children for positions in industrial life at an early age. Miss Stansfeld says that the kindergarten should be universally, adopted; signs of greater alertness and intelligence among the infants may be observed in those schools where the kindergarten system is in vogue. We may venture to ask is there any universal system that it is wise to adopt, or, indeed, any one method including all the necessities for the training of children? The kindergarten system is very good, but is often employed with too little adaptation to individual children in evolving their brain power and removing brain faults, unless conducted by teachers well trained to observe the points that demand special attention. Contrary to the opinion of many representative guardians Miss Stansfeld advocates the grouping of girls after 14 years of age in associated or block-system schools so that a period of definite training for domestic service may be commenced, adding that in many instances the "mother of a cottage home" is wanting in natural qualifications and the experience necessary for imparting good domestic habits. These considerations naturally point to the great want of a model home or training college where probationers may be received for one or two years before appointment to the responsible care of children, and where they may learn some of the practical points of child management as well as laundry, cooking, and other domestic duties. It is in accord with experience that children need general education up to 12 or 13 years of age, and that technical or domestic training is better acquired after such preparation, while all persons engaged in the care of children themselves need training for such duties.

## THE FEVERS OF INDIA AND THEIR DIAGNOSIS BY MEANS OF EXAMINATION OF THE BLOOD.

THE medical practitioner in India early discovers that typical agues and remittents are not the commonest fevers which he is called upon to treat—they are, in fact, in most parts of India of comparatively rare occurrence—but he meets with innumerable cases of fever of a more or less irregular, continued type, generally with a morning remission of about one degree and a duration of anything from one day to six or eight months. With these fevers there is but little constitutional disturbance, and quinine, and in fact all drugs, are of but little if any benefit. Some recent writers have attempted to differentiate certain classes among these fevers on a basis chiefly of their duration, but it is easy to show a series with every gradation between the limits named and the introduction of new names without sufficient distinction only makes confusion more confounded. Among Europeans that scourge of hot countries, enteric fever, is probably now in most typical cases well recognised, but it may well be that some of these anomalous fevers are clinically mild cases of enteric fever and as virulent as the worst for spreading the infection. More knowledge on this point would be of the greatest value in tracing the means of spread of this disease which has up to the present admittedly baffled all attempts to elucidate it. Further, now that we have some clue to the method of transference from case to case of the malarial parasite by the agency of certain mosquitoes, the further elucidation of this imperatively demands a more accurate knowledge of what fevers are and what are not caused by this parasite. Again, some of these fevers may well be due to the cause, whether physical or microbic, of heatstroke, while some bear a very close resemblance clinically to Mediterranean fever. Now, by the microscopic examination of the blood, we have at our disposal a means of deciding with considerable certainty whether a certain fever is due to one of these three causes and it appears to be only from want of opportunity that more use is not made of the vast amount of clinical material available in India. When we consider that among the British troops alone nearly half the deaths and invaliding and nearly a third of the total sickness are due to these causes the importance of the subject can hardly be overrated. Most of the medical practitioners in India are Government servants and can hardly be expected to carry out this work entirely in their own time and at their own expense, and we would urge upon the authorities their duty to provide the necessary apparatus and opportunity to allow of an examination of the blood being made at least in all large hospitals. There are already many medical officers fully capable of carrying out this work and opportunity would speedily produce more.

## POLLUTION OF SEA-WATER BY SEWAGE.

AT the British Association in Bradford, Dr. E. A. Letts, Professor of Chemistry, Queen's College, Belfast, and Mr. John Hawthorne, B.A., of Queen's College, Belfast, communicated a paper on Sept. 8th, in the Chemical Section, on the Seaweed Ulva Latissima and its Relation to the Pollution of Sea-water by Sewage. For a number of years past a very serious nuisance has arisen from the sloblands of the upper reaches of Belfast Lough during the summer months, the stench at low tide being quite overpowering, and the air heavily charged with sulphuretted hydrogen. In the northern portions of Dublin Bay a precisely similar nuisance, though not of the same magnitude, also arises from the sloblands. The nuisance is caused by deposits of the green seaweed called "ulva latissima" or "sea-lettuce" ("sleech" locally), which in the two localities mentioned grows in abundance and during high winds or gales is washed ashore. In Belfast Lough the quantity thus deposited is enormous, forming banks which are often several feet thick, and which extend for miles along the coast. Once deposited these layers of seaweed often remain more or less stationary for months in the shallow bays or pools of the neighbourhood, and in warm weather rapid putrefaction occurs and a perfectly intolerable stench arises which is perceptible over a wide area and seriously affects not only the comfort of the inhabitants of the district but also the value of their property. An extended laboratory investigation has shown that when the seaweed ferments hydrogen and carbonic anhydride are first evolved in about equal volumes and fatty acids are produced. Propionic acid is the chief of these fatty acids; butyric acid is also formed and probably acetic acid in addition. In a later stage of the fermentation sulphides are also formed, probably by reduction of sulphates present in sea-water, and the seaweed blackens from formation of ferrous sulphide, and this latter disengages sulphuretted hydrogen by the action of the fatty acids, whence the nuisance. The evidence at present collected as to the organisms concerned in the putrefactive process points to there being two chief species—(1) a spore-forming bacillus which apparently infects the seaweed and causes the production of fatty acids from its tissues; and (2) a micro-organism probably derived

from the mud of the shore which gives rise to the formation of sulphides by a later fermentative process. The evidence tending to prove that the occurrence of the seaweed in quantity in any locality is associated with sewage pollution is of three kinds:—1. The composition of its tissues, the amount of nitrogen it contains being far in excess of any other seaweed of which analyses are recorded. It contains over 6 per cent. of nitrogen. 2. Assimilation experiments. A frond of the seaweed was placed in various mixtures in succession—(*a*) of polluted sea-water; (*b*) polluted sea-water, plus sewage; (*c*) polluted sea-water with sewage and ammonium salt; and (*d*) sea-water, plus nitrates. By determination of free and albuminoid ammonia and nitrates in these mixtures before and after the seaweed had been in contact with them the power of assimilating nitrogen which the weed possesses was found to be remarkably high. During these experiments the weed remained in perfect health and is still growing nine months since the commencement of the experiments. 3. The localities where ulva latissima abounds and from which it is virtually absent. It is in abundance in Belfast Lough, but is entirely absent from the neighbouring Strangford Lough, which is similiar in area and in many other respects to Belfast Lough, but differs from it in not being extensively polluted by sewage. In Dublin Bay the seaweed is found in abundance in the harbour, which is highly polluted, but not in the southern parts of the bay, which receive no sewage except near Kingstown, where a large sewage tank discharges at the ebb tide. There the weed occurs. The evidence which Dr. Letts and Mr. Hawthorne have collected tends to the conclusion that the occurrence of ulva latissima in quantity in a given locality is an indication of sewage contamination and there can be no doubt as to the power which the weed possesses of absorbing nitrogen compounds from polluted sea-water. While thus acting as scavenger it may itself give rise to a very extensive nuisance. These experiments are of great interest because they localise and explain the cause of the horrible odour existing on the shores of Belfast Lough. When the Belfast corporation got their last Bill passed they were obliged to introduce a clause binding them to purify their sewage, which empties into the lough, so as to remove the smell from its shores. They propose to do so by bacterial beds, but as they have made no experiments as to the effect of the effluents from these beds on this "ulva latissima" the smell may still exist as badly as ever. They should first see the effect of growing this seaweed in the effluent.

## RECOVERY FROM LEPROSY.

IN the June number of the *Polyclinic* Mr. Hutchinson relates a number of cases showing that recovery from leprosy is possible. He expressly guards himself against captious criticism by explaining that by recovery he means termination of the disease process, not removal of its effects. In one case shown by him at the Polyclinic the patient was a soldier who had served in India. The patient had had anæsthetic leprosy of the forearms and legs. The hands and feet were dusky from passive congestion and discoloured by the brown patches of leprosic erythema. A remarkable but not unprecedented fact was that he did not notice any patches until eight years after returning to England. The treatment, which was carried on for 10 years, consisted in the administration of small doses of arsenic, a liberal diet, and abstinence from fish. After 18 months the patches had disappeared. From that time there was slow restoration with absolute abeyance of symptoms. His hands became less dusky and numb. Now the patient can use his hands well and they show no conspicuous changes. They look flabby and the smaller muscles are somewhat wasted. There is permanent anæsthesia of the hands so that the patient often burns himself unconsciously. The feet are similarly affected in less degree. All evidences of active leprosy have now been absent for six years. In a second case a man was blind from leprosy and his hands were somewhat helpless from anæsthesia and muscular wasting. But he was florid and healthy looking and his skin showed no trace of tubercle or patch. For the last 10 years he had been free from aggressive symptoms. In former years leprosy was regarded as incurable, but of late cases of recovery have been observed. According to Mr. Hutchinson they have chiefly been observed in countries where leprosy is not endemic and in patients who migrated from the place where they acquired the disease and were therefore placed under different dietetic conditions. In 1879 Mr. Hutchinson published in the Transactions of the Royal Medical and Chirurgical Society the case of a woman who had returned from Barbadoes the subject of tuberculous leprosy. He never saw the leonine physiognomy more marked. After residing in England for some years she lost all traces of leprosy and with the exception that her hands were numb and crippled she remained quite well. She was enjoined to abstain from fish. Since then Mr. Hutchinson has seen many cases of lepers in whom all symptoms have ceased on returning to England. In America it has been noticed that a number of Norwegian lepers entirely lose their symptoms. In leper establishments in which fish has been an important article of diet little or nothing has been heard until lately of recoveries. Mr. Hutchinson considers that these facts support his contention that leprosy is due to the eating of raw fish—salted, dried, or decomposing.

## THE GOVERNMENT CINCHONA PLANTATION AND FACTORY IN BENGAL

THE official reports of Major D. Prain, I.M.S., superintendent of the Royal Botanic Garden, Calcutta, and of Cinchona Cultivation in Bengal, are interesting documents to botanists, horticulturists, and quinologists. The report of the Royal Botanic Garden, Calcutta, is for the year 1899–1900. Although the rainfall of the year was heavier than usual it did no harm to the foliage plants, ferns, and orchids, the show of which, we are told, was particularly fine. Plants of economic importance received a good deal of attention, especially rhea, a practical machine for extracting the fibre of which is said to have been invented. An investigation into the diseases to which sugar-cane is subject in Bengal is being conducted by Lieutenant A. T. Gage, I.M.S., curator of the Herbarium. The inquiry into the identity of living plants yielding Indian products of obscure origin was continued during the year with valuable results. A representative collection of the various mangoes cultivated in northern India and Bengal has been made on behalf of the Trinidad Government. As regards the report on the Government cinchona plantation and factory in Bengal the report is for the year 1898–99, from which we glean the following facts. The nursery beds of the Mungpoo Division were considerably injured by the low temperature which prevailed in January, 1899, and the mortality among the seedling plants was great. The result of the year's operations was that the total number of living plants (exclusive of the nursery stock) was 2,179,245. The crop of the year obtained from the trees uprooted in the Government plantations in Sikkim amounted to 236,098 lb. of dry bark. The bulk of the bark was of the quinine-producing sort, and with the exception of 1003¼ lb. supplied to medical depôts or sold to Government officers and to the public, the whole crop was, as usual, made over to the cinchona factory for manufacture into quinine and febrifuge. Besides the bark obtained from cropping, 131,615 lb. of bark were

purchased from private plantations in Sikkim and Southern India. The out-turn of the factory was 10,335 lb. of sulphate of quinine and 3921 lb. of cinchona febrifuge, against 10,149 lb. and 4075 lb. respectively in 1897–98. The decrease in the issues of sulphate of quinine is due to a diminished demand on the part of the medical depôts in the Bengal and Punjab commands, to the transfer to the Madras factory of the obligation to supply the North-Western Provinces with the drug, and to the falling off in the demand by Government officers and medical missions for distribution to the poor. The decrease of 404½ lb. in the issues of cinchona febrifuge is attributed to the fact that Government officers took smaller supplies than in the previous year. The stock of sulphate of quinine in hand at the close of the year was greater by 1569 lb. than it was at the close of the year 1897–98. The superintendent, Major D. Prain, I.M.S., and also Mr. R. Prantling, the deputy superintendent of the Cinchona Plantations, received the thanks of the Government of Bengal for their efficient management of the plantation and factory.

## THE CONCILIATION BOARD AND THE BRITISH MEDICAL ASSOCIATION.

IT seems as if the honours in respect of a Conciliation Board were to be equally divided between the General Medical Council and the Council of the British Medical Association. The General Medical Council has the honour of having done much to bring the Conciliation Board within the lines of medical politics. The Council of the British Medical Association has the honour of having with a stroke of the pen and at the fag end of an exhausting meeting dismissed the principle. One of the small general meetings of the Association could not have acted with more apparent irreverence towards a principle in which many sensible people see the solution of perplexing problems in general as well as medical politics. Perhaps there is some misunderstanding on the subject. The Council of the British Medical Association has still, we believe, a committee of experts on the subject. We shall patiently await their report before judging the action of the Council.

## EXPERIMENTAL STUDY OF CHILDREN.

THE annual reports of the United States Bureau of Education always contain some valuable scientific papers, either produced in America or compiled from materials collected in other countries, together with a general account of educational progress. We have before us a reprint from the report for 1897–98 in which Dr. MacDonald explains the methods he employs in the study of mental averages and inequalities. Different means of studying mental potentialities have been employed by observers. The clinical method consists in observing children by inspection of the development of each feature—the head, the height, and weight, &c., while brain activity and power are estimated by motor expression, response, and coördination; this method has led to practical results. The anthropometrical method and the use of instruments of precision for measurement and time reaction as employed by Mr. Francis Galton and many other observers have given us much accurate knowledge of facts concerning growth, but the results of summarisation do not appear to afford the desired information concerning mental ability and potentiality. A third method of study is by purely psychological inquiry, such as answers to written or oral questions and the recollection of adults of their experiences in childhood; such methods have been used in America by Dr. Stanley Hall, Professor Earl Barnes, and many others, and they have led to some knowledge of the character and methods of thought among children, while indirectly certain deficiencies in current child-literature and teaching have been clearly brought to light. The modes of procedure employed by different observers differ almost as much as the methods of study. Some inquirers examine all the children in each school selected; others look only to find children of a certain class, or note groups of children selected by the teachers. Dr. MacDonald's investigations are mainly conducted by the use of instruments for measurement of the body and of the sensitiveness of the surface to touch and pressure. His list of abnormal points for observation is curiously wanting in arrangement and classification, containing in succession "expression, hand balance, nutrition, pigmentation, ptosis, rachitism, epilepsy, lordosis, &c." A large number of facts are however, recorded in tables and diagrams, presenting much information. Some of his conclusions agree with those established by other observers—viz., that all forms of cranial abnormality are co-related with mental dulness; that the children of the labouring classes (poorer children) are less delicate—or at least not more delicate—than those of the upper social classes; and that several abnormalities in growth are often associated in the same child. This is markedly characteristic of imbeciles. There are certain well-established constitutional differences between boys and girls, the former presenting a larger proportion deviating from the average, while there is a smaller proportion of dull girls than boys. This proposition is important in many ways and is admirably illustrated by Mr. G. Udny Yule in a recent paper published in the Philosophical Transactions "On Association of Attributes in Statistics, with Illustrations from the Material of the Childhood Society, &c.," drawn from Dr. Francis Warner's observations and papers in the Journals of the Royal Statistical Society. Dr. MacDonald's book contains a full illustrated catalogue of anthropometric instruments collected from all countries, also a useful bibliography of the American and European literature of child-study.

## WORD-DEAFNESS, WITH SPECIAL REFERENCE TO THE "NAMING CENTRE" IN THE BRAIN.

DR. GRAEME M. HAMMOND has published in the *Journal of Nervous and Mental Diseases* for July, 1900, an account of a case which appears to throw an interesting light on the localisation of the so-called "naming centre" in the brain, the existence of which was first postulated by Sir W. H. Broadbent and subsequently confirmed by a case reported by Dr. C. K. Mills of Philadelphia. In a former case recorded by Dr. Hammond and referred to in these columns[1] the man made an excellent recovery from the operation of trephining and soon regained the power of naming objects, but the word-deafness had never entirely disappeared and he found it difficult to pronounce words of three syllables or more. The following case is that of a man, aged 40 years, who was taken into the Charity Hospital, New York, on Jan. 9th, 1900, in a comatose condition. He soon recovered from the coma and there was no motor weakness or marked disorder of sensibility. The special senses appeared to be unimpaired. He was almost completely word-deaf and completely word-blind, besides being unable to write a word (agraphia) from dictation or copy a simple geometrical figure. He was, however, by no means stupid. Dr. Hammond thinks that if the patient had lived a diagnosis of lesion of the superior temporal convolution and of the angular gyrus would probably have been made, and yet neither of these regions had been implicated at all, as shown by the necropsy which revealed a softening of the middle third of the second temporal convolution, a position intermediate between the auditory word centre and Dr. Mills's "naming centre," the latter being located by Dr. Mills in the inferior or third

[1] THE LANCET, Feb. 24th, 1900, p. 552.

temporo-sphenoidal convolution. Dr. Hammond wished to emphasise the fact that in a given case of word-blindness or word-deafness it was not possible to say definitely what was the exact site of the lesion "further than that it involved some part of the speech area." In the discussion following the reading of the above communication at a meeeting of the New York Neurological Society Dr. Joseph Fraenkel stated that he had at present under observation a syphilitic man, aged 40 years, who suffered from impaired mental faculties and a spastic paralysis of the right upper extremity. In addition he was absolutely unable to name any object shown to him, but he could define the uses of the object. In this case Dr. Fraenkel felt convinced that there was a lesion in the arm centre sufficiently large to encroach slightly upon the speech centre. A slight lesion in the speech area would lead to marked disturbance of the higher and more complex functions associated with speech.

## HERTFORD BRITISH HOSPITAL IN PARIS.

THIS hospital, on the death of the late Lady Wallace, was transferred to Her Majesty's Government who have appointed a committee to manage it consisting of the Honorable Michael Herbert, C.B., Mr. Austin Lee, C.B., Mr. A. Percy Inglis (Her Majesty's Consul-General), Mr. John Pilter, and Mr. Alfred Coleman. Her Majesty's Office of Works recently instructed Professor Corfield, Inspector of Buildings for the Department, to investigate the sanitary arrangements of the institution, and he has reported that in his opinion the hospital, which had been closed for temporary repairs, cleaning, &c., should not be reopened until extensive alterations have been made in the present sanitary arrangements. Meanwhile, to obviate any inconvenience which may result from the non-admission of urgent cases among the British poor resident in Paris, instructions have been given to the resident medical officer to take immediate steps to obtain admission to a suitable French hospital for any such applicants.

## THE CEREBRAL SYMPTOMS OF POISONING BY GAS.

ON Friday, Sept. 14th, four persons living in the suburb of Tottenham, in North London, were poisoned by gas that had escaped in a bedroom, with the result that two of the cases ended fatally and the other two sufferers only recovered after being taken to the hospital and medically treated. In a recent number of the *Neurologisches Centralblatt* (No. 13, 1900), Weygandt has published an account of his experiences of poisoning with the products of combustion of gas in an unventilated room. He heated the air in a bathroom by using a gas-stove, and then proceeded to heat the bath water by the same method. He allowed the air of the room to get vitiated to such an extent that a candle would not burn in it. He then stripped off his clothes and entered the bath. As he entered the room he states that he felt a pulsation in the temples, ringing in the ears and dizziness, and a feeling of anguish and distress. He was soon compelled to leave the bath, though he had no clear recollection of this, and went to his bedroom, where he became unconscious. On regaining consciousness he found himself lying on the floor. He now suffered from vertigo and intense headache, and had a general feeling of apathy and utter indifference to things around. He imagined at the time that he had had an epileptic attack. He rose up and went into another room and again became unconscious. On coming to he found that he had vomited, and was now feeling extremely weak and hearing a roaring sound in the head. He sent for a medical colleague, and when the latter arrived he (Weygandt) stated that he thought he was suffering from gastric irritation and poisoning due to some preserves he had eaten. Shortly afterwards, however, his recollection grew clearer and he was able to state the real cause—viz., poisoning by the products of combustion of gas in the bathroom. In cases of poisoning by ordinary illuminating gas the symptoms appear to be somewhat similar—viz., giddiness, præcordial distress, and shortness of breath (dyspnœa) soon passing into unconsciousness. The intense headache and the vertigo experienced after recovery or resuscitation are also characteristic of both kinds of poisoning. In Weygandt's case it was interesting to note the condition of amnesia for the events preceding each attack of unconsciousness, and for the gastric irritation and vomiting which preceded recovery. The practical lesson to be learnt is the necessity of having a full ventilation in sleeping-rooms and in bathrooms, and especially in the latter when gas-stoves or geysers are used to warm the air of the room or the water of the bath itself.

## DEAD BODIES AND PASSERS-BY.

A CURIOUS piece of evidence, but one by no means without precedent, was given recently before the coroner for Market Drayton. The inquest was upon the body of a man which had been found head downwards in a small well or pit full of water sunk in a ditch by the wayside, and it was admitted by a witness that he had seen the deceased in this position and had made no attempt to extricate him, preferring to leave what might or might not at that time have been a dead body for the police to deal with, and proceeding to inform them accordingly; moreover, from the remarks of the coroner it was believed that other persons had exercised an equally ill-judged forbearance. This hesitation on the part of uneducated persons to interfere with what is apparently a corpse arises perhaps in some measure from a superstitious dread of handling a dead body, but has no doubt been encouraged by the attitude of the police, who, from the point of view of detectors of possible crime, not inexcusably prefer to see the body in its original position and to be able to search for traces of the criminal before such traces may have been removed without being properly observed. There is also some risk that the passer-by who endeavours to be the first to render assistance where a crime has been committed may himself be seized upon by a second arrival as being the criminal himself. It is painful to believe that a confusion thus arising in the minds of the ignorant may induce them to consider that they are under legal obligation to inform the police rather than to assist a fellow creature who may still be alive and within reach of succour, but at the same time it is consoling to reflect that only the very ignorant or the brutally indifferent would refrain from immediate action in circumstances such as those described at Market Drayton. Not to help a man still obviously alive would imply a callousness which is hardly human and which we hope is very rarely if ever met with.

## A GERMAN MILITARY HOSPITAL.

THERE is a very well-executed plan, or rather model, of the new military hospital at Potsdam in the German section of the Paris Exhibition, and all visitors interested in army hygiene are presented with a pamphlet containing a full description of the establishment. The following particulars have been extracted from this document. The Royal Military Hospital of Potsdam stands upon elevated ground 1200 metres to the north of the town and about the same distance from the barracks. The enclosure contains nearly 12 acres, of which space the buildings occupy about one-eighth part, the remaining seven-eighths being taken up by roads, pathways, yards, and gardens. The total number of

beds is 309, including three for officers, each bed being allowed 9·5 square metres of floor space and 38·5 metres of cubic space. There are in all 14 blocks, the cost of construction per bed, without counting the price of land and material, having come to 4469 marks, or nearly £220 sterling. The cost of furnishing and equipment came to an additional 133 marks, or about £6 10*s*. per bed. In the machinery annex a sufficiency of power is generated to carry on the following operations, the transmission of force being effected through underground conduits. *a*. Warming by means of hot air or steam at low pressure. In the administration block coal in earthenware stoves is used. *b*. Ventilation. 60 cubic metres of fresh air per bed per hour are supplied, the air being filtered in a basement and either cooled or warmed according to season. For the removal of vitiated air aspirating chimneys have been provided in the walls. *c*. Elevation of water from deep wells on the premises and storage in tanks in the kitchen block. *d*. Electric lighting throughout, except in the offices, where gas is provided. *e*. Steam cookery on the system of A. Senking of Hildesheim. *f*. Steam laundry. *g*. Hot water-supply for baths and ablution rooms. *h*. Disinfection. The resident staff comprises one medical staff officer on guard, one chief inspector, two inspectors, nine junior assistants, one cook, four under-officers of police, 26 under-officers of the sanitary corps, 14 military ward-orderlies, and one compounder. The patients are divided into four classes according to their maladies, each class having its own medical director who has the assistance of one or more junior medical officers. The research laboratory is fully equipped in every way according to the most modern of ideas and in like manner the operation theatre is fitted with the most recent appliances and instruments. Special provision has also been made with a view to the medico-mechanical treatment of injuries and deformities, including massage, and there is a complete installation for the treatment of disease by electricity. Finally, the hospital and all that it contains are placed under the direction and control of a medical officer in chief who is held responsible for administration, including the maintenance of good order and discipline.

## THE SPREAD OF INFECTION.

EXACTLY how to bring home to the working classes the necessity of isolating cases of infectious disease is one of the most perplexing problems of our present-day public health administration. In spite of popular lectures, of the wholesale distribution of leaflets, and even of the warning conveyed by occasional more or less heavy police-court fines, the history of nearly every epidemic demonstrates that "personal infection" plays a most prominent part in keeping the outbreak alive. One of the most flagrant instances of callous indifference to the spread of infection that has been brought to our notice comes from the Rhondda Valley in South Wales where a grocer's wife was fined last week for exposing herself in her husband's shop while suffering from scarlet fever. It appears that at the end of July she herself, three children, and a servant were attacked with scarlet fever and that one child died. It might be supposed that this last fact alone would have impressed her with the serious nature of the illness and that she would have been especially careful not to pass it on to her neighbours, but her conduct shows that she was quite unconcerned as to what happened to them. The woman was taken ill on July 25th and the sanitary inspector visited her house and gave the customary verbal and printed instructions as to isolation, laying especial stress upon the danger attaching to her taking part in her husband's business. Ten days after this she was seen by the inspector serving in the shop, and upon his representing to her the serious risk to which she exposed those with whom she came in contact she undertook to confine herself to the house for the requisite period. At the end of three weeks from the onset of the disease she was again seen in the shop by the medical officer of health who there and then examined her and found that she was profusely peeling and was in an undoubtedly infectious condition. Notwithstanding that she was told at this time that she would be prosecuted and that if she were again seen in the shop the fact would be pressed before the magistrates she was seen serving customers upon two subsequent occasions. The fine of £3 with costs amounting to 10*s*. inflicted by the stipendiary magistrate will hardly under the circumstances be considered excessive; indeed, it is almost justifiable to regret that section 126 of the Public Health Act, 1875, permits only a pecuniary fine and does not allow a term of imprisonment to be imposed. If a collier is found in a mine with a match in his possession he is sent to prison for imperilling the lives of his fellow-workmen, and it is not unreasonable for him to require that his wife and children when they go to purchase the household groceries shall not have their lives imperilled by such criminally thoughtless conduct as that upon which we have commented.

## BRITISH MEDICAL BENEVOLENT FUND.

AT the September meeting of the committee of management 17 urgent applications for help were considered, but the balance available for grants was only £88 2*s*. 7*d*. Dr. Swallow of Clapham was elected an honorary local secretary and the committee will greatly appreciate offers of help from members of the profession willing to accept this office. Four annuitants were elected to fill vacancies caused by deaths since the last meeting. It is hoped that friends of the fund who have not yet done so will send in their subscriptions for the current year and also endeavour to interest others in the work of the charity.

## ALARM OF CHOLERA IN SYRIA.

WE learn from our Constantinople correspondent that on Sept. 12th Dr. Coussa of Aleppo telegraphed to the health office in Constantinople that cases resembling cholera had occurred in the village of Tcherkess-Ouchaghi, near Alboustan. All the patients died within 24 hours. The municipal medical officer of Marach and another medical man immediately proceeded to the place to investigate the circumstances and to ascertain the nature of the disease. They were also authorised to carry out all requisite measures of disinfection and to isolate patients suffering from illness of a doubtful character.

## CEREBRAL TUMOUR WITH UNUSUAL OCULAR SYMPTOMS.

DR. MAX LINDE in a recent publication[1] records what is probably the first case of a cerebral tumour producing hemianopsia in one eye, in which the disease was verified by necropsy. The case was that of a man who suffered from symptoms of loss of smell and partial paralysis of the right external rectus muscle. There was some failure of memory. The affected eye was hemiopic, with preservation of macular vision, and Wernicke's hemiopic pupillary symptom was elicited. Ophthalmoscopic examination showed the presence of double optic neuritis with choked discs. The tongue when protruded deviated slightly to the right. The necropsy revealed a tumour of the brain in the region of the hippocampal and uncinate gyri on the right side and pressing upon the right abducent (sixth) nerve. This nerve was partially atrophied. The optic tract of the left side was apparently enlarged from the growth of the tumour which infiltrated its substance, and

[1] Monatsschrift für Psychiatrie, No. 7, 1900.

examination with Marchi's method demonstrated the presence of degenerated fibres (staining black) in the optic chiasma and in the inner part of the right optic nerve, thus accounting for the uniocular hemianopsia. The localisation of the growth in the uncinate and hippocampal gyri also served to explain the early symptoms of loss of smell. The position of the tumour was such as to render its removal by surgical operation impossible.

THE prize of 15 guineas offered by the Cancer Society, 315, High Holborn, through the liberality of Miss Scott, for the best original essay on the present state of "cancer science" has been awarded to Mr. Alexander Fraser, M.D. Aberd., of Queen's Park, Manchester, the adjudicator being Mr. George Brown, M.R.C.S. Eng.

THE autumn meeting of the Northern and Midland Division of the Medico-Psychological Association will be held at the Newcastle City Asylum, Gosforth, on Wednesday, Oct. 3rd, 1900.

THE opening address at the London School of Tropical Medicine, Connaught-road, Albert Dock, will be delivered by Sir William McGregor, M.D. Aberd., on Oct. 3rd at 9 P.M.

A REUTER'S telegram of Sept. 14th from Brisbane states that three fresh cases of plague have occurred there, bringing the total up to 123, with 53 deaths.

## THE WAR IN SOUTH AFRICA.

WAS there ever a time when the daily press contained such an amount and such a variety of exciting news as at the present moment? Editors must be surfeited with the harvest of subjects and intelligence arriving from all quarters. The flight of ex-President Kruger, the rapid and, it may even be said, the tumultuous progress of the war in South Africa to its inevitable end, together with the telegraphic summaries of the evidence given before the Royal Commission; the stirring events in China, the West Coast of Africa, and elsewhere; the plague in Glasgow and its progress abroad in different parts of our Empire; the dissolution of Parliament to be rapidly followed by a general election—these form only a part of what meets the eye of the readers of morning and evening papers. There is not much need to have recourse to any news not "officially confirmed" in order to fill the columns of our newspapers. The result of it all if absorbing is rather bewildering and not conducive on the whole to habits of steady or concentrated attention or thought and in a general way, perhaps, unwholesome, but there it is and it is unavoidable.

We need make but little reference to the military events in South Africa, because we shall have been forestalled by what has appeared elsewhere in the daily press and such events are just now moving too rapidly to keep pace with them. Touching the South African Royal Commission we may say that the Commissioners have already accumulated a large amount of evidence at the scene of the war and have inspected most of the military hospitals there. Their work in South Africa will consequently soon be coming to an end, when they will return to this country, examine some other witnesses, and then proceed to sift the evidence and to formulate their report. We have no desire, and it would be improper, to anticipate the result. The investigation is in excellent hands and the legal training and ability of its president will ensure that the evidence is thoroughly sifted, weighed, and considered.

As we have said elsewhere, assuming Mr. Burdett-Coutts's allegations to have been correct, they were painful reading. It cannot be otherwise than distressing at any time to picture sufferings which are more or less inevitable in war, but to be told that they were such as might and should have been prevented or greatly mitigated seemed intolerable to people in this country. It was no wonder, therefore, that there was great anxiety to know what Lord Roberts had to say in the matter, and having learned his opinion and that of others who are in a position to know there is a natural feeling of great relief.

As regards Dr. Leigh Canney's communication to the *Standard* on the prevention of diseases in war, which has deservedly attracted a good deal of attention, we may take this opportunity of making a few remarks. It goes without saying that everyone must sympathise with the object which he has in view, and as there is sure to be hereafter a departmental inquiry into many questions connected with the field medical service and the Royal Army Medical Corps Dr. Canney cannot do better than take that opportunity for submitting his proposals for consideration. Some such idea must have frequently suggested itself but failed of being carried out owing to the practical difficulties in the way of doing it. Although it is probably quite true that in the case of South Africa the enteric fever epidemic was attributable to water pollution on a large scale it is not at all clear that this fever is always water-borne—or, in other words, that water is the sole and exclusive vehicle of its spread. If we may judge from their statements it has not been the experience of medical officers in India and elsewhere that immunity from disease can be guaranteed by the use of boiled water or of filters. As a matter of fact it has been found extremely difficult to keep the Pasteur-Chamberland or any other really efficient bacteriological filter in perfect working order on field service or to obtain promptly all the amount of filtered water that is required under the conditions of a campaign conducted on a large scale. It is also alleged to be a matter of experience that troops at the end of a long and fatiguing march will not act on the warnings given to them—the fact being that thirst dominates everything else for the time being under such circumstances. We fear that soldiers would not, consequently, be content to wait for even the half-hour required for the supply of the boiled water, and the movement and presence of dust in the atmosphere (dust storms) would probably soon nullify the sterilisation of the water. Moreover, we entertain some grave doubts as to the practicability of the transport and application of the means and appliances required for the efficient carrying out of these proposals—especially in the case of forced marches and rapid movements. *The* difficulty in all wars is invariably transport, and if military success is to dominate all other considerations in war supplies of food, forage, and ammunition must be forthcoming when and where they are wanted. If we could only get our enemy always to wait until we were ready with the necessary hygienic arrangements there would be no excuse for being unprepared. This is never likely to be the case, and however much we may be alive to the fact that contaminated water and soil and camp diseases are always and everywhere intimate associates it does not help us to know beforehand the particular place and time of their occurrence. Still, that is no reason why we should not apply ourselves to the problem before us and welcome every practical suggestion, and in that spirit we would urge Dr. Canney to put forward his proposals for the consideration of those more immediately concerned with the question which he has taken up.

### TREATMENT OF BRITISH PRISONERS OF WAR AT PRETORIA.

As mentioned in THE LANCET last week, the War Office published under the above heading on Sept. 12th a series of despatches, paged from 1 to 13, from which the following passages are taken, including the evidence of the medical witnesses in full.

From Field-Marshal Lord Roberts to the Secretary of State for War.
Army Headquarters, South Africa, Pretoria, June 27th, 1900.

SIR,—I have the honour to submit for the information of the most Hon. the Secretary of State for War a letter, dated June 7th, 1900, from Lieutenant-Colonel H. V. Hunt, R.F.A., to the Chief of the Staff, South Africa, reporting on the treatment of the prisoners of war at Pretoria and the proceedings of a Court of Inquiry which I directed to be assembled at Pretoria on June 11th to investigate the subject.

2. As regards the opinion recorded by the Court I would remark as follows:—

(*a*) I concur in the view that the treatment of the officers of the regular forces who were captured by the Boers appears to have been fairly good.

(*b*) That some of the prisoners who belonged to colonial corps raised in South Africa should have been confined in the gaol and

treated as criminals is opposed to the usages of civilised warfare, and the same remark applies to the British subjects residing in the Transvaal who were similarly treated because they refused to take an oath of allegiance to the South African Republic.

(*c*) The food of the non-commissioned officers and men is shown to have been quite inadequate in quantity and inferior in quality. There was no excuse for this, as supplies of excellent meat, bread, and vegetables are easily procurable in the Transvaal at a moderate price.

(*d*) That greater facilities were not given for religious ministration is much to be regretted.

(*e*) The inhuman treatment of the sick prisoners throws the greatest discredit on the authorities at Pretoria who must have been aware that proper hospital accommodation and equipment had not been provided, that suitable food and medical comforts were not forthcoming, and that the supply of medicines and medical appliances was wholly insufficient. That the deficiencies referred to in the correspondence were to some extent made good by the exertions and liberality of private individuals does not exonerate the Government of the South African Republic from its responsibility in this matter, and the indifference which was shown to the sufferings of the sick among the British prisoners is the more inexcusable when it is remembered that the sick among the Boer prisoners have invariably received the same care and attention as our own sick soldiers.

3. The efforts of Doctors P. H. Haylett and R. von Gernet to ameliorate the condition of their patients and the assistance rendered by the gentlemen mentioned in the latter's evidence, prominent among whom was Mr. J. Leigh Wood, officiating manager of the Natal Bank at Pretoria, are the only gratifying features in this correspondence. On the other hand, it would be difficult to condemn too strongly the conduct of Dr. H. P. Veale, M.B. (Cambridge), whose heartlessness in ignoring the disgraceful treatment of the sick prisoners and the remonstrances addressed to him by the medical officers in immediate charge of them calls for the severest reprobation.

I have the honour to be, Sir, your most obedient servant,
ROBERTS, Field-Marshal, Commanding-in-Chief,
South Africa.

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From Lieutenant-Colonel H. V. Hunt, R.F.A., to the Chief of the Staff, British Forces in South Africa.

Pretoria, June 7th, 1900.

SIR,—I have the honour to report that I joined the main body of the officers who were prisoners of war on Dec. 22nd, 1899. They were then located in the Staats Model School, a well-built and commodious building and capable of holding about 100 officers comfortably—there were at that time about 70. The scale of rations for officers is attached (marked A), and they were permitted to supplement this by private purchases and a regular mess was established. * * * * I do not consider that the officers as a body have any real cause to complain of their treatment. * * * * I regret to say that I am unable to make such a satisfactory report as regards the treatment of the men. The scale of rations (copy attached, marked D),[1] already far too low, was frequently reduced. The one pound of meat often dwindled to considerably below that amount, and eventually had to be supplemented from the fund of which mention is made in copy of correspondence marked E.[2] For 14 days in February they were without tea or coffee. No meat was issued from Jan. 1st to 14th; the supply of vegetables was latterly quite cut off, as well as firewood from May 27th. * * * * But far more serious is the way in which our sick were treated. * * * * There were two hospitals, one at Racecourse and one at Waterval. At the former some beds were provided, but not sufficient, and no mattresses; at the latter nothing of the sort was given. When first occupied the shed was roofless and men with fever lay on a blanket, with their boots for a pillow and running water at their side. No medical comforts of any sort were provided and till the arrival of Dr. von Gernet, about the end of February, the condition of affairs was absolutely scandalous. I am sure that a great responsibility for this rests on Dr. Veale, who, as head of the Red Cross, was unwilling to risk trouble with the Government and imperil his own position. Dr. von Gernet is, however, a man of another stamp, and, first insisting on having the hospital in his own hands, he set himself to improve matters and worked so hard that his health at one time entirely gave way. * * * * I omitted to mention that after great difficulty a list, completed up to April 20th, was furnished to the officers of the number of deaths, which then amounted to 50, and I believe six more have since occurred. The burials in these cases were always carried out by a sergeant, no minister being informed of them.

The men had great difficulty in reporting themselves sick, being frequently refused admission till so ill that they had to be carried to the hospital, and the accommodation was so limited that there were a large number of out-patients who should have been admitted.

The general opinion of the men is that they have received very bad treatment on above grounds.

I have the honour to be, Sir, your obedient servant,
H. V. HUNT,
Lieutenant-Colonel, R.F.A.,
Senior Officer of British Prisoners of War.

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Extract from proceedings of a court of inquiry assembled at Pretoria on June 11th, 1900, and following days, by order of Lieutenant-General Tucker, C.B., commanding 7th Division, South African Field Force, for the purpose of inquiring into the treatment of British prisoners, but more especially the treatment of sick prisoners in the hands of the Boers in and near Pretoria.

President.

Lieutenant-Colonel W. E. Briggs, 2nd Battalion Hampshire Regiment.

Members.

Major E. Herapath, 2nd Battalion Lincolnshire Regiment.
Major A. C. Becher, 2nd Battalion Norfolk Regiment.

The court, having assembled pursuant to order, proceed to take evidence.

Dr. P. H. Haylett, M.B. London, makes the following statement:—

In the middle of December, 1899, I was verbally instructed by Dr. Veale, the chief medical officer for military prisoners, to take charge of the hospital at the Racecourse. At this time most of the prisoners had been moved to Waterval, but the sick remained at the Racecourse. At the time I took over charge at the Racecourse there were about 60 sick. There was no adequate provision of medicines, considerable difficulty in obtaining stimulants, and no means (scrubbing brushes, &c.) of keeping the hospital building clean. I also had to complain of refuse from the hospital, such as decomposed vegetables, being left close to the building for an unnecessary length of time. The patients lay on straw mattresses on bedsteads, there were no sheets, and few pillows. The food supply was fair. I made no official complaint as regards this hospital, but sent in repeated requisitions for articles which were not complied with.

In the first week of January, 1900, I was sent out to Waterval as resident medical officer for the prisoners of war there. On the third day of my residence at Waterval I reported in writing to Dr. Veale condemning the sanitary arrangements and the water-supply, the hospital building and its equipment, in the strongest possible terms. As a result of this letter a Commission was appointed to investigate these matters, consisting of the Prisoner's Commission and Drs. Veale and Lingbeek. This Commission went out to Waterval to investigate the matter and view the hospital. At the railway station *en route* Dr. Veale suggested that I should not accompany the party, but this was overruled by the Field Cornet and I did accompany the party.

The result of this visit was a decision that the main hospital for the prisoners should be on the Racecourse and that the Waterval hospital should be only a collecting station. The President, South African Republic, strongly objected to this suggestion. Dr. Veale was equally strongly insistent on the Racecourse hospital being the main hospital.

Shortly afterwards I was ordered back to Pretoria, leaving no resident medical officer at Waterval. I resumed charge of the Racecourse hospital.

On Jan. 8th I wrote a letter to Dr. Veale, which is attached (this letter is signed by the President, Court of Inquiry, and marked M).[3] My next letter (marked N)[3] was written on Jan. 14th to Dr. Veale. It was now decided that Dr. Van der Horst was to take charge of the Racecourse hospital, while I was again to go out to Waterval as resident medical officer. On the 20th I went out there. On Jan. 22nd I sent Dr. Veale the attached report (marked O).[3] This letter, as also my preceding letters, elicited no reply and was followed by no improvement. On Feb. 6th I wrote Dr. Veale another letter which his secretary put into Dutch because he (Dr. Veale) objected to my letters being in English (this letter is marked P and attached).[3] To this letter I received also no reply. Between this date and my resignation of my appointment at Waterval I wrote to Commandant Hermann bitterly complaining of the want of meat and milk for the hospital. No result attended. I then resigned my appointment in a letter written in Dutch (marked Q).[3]

During the period I was resident medical officer at Waterval Dr. Veale did not visit the hospital except on the one occasion that he accompanied the Commission. My services to the British prisoners of war were entirely gratuitous.

Rudolph von Gernet, doctor of medicine, is examined by the Court and makes the following statement:—

On Feb. 19th, 1900, I received a letter from the Landroost of Pretoria informing me that on the recommendation of Dr. Veale I was appointed resident medical officer to the British prisoners at Waterval, to replace Dr. Haylett, who had resigned. I went about Feb. 20th to Waterval, where I found Dr. Haylett, and in company with him I inspected both the camp and the hospital. In the camp I found the prisoners housed in sheds built of strips of corrugated iron, open towards the front, and by reason of the corrugated iron sheets being old letting in the rain through the roof. The central road being higher than the floor level of the sheds the rain water drained into them. The men consequently in wet weather (and this was the rainy season) were lying in water. Each man had one blanket. There were no waterproof sheets and the men were lying on the bare ground.

The streets were in an indescribably filthy condition, rotting animal and vegetable refuse, and even human excrement, lay freely all over them, and the stench was awful. The latrines consisted of trenches seven or eight feet deep within 50 yards of the night camp in which the men slept. The heavy rain filled these trenches and the contents were floated all over the place.

The supply of drinking water was insufficient. It was stored in large tanks and I found men were in the habit of drinking indifferently from the drinking water-tanks and washing water-tanks and also of using the drinking water-tanks to wash their clothes in. The washing water was quite unfit for drinking. There was no organisation or discipline in these matters.

The prisoners' clothes were in rags, some being without trousers, others without coats or boots. The food supplied to the men was quite insufficient. Meat was only issued twice a week, and then only half a pound at a time. The result was that the men became very weak and liable to disease and I had to admit several men to hospital simply from weakness from want of proper food. They had plenty of flour. Men washed themselves and their clothes in the street, bringing the water from the tanks (which were in the night camp) in buckets. This practice tended of course to the spread of disease.

The building used as a hospital was satisfactory. The furniture was absolutely unsatisfactory. For instance, with over 60 in-patients and 20 orderlies there were only 21 bedsteads, 11 mattresses, and 49 blankets. I found nearly all the sick lying on the bare floor without bedding or pillows. There were 41 typhoid cases in the hospital and no suitable medicines whatever—that is, no medicines that I could prescribe for typhoid.

The food-supply for the hospital was quite inadequate. The ration for a typhoid case (Diet I.) was supposed to be—

1 bottle beef-tea, made of 1lb. of meat.
2 bottles of milk.

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[1] See Appendix.
[2] Not printed.
[3] Not printed.

Frequently no meat was received, and consequently no beef-tea could be made. The milk seldom arrived.

Diet II. was supposed to be—

1 bottle of milk,
1 bottle beef-tea (as above),
Arrowroot, sago, biscuits, and rice[*],

but the meat and milk came irregularly.

[*]Matters being in this condition I went direct to the president of the committee, "Bewaaking Krijgsgefangenen," and told him of my complaints. He assembled the committee the same afternoon and I appeared and described the state of things at Waterval. The committee, it was evident, had not been previously aware of any complaints or shortcomings in connexion with the treatment of the Waterval prisoners. The committee became excited and sent for Dr. Veale. I was present and heard Dr. Veale asked who was the chief of the hospital at Waterval. Dr. Veale answered that he himself was the chief in his capacity of medical officer to the Staats Artillery. Asked again who was the responsible doctor Dr Veale said, "the resident doctor." The committee next asked Dr. Veale to whom the resident doctor was responsible. Dr. Veale answered, "To the committee." Asked why he did not report complaints and supply medicines required from the hospital Dr. Veale said he had received no letters on the subject. The committee there and then decided that Dr. Veale was to have nothing further to do with the hospital at Waterval and that the resident medical officer was the chief and would report direct to the committee. Dr. Veale stipulated that the supply of medicines for the hospitals should still go through him and this was acceded to by the committee. A week later, on my reporting that medicines were not satisfactorily supplied, the committee authorised me to get my medicines where I liked. After this President Kruger was personally and constantly in communication with the committee and with Waterval district by telephone asking if the prisoners had everything they required. After Dr. Veale's connexion with the hospital ceased I obtained from the committee the cleaning and levelling of the streets of the camp; the making of proper latrines; the supply of a second blanket and a stretcher to each man; the supply of boots and clothing; and the placing of the drinking-water supply, by sinking more wells, &c., on a satisfactory footing; and an increase in the meat. There were other necessities for the sick, such as milk and stimulants, which I was unable to obtain in sufficient quantities or fast enough from the Government. These and everything else I could possibly want I obtained from Mr. Leigh Wood. The average of deaths to the total number who passed through the Waterval hospital is 6 6 per cent.

I should like to have recorded the names of individuals who afforded me the greatest assistance in remedying the dreadful state of affairs I first found at Waterval:—

Mr. Kalt, secretary to the "Bewaaking Krijgsgefangenen."

Burghers.

Mr. Hermann, Commandant, Waterval.
Lieutenant Haupt, Secretary Rothman, Architect Van de Stadt, } On Commandant's Staff.

Prisoners.

Captain Nesbitt, Bechuana Protectorate Regiment.
Lieutenant Fulford, R.N.
Sergeant Dudley, 18th Hussars.

Civilians.

Mr. Leigh Wood and his committee.
Mr. Marks, of Lewis and Marks.
The Rev. H. W. Goodwin, Wesleyan minister.

Herbert Prior Veale, Bachelor of Medicine, Cambridge, being examined by the Court, the following questions are put to the witness and his answers are recorded below:—

*Q. 1.*—What was your position with reference to the prisoners of war at the Racecourse?

*A.*—Drs. Knobell, Lingbeek, and myself were three medical members of the Transvaal branch of the Geneva Red Cross Society. We took it in turns to take an ambulance train to the front, and when Dr. Knobell went to Natal I relieved him of the care and medical attendance of the prisoners of war at the Racecourse. This would be in November. I had nothing to do with the sanitary arrangements. It would, however, be my duty, as medical officer attending the sick, to notice and try to remedy anything in the arrangements of the hospital or its precincts which was prejudicial to health. I brought several such points to notice and consider that everything in the Racecourse hospital was reasonably satisfactory when I left at the beginning of December for the Free State.

*Q. 2.*—Were you responsible for the medical and sanitary arrangements for the prisoners of war at Waterval?

*A.*—No. I was sent over to Waterval in company with Dr. Lingbeek by the Commission at that time in charge of the prisoners to make a report *re* the sanitary arrangements, suitability of Waterval as a camp, water-supply, &c.; and we made the report to the effect that the place was unsuitable as a camp, but as the camp could not be moved we suggested a different water-supply, different latrine systems, a sanitary police as the men were behaving in a very dirty manner there. This was the only occasion on which I visited Waterval. Dr. Haylett went out with us on the above occasion. From time to time the Red Cross Committee were allowed to send out a delegate to ascertain whether they could do anything of benefit, and the delegates made written reports to the committee.

*Q. 3.*—Did you receive any letters from Dr. Haylett making complaints and suggestions with reference to the condition of sick prisoners at Waterval?

*A.*—I received no letters with reference to the condition of the prisoners but received two or three letters from him in English with regard to the supply of medicines. I was told afterwards that Dr. Haylett had written me no less than 12 letters, not one of which I received. I saw Dr. Haylett, on an average, every other day, and he never mentioned having written these letters.

*Q. 4.*—Did you or did you not receive the letter marked M from Dr. Haylett, which has now been read to you?

*A.*—I cannot say whether I received this identical letter or not, but I did receive some letters from Dr. Haylett before the date of my visit to Waterval, which referred merely to the supply of medicines. I consider this letter to refer merely to the supply of medicines.

*Q. 5.*—Can you recollect answering any letter that you received from Dr. Haylett?

*A.*—I cannot recollect answering any particular letter, but I will undertake to produce my letter-book, in which copies of all letters written by me are kept, and if I ever wrote to Dr. Haylett copies of my letters to him will be found there.

*Q. 6.*—Did you receive the letter marked N, or the letter marked O, which have now been read to you?

*A.*—No. I have never seen or heard the contents of either of these letters before.

*Q. 7.*—Did you receive the letter in Dutch marked P which is now handed to you?

*A.*—I did receive the letter marked P and forwarded it to the Commission.

*Q. 8.*—Did you answer this letter to Dr. Haylett?

*A.*—This letter was written in my own office and any answer would be verbal. The letter was written for the purpose of being forwarded by me to the Commission.

*Q. 9.*—What is your own opinion as to the extent of your connexion with, and responsibility for, the hospital at Waterval?

*A.*—I do not consider that I had any responsibility whatever, and my only connexion with the hospital was that I was practically a supplying chemist and Dr. Haylett drew his medicines through me.

*Q. 10.*—Were you responsible in any way that the British prisoners in gaol received proper medical attendance?

*A.*—No; I was not responsible in any way. Lieutenant Tarbutt and another prisoner, a land surveyor, were brought very ill with typhoid to the Bourke Red Cross Hospital (of which I was the doctor) from the gaol and died there.

*Q. 11.*—Do you think that Lieutenant Tarbutt and the other prisoner contracted the typhoid fever in gaol?

*A.*—Yes.

[The non-medical witnesses who gave evidence before the court of inquiry were—(1) Mr. J. Leigh Wood, manager of the Natal Bank, Pretoria; (2) Rev. H. W. Goodwin, Wesleyan minister, Pretoria; (3) Mr. Johannes Jacobus Haupt, assistant commandant of the prisoners' camp; (4) Mr. Egbert Kalt, secretary to the Bewaaking Krijgsgefangenen; (5) Sergeant S. Dudley, 18th Hussars; (6) Captain R. H. Nesbitt, Protectorate Regiment; (7) Mr. C. G. Dennison, intelligence officer; and (8) Mr. C. V. de V. Van der Spuy, accountant of the National Bank at Zeerust. A letter was also received from the Rev. J. Godfrey of Pretoria stating that after the escape of Mr. Churchill he must discontinue his regular ministrations. The opinion of the court and the scales of rations are given hereunder.]

## OPINION.

The Court, having carefully considered the foregoing evidence, so far as it relates to the allegations contained in the letter of Lieutenant-Colonel H. F. Hunt, R.F.A., dated June 7th, 1900, are of opinion:—

1. That the treatment of the officers of the Imperial Army who were prisoners of war appears, on the whole, to have been fairly good.
2. That the treatment of some of the colonial prisoners was severe and unjustifiable, inasmuch as they were thrown into a common gaol and not treated as ordinary prisoners of war.
3. That the non-commissioned officers and men were very badly fed and the scale of diet (which was not even adhered to) was, in the matter of meat, a starvation ration.
4. That religious ministration was sparingly granted.
5. That the general treatment of sick prisoners was very bad and has not been exaggerated, and that there is no doubt the prevalence of sickness and the many deaths which occurred amongst the prisoners were attributable to the gross neglect of most ordinary sanitary precautions.

Signed at Pretoria this 24th day of June, 1900.

W. E. BRIGGS, Lieutenant-Colonel, 2nd Battalion Hampshire Regiment.
E. HERAPATH, Major, 2nd Battalion Lincolnshire Regiment.
ANDREW C. BECHER, Major, 2nd Battalion Norfolk Regiment.

Pretoria, June 25th, 1900.

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Deputy Adjutant-General, Army Headquarters,
I concur in the opinion of the Court,
C. TUCKER, Lieutenant-General, Commanding 7th Division.

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## APPENDICES.

### A.

Scale of Rations supplied to Officers.

Half a pound meat daily; one pound bread daily; sugar as required; salt as required; potatoes as required (supply fails sometimes); tea as required; coffee as required. Meat has generally been of very inferior quality. No sugar was supplied from Jan. 15th to March 10th, Government stating that sugar at 2*s.* 6*d.* a pound was too expensive for a ration.

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### D.

Scale of Rations supplied to Men.

Half a pound of meat twice a week; half a pound of potatoes daily; half ounce tea or coffee daily; one pound bread or biscuit daily; half pound Boer or mealie meal twice a week; about two ounces rice about twice a week; one pound fresh vegetables once a week (carrots and vegetable marrows); sugar occasionally; salt sufficient; very little pepper. Bread often sour. Supply of vegetables stopped in May.

## SOME NOTES ON THE CAMPAIGN IN AUGUST.

BY ALFRED D. FRIPP, M.S., F.R.C.S.,
SENIOR SURGEON TO THE IMPERIAL YEOMANRY HOSPITAL.

(*Continued from p. 826.*)

One of the essential differences between a civilian and a military hospital is that in the latter many of the patients are convalescent and not only need no nursing but are well enough to resent rather the restrictions upon their freedom which are entailed by the presence of a nurse. We got over this difficulty at the Imperial Yeomanry Hospital by arranging the huts and tents roughly in three classes—A, B, and C. Class A includes all the acute and serious cases and the bedridden patients. These are housed in huts. Both a day nurse and a night nurse are provided for every 22 to 34 beds (according to the size of the hut), with an "extra" sister lent for a longer or a shorter time when necessary. Thus every bad case gets a really adequate share of the nurse's attention, which cannot be ensured when one has to divide her attention among many huts or tents containing 100, or perhaps 200, cases of all sorts and degrees of severity. Class C is the "convalescent camp," and only those patients are sent into it who are on ordinary diet and taking no medicine, and who require no nursing or even temperature-taking but only the daily visit of a medical officer and the disciplinary oversight of an orderly. The patients are housed in a group of bell-tents separate from the rest of the hospital. Each tent accommodates three beds luxuriously and four with ease, while at times of stress a fifth or a sixth patient can be made comfortable. The occupants of each tent are responsible for its good order and cleanliness and for their own "service." Class B includes the patients who have recently come out of the "serious" huts in Class A, or any that are not sufficiently ill when admitted to hospital to be sent into these huts. A few of the patients are still bedridden, but none are acutely ill, for directly such a case occurs he is moved back into Class A. On the other hand, as soon as they are well enough the patients are moved on into Class C. The patients in Class B are housed in the tortoise and hospital marquees, each of which holds eight to 10, or in times of stress even 13, beds. They are looked after by the less experienced amongst the sisters (the best qualified being promoted to fill any vacancy that may occur among the staff specially selected for service in Class A), each sister on day duty having 50 beds and on night duty 100 beds (about) to look after.

This plan has worked out very well. We are never hard up for vacant beds in Class C, because we can always put extra beds into the bell-tents or telegraph to De Aar for carriages and send 100 patients down the line to Victoria West where there is a convalescent camp for 1000 men. There are similar camps for 1000 convalescents each at Bloemfontein, Norval's Pont, and Cape Town and smaller ones elsewhere along the railway line. These convalescent camps were not instituted till comparatively recently—about two and a half months ago, I believe. They have been of great service, for by enabling the hospitals to avoid blocking up their own beds with convalescents who are not yet quite fit to return to duty they probably prevented a breakdown during the height of the enteric fever epidemic. Only patients who are fully convalescent and fit to eat ordinary rations and who need no "extras" or nursing or medicine must be sent to these camps, for they are in no sense staffed or equipped as hospitals. There is a medical officer at each camp and a handful of orderlies, but the nature of the establishment is indicated by the fact that the commandant is a combatant officer.

We have never had any difficulty in providing beds in Class B. There are always a good many patients lingering there who are fit to go into Class C. Class A is where congestion is apt to occur, for the sister and the medical officer who have seen a patient through his operation or through the acute stage of his illness are naturally reluctant to "lose him," and typhoid fever is a disease which pins its victim to the same bed for a long time; but there are two very human emotions which are found in practice to compensate for this tendency and to make for the evacuation of the beds sufficiently early to ensure that there are always enough vacancies, even in Class A, to satisfy any sudden call. The first is that a sister hates to "upset her ward" by crowding in extra beds, which is her only alternative, and the second is that the patient is looking forward to his move from Class A to Class B, because it is well known to carry with it an increase of freedom (there is not the slightest doubt that the vast majority of Tommies prefer the tents to the huts) and also an alluring variation of diet. This plan has worked very well with us, and if a new army medical service had to be schemed I cannot but think that it would be a good thing to have a "convalescent camp," or Class C, attached to each non-mobile military hospital; or to put it in another way, I should like to see each non-mobile military hospital divided into two equal-sized parts. In practice it is very easy for either half to enlarge temporarily at the expense of the other when necessary. Of the two halves X (the hospital proper) would be accommodated in huts or tortoise-tents or hospital marquees, or buildings when available, and would be provided with nurses in the proportion of one to every 10 beds, while Y (the convalescent camp) would be provided with bell-tents. Since it would be a very convenient thing if a large military hospital was an exact multiple of a small one and a very good thing if large and small alike could be arranged on a plan which would permit of easy and rapid expansion from a peace to a war footing by means of the preconcerted assimilation of civilian reinforcements, I would suggest that four classes of non-mobile hospitals should be instituted. The equipment of each class of hospital should always be kept up to war strength, but only half of it should be in use while stationed at home, when it should be served by that half of the *personnel* which is detailed to it by the Royal Army Medical Corps. The other half of the equipment would only be brought into use and the other half of the *personnel* would only be appointed when the hospital was sent on foreign service, and such *personnel* would be chosen from civilians who would be temporarily attached. Convenient sizes for these four classes of non-mobile hospitals would be the following:—

| — | Class I. | Class II. | Class III. | Class IV. |
|---|---|---|---|---|
| Hospital beds: | | | | |
| On home service | 400 | 200 | 100 | 50 |
| Add when on foreign service | 400 | 200 | 100 | 50 |
| Convalescent camp beds: | | | | |
| On home service | 400 | 200 | 100 | 50 |
| Add when on foreign service | 400 | 200 | 100 | 50 |
| Total | 1600 | 800 | 400 | 200 |
| Medical officers: | | | | |
| Royal Army Medical Corps | 9 | 6 | 4 | 3 |
| Add when on foreign service— | | | | |
| Civilians qualified | 15 | 10 | 5 | 2 |
| Civilians unqualified | 14 | 8 | 4 | 2 |
| Total | 38 | 24 | 13 | 7 |
| Nursing sisters: | | | | |
| On home service | 40 | 20 | 10 | 5 |
| Add when on foreign service | 40 | 20 | 10 | 5 |
| Total | 80 | 40 | 20 | 10 |
| Wardmaids: | | | | |
| On home service | 16 | 8 | 4 | 2 |
| Add when on foreign service | 16 | 8 | 4 | 2 |
| Total | 32 | 16 | 8 | 4 |

The numbers, especially of the medical officers, are only roughly suggested. The idea is that a hospital of any size should be able to divide rapidly on emergency into two equal smaller hospitals and to despatch one of these smaller hospitals with a full staff and yet retain enough officers and non-commissioned officers to work its own beds until a reinforcing draft arrives. The equipment of one class should differ from that of another class in hardly anything but quantity. The rank of the senior officer, and indeed of the officers and non-commissioned officers under him, should of course be higher the larger the hospital. In this way steps up the ladder of promotion would be provided for on a steady scale. There should be one "sister" to every four "nurses," and promotion should be open from the latter to the former rank. I am strongly in favour of the employment of unqualified but highly-trained medical students for

foreign service. The largest or first-class hospitals would probably seldom be mobilised, but under this scheme each such equipment would easily be available for forming smaller units.

There is a good deal of difficulty in securing the services of the right class of woman to act as "wardmaid," but I think that if an endeavour was made to form such a class it would be found very useful, especially on active service. Not only do the nurses require waiting upon but there is a good deal of work of one kind and another about a hospital besides actual nursing which is better done by women than by men, notably the laundry and the dairy work.

There is a horrible custom which is apparently universal throughout South Africa (the land of empty meat-tins and of people who are too lazy to build proper drains or to bore for water) of bringing the milk to market in old glass and beer-bottles and of selling it at so much a bottle. The vendor takes no steps to clean the bottles and he considers that six of them, whether large or small, full or partly empty, are equal to a gallon. Now here was an instance in point. Until we took the collection, sterilisation, and distribution of the milk out of the hands of the army man and put it into the hands of one of the sisters the milk was continually going sour and the farmers were being regularly overpaid. But the sister very soon taught them to measure it properly and already she has saved the committee her year's salary, though she delegates the overseeing of the actual work of the dairy to whichever sister is temporarily incapacitated from work in the wards. Again, we most fortunately brought out from England Miss Cheesman to act as housekeeper and business manager to our nursing sisters. She has proved simply invaluable, for, in addition to her other work in which she has been assisted by 10 wardmaids, she has taken entire charge of the work of the laundry which, in a camp of 600 to 1200 inhabitants, is a big job by itself. It is to be hoped that the time has come when it will be considered criminal ever again to dispatch a non-mobile sanitary hospital from England without a steam steriliser and a complete laundry and large filter plant all capable of being worked by one boiler. The expense cannot matter to a country like England, and if by any bad chance it should really prove impossible to work in any particular case we should at least feel that we had done our best to put modern ideas of cleanliness at the service of Tommy when sick. To put it on the lowest possible ground it is an expensive thing to the country unnecessarily to lose men over whose training and transport and feeding much money has been spent, and it is not much good to go to the expense of keeping up hospitals and a Royal Army Medical Corps if we do not give them the best possible tools for staving off disease. "All right, try it if you like, but when you are as old as I am you'll know the uselessness of it," is a mode of damping the endeavour to bring modern methods and appliances to the service of the State which has become considerably and deservedly discredited of late. The pity is it was ever permitted to curb effort, but it is to be hoped that it is now dead, along with several other methods of doing things which this war has proved to be obsolete.

Small as has been the amount of operative surgery done here in the last few weeks I have had a few cases both of ordinary or civil surgery and of bullet-wounds which it may be of interest to record briefly. Among the former are the following:—

1. A successful nephrolithotomy urgently called for in an officer who was invalided from Pretoria with about the most continuously agonising pain that I have ever seen caused by a stone. It proved to be a small oxalate one, lying loose in the pelvis of the kidney, and its removal was attended by immediate and complete relief and was followed by perfect healing.

2. A large chronic burrowing abscess of the sacral region which rendered another officer quite unable to keep upon his horse. He had had an abscess there for four years, during which it had twice been "opened." A small caudal dimple attracted my attention and under the anæsthetic it admitted the blunt end of an ordinary small probe for an inch—passing upwards in the subcutaneous tissue of the middle line. I slit up this epithelial tube and found that it contained a wisp of hairs varying from an inch to an inch and a half in length. Their attached ends were at the skin orifice of the tube and their free ends were lying loose in the cavity of the abscess. I excised the whole suppurating area, leaving a wound from two to three inches wide and four inches long, but, as in this wonderful land it seems to make very little difference to the healing of a wound whether it be really clean or only slightly infected, I brought the surfaces together by superficial and deep stitches. Sure enough nature was equal to the occasion and immediate union occurred, not of quite the whole length of the wound but throughout enough of it to curtail very materially the time which it would have taken if the whole area had been left open to granulate up.

3. Of typhoid abscesses we have seen very little, only a few subcutaneous and parotid ones. We have only opened three abdomens in typhoid fever patients, Mr. Raymond Johnson did one, but there was advanced general peritonitis and the patient died. I have done two, the first with an exactly similar result to the last case. The second was in a vigorous, well-nourished patient who had come to us a few days before as convalescent from simple continued fever. Dr. Black, his medical officer, had taken the precaution to keep him in bed on milk diet for a few days and while still under this treatment he was seized with sudden colic. Dr. Washbourn and Dr. Black asked me to come and see him with them. The pain was localised to the right iliac fossa which was also tender and very hard and the whole of the abdomen moved very little with respiration. He had nausea, but not vomiting. There was not much evidence of shock, the pulse being normal in rate and volume. We thought it was very doubtful whether there was any perforation, but we considered that it would be safer to explore at once than to wait. I made an incision in the right linea semilunaris half way between the anterior superior spine and the umbilicus and explored the whole of the ileum and the ascending and transverse colon. All we found was (*a*) some huge mesenteric glands and (*b*) several swollen areas within the ileum on its unattached surface (the ulcers seen in our mortuary here in cases of enteric fever have often been of the hypertrophic variety). We found (*c*) one such mass making the ileo-cæcal valve feel as if there was the apex of an intussusception projecting through it, (*d*) that the appendix was some three and a half inches long and of the size of an ordinary lead-pencil and so congested that it felt like a tightly injected brachial artery in which the injection had not yet quite "set," and (*e*) that the peritoneum about the ileo-cæcal junction was acutely congested but quite smooth. I immediately sewed up the wound and primary union occurred, while the patient went through a relapse of his enteric fever. He got well and went home.

Before leaving the subject of civil surgery I would add that morphia seems, when called for, to be needed in larger doses out here than at home and that we are constantly seeing fresh cases in which head symptoms that look at first sight as if they were due to bullet wounds or to concussion rapidly cleared up under a course of iodide of potassium.

Among the cases of gunshot wound at present under my care are:—

1. An officer from whose calf Mr. Hall-Edwards's most accurate x-ray localisation enabled me to remove with great ease and rapidity no fewer than 10 pieces of a leaden bullet which were lying at depths varying from half an inch to two inches and keeping up suppuration.

2. A most interesting and severe case of bullet wound of the base of the skull. The bullet passed inwards and slightly backwards and downwards through the zygoma on the right side. There was complete facial and auditory paralysis and considerable involvement of the fifth cranial nerve all on that side. No exit wound could be found. There was such violent bleeding from the right external auditory meatus that after repeated trials of other means of arresting it I was driven to ligature the common carotid. As there was also commencing optic neuritis with rigors and some swelling just below the mastoid process I thought it wiser to put a ligature round the internal jugular vein at the same time. The hæmorrhage ceased, the wound in the neck healed perfectly, and for a time all went well, but later an abscess developed in the pterygoid, mastoid, and parotid regions and hæmorrhage from the meatus recurred. So I made an incision widely curved from the entrance wound of the bullet backwards above the pinna and downwards behind it to the tip of the mastoid and turned the flap downwards with the pinna attached. The condyle of the mandible and several fragments of bone derived from the ramus and from the pterygoid plates were found lying loose in a large abscess among the pterygoid muscles and were removed. The abscess cavity was drained and the hæmorrhage arrested by plugging and by leaving a pair of Spencer Wells's forceps

on a vessel in the periosteum of the mandible. The patient made an uninterrupted recovery and despite the loss of one of the condyles of his mandible he can now masticate ordinary diet, including chicken and beef. The optic neuritis did not progress, but on the contrary Mr. Cargill thinks that it may be clearing up. In fact, the subject of these extensive injuries has now no signs remaining except the facial paralysis, the unilateral deafness, and the scars.

There is a group of three interesting cases of paraplegia.

1. In this case Mr. Hall-Edwards localised the bullet lying two inches deep, parallel with and almost accurately in the middle line with its nose downwards at the disc between the first and second lumbar vertebræ. The entrance wound was three inches to the left of the twelfth dorsal spine. Its low position in the canal gave room for hope that the cord at least was not irretrievably damaged, and as there was severe pain shooting down the left leg which, with the sphincters of the bladder and rectum, remained absolutely paralysed after 10 weeks, while the right leg had recovered almost completely within a few days of the infliction of the wound, I removed the laminæ of the first and second lumbar vertebræ and extracted from the spinal canal the bullet and also a spicule of bone of about the same size and shape which had been driven in and which, with the bullet, was compressing the theca severely. I did not open the theca, which expanded to its natural size directly the compressing agents were removed. The wound healed well. The pain down the leg ceased at once and within a fortnight of the operation the patient was able to hold his urine for two hours (which he had never been able to do since the injury) and there was a most encouraging return of function in some of the motor and sensory nerves of the left leg.

2. This patient presents complete motor and sensory paralysis of both lower extremities without any wasting of muscles and without any visceral symptoms following on an injury which must have been a slight one. The history he gives is that a shell knocked a basket out of his hand and buried itself, without exploding, in the ground close by. He lost consciousness and fell to the ground and has been in his present condition ever since he was picked up. We have been watching him for some weeks and I have formed a strong suspicion that he is malingering.

3. This patient has apparently had his cord completely and cleanly divided by a Mauser bullet which crossed it transversely at the junction of the cervical and dorsal spine. The wound of entrance is two inches above the left clavicle at the anterior border of the trapezius. Mr. Hall-Edwards got an excellent skiagram which shows no abnormality except a bullet lying loose in the right axilla. There is complete anæsthesia below the region supplied by the cervical plexus. There is no zone of hyperæsthesia. The breathing is entirely diaphragmatic. There is no weakness in the arms but absolute paralysis of the intercostals and of all the muscles below them. The sphincters are completely paralysed and there are very large bedsores. The reflexes are completely absent. He has no pain except a little in the abdomen when he is rolled over.

Though I am glad to say we have not yet had to break the good record that I told you of in the matter of amputations, yet we have had many patients sent to us who have lost a limb in the field hospitals, where of course most of such operations are chiefly called for. I wonder what arrangements have been made for seeing that each stump is fitted with that particular appliance which is most suited to the needs of the owner. The maimed of our heterogeneous army belong to very varied classes and walks in life, and the appliance which is the most suitable for a farm or factory labourer is sometimes the most unsuitable for a clerk or policeman. Even in times of peace one frequently sees a bad selection made, and as the future ability of each patient to help himself and others depends so much upon the adaptability of the appliance provided for the particular end which is in view there ought to be a really good selection based, not upon the question of expense—that ought not to arise and I believe does not—but upon the question of the particular requirements of the particular case.

Deelfontein.

## THE IMPERIAL YEOMANRY BASE HOSPITAL.

BY L. V. CARGILL, F.R.C.S.,
OPHTHALMIC SURGEON TO THE HOSPITAL.

There have been the following changes in the staff. Mr. A. D. Fripp, Mr. Raymond Johnson, and Dr. H. W. Saunders have left for England. Mr. W. Turner and Dr. L. E. C. Handson, with Mr. E. N. Thornton as dresser, have gone to the Mackenzie Farm Branch at Cape Town, where Mr. Turner is acting as principal medical officer. The medical side consists of Dr. J. W. Washbourn, senior consulting physician, and Dr. A. Elliot, Dr. G. E. Richmond, Dr. C. W. Breeks, and Dr. Barclay Black. Mr. Hamilton A. Ballance has become the senior consulting surgeon, the other surgeons being Dr. J. B. Christopherson, Mr. W. C. G. Ashdowne, Dr. A. P. Parker, and Dr. H. W. Bruce. The writer still remains in charge of the ophthalmic department and Mr. Hall-Edwards in charge of the x-ray department. The dressers are Mr. J. Atkins, Mr. A. de V. Blathwayt, Mr. A. Pearson, Mr. A. C. Ransford, Mr. O. Richards, Mr. Hawkins, and Mr. Sells Dr. Elliot and Dr. Parker, who have been away on sick leave, have returned to duty. Mr. D. J. Greenfield, one of the dressers, who has had enteric fever, has been away on sick leave to Lady Gifford's convalescent home at Norval's Pont, and is returning to England. Of the nursing staff Sisters Brereton and Leggatt have gone to the Pretoria branch, and Sisters Stephenson, Cable, and Cooper to the Mackenzie Farm Branch, Cape Town.

Under the supervision of Mr. Hall-Edwards electric light has now been installed in the cruciform building containing the operating theatre and surgical store, the x-ray and photographic rooms, and the surgery. It is proving a great boon. The dynamo is worked by a four horse-power oil-engine. The Russian bath which has been opened in the laundry building is a great success and is largely patronised. It is managed by Hale-Smith, the chief masseur.

There are 770 patients in hospital, 38 of whom are officers and nearly one-half of the total number belong to the Imperial Yeomanry. Patients are being received and discharged daily, and a week ago No. 4 ambulance train brought 17 officers and 95 men from Wynberg, most of whom came from General Clements's force. They were nearly all surgical cases. Judging from the few cases which we now have of enteric fever and dysentery, the epidemic has completely subsided. The majority of the medical cases now admitted consist of various forms of rheumatism. As a rule, the rheumatism takes a subacute form which is not readily amenable to treatment. Presumably, its prevalence is due to the weather which, contrary to the general rule, has been not only cold but exceptionally damp, in spite of this being the dry season for up-country. In addition to rheumatism a not inconsiderable number of cases of malaria have been admitted, the patients either being old sufferers from malaria or having contracted the disease north of Bloemfontein and Kimberley. One of the wardmaids has developed measles, but from what source has not at present been determined. There have been no further cases of scarlet fever. Among the enteric cases there have been several cases of typhlitis, usually recrudescences of a former attack. A case recently operated on by Mr. Ballance is now doing well.

Dr. Washbourn reports that musk has been of great value in the treatment of certain cases of enteric fever. In a case in which the patient was comatose and almost pulseless rapid improvement ensued upon the administration of musk in five-grain doses every four hours. The improvement was maintained and the patient is now convalescent. In another case of enteric fever with persistent pyrexia continuing after the other symptoms had subsided the administration of salol caused the temperature to return to normal in a couple of days. It would appear that the pyrexia was due to putrefactive changes occurring in the intestinal canal which were prevented by the salol.

In addition to the operations performed on wounded men there has been a fair amount of ordinary civil surgery lately. During the last week Mr. Ballance has operated on two cases of mastoid disease following recent otitis media. In one case the patient was suffering from enteric fever and in the other from scurvy. There are in hospital a considerable number of cases of compound fracture of the lower limb with extensive and troublesome necrosis needing repeated operations.

The weather here has been very variable. A few days have been genial, but other days have been bitterly cold, windy, and gloomy, and we have had snow and hail as well as rain. Fortunately last Wednesday was a fine day for the athletic sports which had been chiefly organised by Captain Mosley Leigh of the Cheshire Yeomanry. They proved a great relief to the monotony of camp life and were immensely appreciated by all.

We are expecting the Hospital Commission here Thursday, and our chaplain, the Rev. J. Blackbourne, has

gone to Cape Town to give evidence before them regarding his experiences as chaplain to the Sixth Division on the march from Modder River to Bloemfontein.

Deelfontein, August 27th.

## THE PLAGUE IN GLASGOW.

BETWEEN Sept. 10th and Sept. 14th no fresh cases of plague were announced in Glasgow. On Saturday, Sept. 15th, however, one fresh case was officially announced—namely, that of a ward-cleaner in the Belvidere Hospital. The patient had been inoculated and the disease has only shown itself in a very mild form. The total number of cases on the morning of Sept. 15th was 17, suspected cases one, persons under observation 115.

On Sept. 17th, however, five additional cases were reported. Four of them occurred in one family and the fifth was the wife of a worker in the Belvidere Hospital. The family were known to have been in contact with previous plague cases. The figures, therefore, for Sept. 17th were: total number of cases, 22; suspected cases, one; persons under observation, 115.

Up to the night of Thursday, Sept. 20th, no further cases had been reported, so that the figures stood thus: total number of cases, 21; suspected cases, one; persons under observation, 105. The decrease of one in the number of cases is due to the death of one of the family reported as plague-stricken on Sept. 17th. Thus five deaths in all have occurred—namely, two in the Belvidere Hospital and three outside.

The Glasgow magistrates held a private meeting on Sept. 12th and decided to issue a strongly-worded appeal through the Roman Catholic clergy to discontinue the holding of wakes as the authorities are convinced that the holding of the Bogan wake in Thistle-street was the main cause of the spread of the disease. The Roman Catholic clergy, while deploring the free use of alcoholic drink at wakes among the poorer classes of the community, yet wish to bring out the fact that the watching of the dead among the middle classes is a very solemn function. Undoubtedly this is so and reverence for the dead is not a thing to be regarded lightly. Reverence for the dead, however, must give way to regard for the living and we cannot but think that the authorities of the Roman Catholic Church, a body which possesses in a very large degree the quality of common sense, will see the force of this statement. It must further be remembered that the Glasgow Parliamentary powers prohibit the holding of wakes over the body of any person who has died from infectious disease and that the occupiers of houses who permit such wakes to take place, as well as all persons knowingly attending such wakes, are liable to a penalty not exceeding 40*s*.

Professor Muir, the professor of pathology in the University of Glasgow, has laid before the Corporation of Glasgow a report upon the "Bacteriology and Pathology of the Cases of Suspected Plague in Belvidere Hospital." The report states that the bacillus found in the cases examined was proved to be both structurally and culturally identical with the bacillus of bubonic plague, while the pathogenic results of the plague bacillus were reproduced in animals by inoculation with the pure cultures obtained from the human subject.

Nine of the cases were examined bacteriologically, fluid being obtained by puncture of the affected glands. This fluid was examined both microscopically and by cultures. In four cases the bacillus was found and cultivated. In one case (Mrs. Malloy) a few degenerated plague bacilli were found, but no cultures were obtained. Dr. J. C. McClure had, however, two days previously to Professor Muir's examination obtained pure cultures, and, says Professor Muir, "the negative results obtained by me were in all probability due to the fact that the disease was in process of cure and that the bacilli were dying out." Four other cases were examined with negative results, but they were getting well. The post-mortem examination of the body of Patrick Malloy revealed that the lymphatic glands were almost universally affected and contained enormous numbers of bacilli. Professor Muir concludes by saying that up to the date of his report, Sept. 17th, five cases had been proved by bacteriological methods to have suffered from bubonic plague, and that one of the patients died from that disease.

We publish additional notes from Dr. J. Brownlee and Dr. J. Campbell McClure as to the

### CLINICAL ASPECTS OF THE CASES OF PLAGUE.

During the last fortnight several points of interest in connexion with the present outbreak of plague have arisen. The persons originally admitted, with one exception are now out of danger. The exception is that of the patient Bogan, whose case was reported in THE LANCET of Sept. 15th, p. 827, and who is still suffering from secondary septic infection.

The chief points of interest are those dealing with treatment and administration. With regard to the former, we are able to report one very interesting case, showing the result of the use of Yersin's anti-plague serum. The case was suitable in many ways as a test of the value of the treatment. The patient came under care in the early stage of illness (within 30 hours of its inception). He was very acutely ill, resembling closely the patient formerly reported whose death occurred in the hospital. The seat of the bubo was in the axilla, a situation much more dangerous to life than that of the groin. Four hours after admission 40 cubic centimetres of the serum were injected, half intravenously and half subcutaneously, with the result that the temperature fell 4° F. in six hours and that there was in the like time a very marked diminution in the swelling round the bubo, while the tenderness was greatly reduced and in the course of the day passed almost completely away. Two days later the patient felt almost well and the pain in the bubo had disappeared.

The following is a report of the case of Charles M., aged 30 years, who was admitted to the Belvidere Hospital on Sept. 9th. Association with other cases has not been traced and therefore the period of incubation is unknown. The history of the illness obtained from his friends and afterwards verified by himself was to the effect that for about a week before his admission to the hospital he had suffered from moderately severe headache and slight malaise, but he continued at his work until the morning of Sept. 8th, when he had a rigor with increased severity of the headache and sickness, although vomiting was absent. By noon he was unconscious, and he was delirious all night and very violent.

On admission the patient was evidently extremely ill. His face was of an ashy colour with a more marked ring of pallor round the mouth. The conjunctivæ were slightly injected and the pupils were contracted in contrast to the more common dilatation observed in the other cases. The tongue was moist with a white fur on the dorsum, but not markedly injected. The temperature was 105·8° F., the pulse was 134, and the respirations were 40. The pulse was soft and compressible but full. There was no evidence that the patient was in the least conscious of his surroundings. When left alone he tossed restlessly in bed, but betrayed considerable anxiety in his face. On being handled he resisted so strongly that it was impossible for the nurses to wash him. This resistance was extremely marked if the palpation of his left axilla was attempted. In this situation a group of glands was found which were enlarged and acutely painful. (It is to be noted here that the movements of resistance made in opposition to the examination of this bubo resembled those of a person conscious of his actions and not the purposeless movements usually made in the delirium of typhus or enteric fever.) The only bubo found was in the left axilla; elsewhere, though the glands were slightly enlarged the enlargement was no more than is often met with in healthy persons. The other organs on examination showed nothing worthy of note. At 12 midnight 20 cubic centimetres of serum (Yersin's) were injected into one of the brachial veins and a like quantity into the subcutaneous tissue of the abdomen. This was done with considerable difficulty owing to the struggles of the patient. At the end of six hours it was seen that the patient had had a light sweat and that the temperature had fallen four degrees. The pulse-rate was reduced to 108 and the respirations had fallen to 34. The pain in the axilla was markedly lessened, and the surrounding œdema was much less. By the evening the glands could be palpated without undue resistance. A puncture for the purpose of completing the diagnosis was performed with the result that the clinical diagnosis was confirmed microscopically. By next day the cultures made at the same time showed typical growths of the bacillus pestis. On this

day the temperature was throughout 100° and the pulse ranged from 64 to 76. The patient felt quite well and desired to get up. On questioning him it was found that he remembered nothing from mid-day on Saturday (Sept. 8th) till the evening of Monday (the 10th) when he found himself in the hospital. Since the latter date the improvement has been constant with the exception of a rise of temperature to 101° on the evening of the 14th, associated with a slight recrudescence in tenderness of the glands in the left axilla which subsided on the next day. The pulse, however, is still weak and the heart-sounds are somewhat toneless. For the past 24 hours he has experienced some discomfort from pain in both knee-joints and in the left thigh, due in all probability to the serum injected on the 9th.

From the administrative point of view there can be no doubt that the mild cases of plague such as have been observed among those who had been in contact with the infected persons, either attending the "wakes" held over the dead bodies or otherwise, and who were subsequently under medical observation in the reception houses, are the most interesting. For it is evident that if these persons are even slightly infective their rigid isolation is a matter of the greatest importance to the community. Up to the present time we have received from the reception houses seven persons, of whom six seemed to be suffering from very slight attacks of plague, so slight that did they come under observation without a definite history of contact they would, apart from a bacteriological examination, be quite unrecognisable. The importance of the matter is further enhanced when it is considered that in these cases the buboes have been so small that to put a needle into the substance of the gland has been a most difficult matter. The general symptoms which these persons have exhibited have been as follows. In the onset there has been headache and malaise associated with sickness, while vomiting has been only occasional. The temperature has been only slightly raised—rarely above 100° F. and sometimes not above 99·6°; the pulse has been only slightly quickened and the rapidity of the respirations has not been markedly altered. The face has been heavy and drowsy-looking, the eyes have been injected, and the tongue has been furred. In fact, in general there has been an appearance of illness in the aspect of the patient which has been quite out of proportion to the severity of the symptoms. This look of illness usually persists for several days after the symptoms have subsided. The seat of the buboes in the seven cases has been twice in the left axilla, three times in the submaxillary glands, once in the anterior cervical chain, and once in the glands of the posterior triangle of the neck. The glands have been enlarged, with some peri-glandular infiltration and in one case reddening of the skin. Tenderness has always been present, though not so markedly as in the more severe cases of typical plague, and this tenderness has usually appeared on the second day of illness; it subsides after two or three days, though the swelling of the glands may not be wholly absent even after a fortnight. The clinical picture is fairly constant, though, as before remarked, the illness is not of a severity to be readily diagnosed unless with a definite history of plague contact.

We have up to the present been somewhat diffident in publishing reports of these cases because in only one case was it possible to make sure that our hypodermic needle had reached the gland, and in that instance the cultures gave no growth. But at the end of last week a wardmaid employed in the pavilion used for the isolation of the plague patients, and who had received a protective inoculation of 10 cubic centimetres of Yersin's serum exactly 10 days previously, developed an illness in all points exactly resembling that which we had before observed in the six patients received from the reception houses. It is only fair to state that owing to the fact that the serum arrived a week after the outbreak of plague amongst us the patient had been exposed to infection for that time without protective inoculation. In this case the buboes were in the posterior cervical region, so that their puncture was rendered more easy on account of the resistant deeper tissue which lay subjacent and did not involve the same risk as in the other cases where the glands affected lay over the main blood-vessels. From this case we have obtained typical cultures of the plague bacillus. We report in full this case and that of a boy admitted earlier in the outbreak as illustrative of the milder forms of the disease.

The patient, Archibald D., aged 18 years, was at the wake of Christina M. on the night of August 21st and was removed to the reception house on the day succeeding to the first discovery of plague in Glasgow. On the evening of August 28th he was seen by one of us on account of his having been taken ill. The patient was very drowsy, so much so that he manifested no reflex on touching the conjunctiva with the finger. There seemed to be no suspicion that this was due to alcohol. Headache, sickness, and vomiting had been marked and severe just before arrival, but had temporarily subsided. The temperature was normal, and the pulse was 70. All the glands of his body which were accessible to palpation were examined without anything abnormal being discovered. Next morning the patient was somewhat better, but he was kept in bed. In the afternoon a recurrence of the headache and vomiting took place. The submaxillary glands in the left side were complained of and found to be enlarged. The temperature was 99·6° F. He was straightway sent to hospital.

On admission the patient had that heavy and obfuscated look which has been already described in such cases, with injection of the conjunctivæ and slight dilatation of the pupils. The submaxillary glands were considerably enlarged and painful on palpation. Next morning the temperature was 99°, at which elevation it remained all day, but a consistent normal temperature was not maintained till the seventh day of the illness. The pulse on admission was 72 and had on the latter date declined in rate to 50, while the respiration rates were respectively 24 and 20.

The tenderness of the glands persisted for about three days, when it gradually subsided, but the swelling has not even at the date of writing (Sept. 18th) completely disappeared. The aspect of illness was more marked and lasted longer than would have been expected from the local conditions had the latter been due to ordinary causes. As possible causes of the condition which were definitely excluded may be mentioned caries of the teeth, faucial catarrh, and nose or ear mischief. Puncture of the gland was attempted only once, as it immediately overlay the deep vessels of the neck, and the culture proved sterile. It is, however, open to doubt whether the needle actually penetrated the substance of the gland.

H. R., aged 21 years, was a wardmaid in the wards at the Belvidere Hospital reserved for plague. As the patient was exposed continually to infection for the space of 15 days before developing the disease it is impossible to name the period of incubation. On Sept. 3rd, as a prophylactic measure, 10 cubic centimetres of Yersin's serum were injected subcutaneously. This produced none of the effects often resulting from it, such as urticaria or articular pains. On the 13th headache and pain in the back were complained of and nausea was also present, but there was no vomiting. The patient, however, felt very unwell. On the 14th the headache and malaise still continued and in addition tenderness and stiffness in the back of the neck were complained of. The eyes were slightly injected and the face was flushed and its expression heavy. The tongue was slightly furred but was otherwise normal. Neither diarrhœa nor constipation was present. The temperature was normal and the pulse showed nothing noteworthy. Behind the ears, in the posterior triangle of the neck, there was on each side a markedly enlarged lymphatic gland—that on the left side being of about the size of an almond and that on the right side of the size of a bean. Puncture was made into the gland of the left side and cover-glass films and cultures were made. These showed a bacillus morphologically indistinguishable from the bacillus pestis. By the 15th the tenderness of the glands had subsided and since that date they have been decreasing in size. The patient is now to all intents and purposes well.

In conclusion, we may once again remark that these persons probably belong to a class who represent a real danger to the community, for it cannot be supposed that because of the mildness of the attack the sufferers are not infective. All our experience of other infective diseases points to the conclusion that it is largely by means of such cases that the infection is scattered broadcast and the fact that in so many of the outbreaks of plague in the East there has existed for a considerable time prior to the serious epidemic an amount of slight illness of an apparently benign nature but which seemed afterwards to take on a malignant character ought to justify the most stringent observation of all persons in whom even the slightest suspicion of the presence of the malady can be assumed.

It must be noted that of the seven cases of benign plague

here discussed one is a case occurring in the hospital, while the other six have been among persons under medical observation in the reception houses of the city; that is, of the 100 persons removed for observation in the reception houses six persons have developed a form of the disease which would probably greatly endanger the safety of the community, but which, except for direct medical supervision of the sufferers, would most probably never have come to the cognisance of the health authorities.

As we go to press we learn by telegram that four "indirect contacts," a ward-cleaner who had been inoculated, and the wife of a collector of infected clothing have sickened.

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A statement was made in our issue of Sept. 8th (p. 758) that the area described by Dr. Chalmers on the south side of the river and surrounding Thistle-street should be deemed infected. In reality the area was so deliminated as a special cleansing area, and not because it was regarded as a wholly infected area.

## THE PLAGUE IN LONDON DURING THE REIGN OF ELIZABETH.

THE records of the Corporation of the City of London contain a number of letters which are of considerable interest in showing the state of the City during the visitation of the plague in the reign of Elizabeth.

On June 7th, 1580, the Lord Mayor wrote to the Lord Treasurer, Lord Burleigh, suggesting that, as the plague was at the time raging in Lisbon, he should be authorised to take precautions on the arrival of ships from that port and for the prevention of the spread of the infection in London. Lord Burleigh replied authorising him to prevent the lodging of merchants or seamen in the City and the suburbs, and to prevent a discharge of their goods until they had had some time for airing. He also suggested that there should be a conference of the officers of the port to suggest measures for the prevention of the infection.

Later in the same year the Lord Mayor wrote to the Mayor and Jurats of Rye, saying that as the plague was raging in that port he had received commands from the Queen's Council to stay all ships and merchandise from being brought to the City until they had been aired and he requested that the inhabitants of Rye might be charged not to come to the City or send goods by land so long as the plague remained there. The Lord Mayor also requested the Queen's Council to redress those things which were found to be dangerous in spreading the infection "and otherwise drawing God's wrath and plague upon the City," and enumerated amongst the exciting causes which were likely to affect this, "the erecting and frequenting of infamous houses out of (i.e., beyond) the liberties and jurisdiction of the City,"—and "the drawing of the people from the service of God and honest exercises to unchaste plays." Regulations which were drawn up for the purpose of staying the plague included amongst other things rules for the conduct of the inmates of places pretending exemption, restraining the building of small tenements, and the turning of great houses into small habitations by foreigners, the prevention of any increase in the number of buildings, especially about Charterhouse, Mile End, and St. Catherine's, and of "the pestering of exempt places with strangers and foreigners," and "the number of strangers in and about London of no Church," the haunting of plays beyond the liberties and the slaughter of cattle within or near the City.

In the month of September, 1581, their lordships also informed the City authorities that the Queen had been informed that the increase of the plague was due to the fact that the orders passed with respect to the persons infected were not being carried out. In consequence of this the Queen had been obliged to remove further off and to adjourn the law term, and if improvement did not take place the term, it was threatened, would be held elsewhere.

In April, 1582, the Lords of the Council gave orders to restrain burials in St. Paul's Cathedral because the interments were so shallow and the churchyard so crowded that scarcely any grave could be made without corpses being laid open. The number of parishes which were allowed to use St. Paul's churchyard was therefore reduced from 23 to 13.[1] The order, however, it was distinctly stated, was not intended to prevent any person of honour or worship being buried there, but only the pestering of the churchyard with whole parishes.

In October, 1582, the Queen issued orders prohibiting any merchants or other persons from the City whose houses had been infected from resorting to or sending to Hertford, Ware, Hoddesdon, or other places near Hertford, any sort of merchandise, food, or such like. At this time it appears that the law courts were sitting at Hertford.

In January, 1583, the Lord Mayor was required by the Council to see what inns and ale-houses had been infected during the two months before the issue of the order, and to have a list made of these places. The Lord Mayor accordingly had such a catalogue made and printed "for everyone that liked to buy and keep for his instruction." Lord Burleigh, in acknowledging the receipt of this catalogue, said that they had had a similar one from Westminster prepared by the Bailiff of that city. It was his opinion that the catalogue prepared by his lordship was somewhat too long and he desired the Lord Mayor to send for the Bailiff of Westminster and see how short a catalogue might be made to be published, and that this new list, when agreed on, should be sent to him for inspection.

On Jan. 15th the Lord Treasurer returned the corrected catalogue of the infected houses, in order that steps might be taken to increase its brevity.

By the month of April, 1583, the infection had much increased and the Queen commanded that infected houses should be shut up and provision made to feed sick persons and to prevent them from going out, that infected houses should be marked, and the streets thoroughly cleansed. Her Majesty expressed surprise that no hospital had been built outside the City to which infected people might be removed, although other cities of less great antiquity, fame, wealth, and reputation had provided themselves with such places. The Lord Mayor, in a letter written on May 3rd, complained of the great inconveniences caused by assemblies of the people at plays, bear-baiting, and profane spectacles at the theatre and such like places. These being beyond the jurisdiction of the City were not under the control of the Lord Mayor, who expressed a wish that the Lords of the Council might redress the danger. It does not appear, however, that this request was immediately granted.

[1] The total number of parishes in the city of London was 120.

## ASYLUM REPORTS.

*Cumberland and Westmoreland Asylum (Annual Report for 1899).*—The average number of patients in the institution was 642 and comprised 335 men and 307 women. During the year 163 patients were admitted, 96 of these being men and 70 women. Of these, 35 in all—viz., 22 males and 13 females—were not first admissions. Dr. W. F. Farquharson, the medical superintendent, states in his report that of the patients admitted 148 were chargeable to the rates and 18 were private patients. "The admissions included two cases of congenital imbecility, five cases of epilepsy, seven cases of general paralysis, 10 patients who were over 70 years of age, and seven chronic cases transferred from other asylums. In 30 cases the attack had lasted more than a year before the patient was brought to the asylum. The great majority of the cases just enumerated were incurable." 35 of the patients admitted had previously been under treatment in the asylum and 23 of these had formerly been discharged recovered. "More than one-half of the patients admitted were in a feeble state of health; 15 of these were on admission in an extremely weak and exhausted state, and several of them died very shortly after being brought to the asylum. ..... 47 of the patients admitted had suicidal tendencies; 18 of these had actually attempted suicide before admission." In many of the cases admitted no definite cause of the attack could be ascertained. "Where such causes were known those of a physical nature predominated, as is usual." Hereditary predisposition to insanity was ascertained to exist in 51 cases, or 30·7 per cent., of the admissions, while intemperance in drink was the cause in 25 cases, or 15 per cent. During the year there were 91 patients discharged as recovered, the highest number of such discharges per annum in the history of the asylum and constituting 14 per cent. of the average number resident. 31 patients were discharged as relieved, and of these 24 were removed to the workhouse as no longer requiring asylum treatment. The number of deaths during the year

amounted to 44—viz., 24 men and 20 women, or 6 8 per cent. of the average number resident. Eight of the patients who died were over 70 years of age. One patient, aged 87 years, was admitted in a very weak state and died in three weeks; one patient was admitted dying from consumption and he only survived a week. All the causes of death were ascertained or verified by post-mortem examination. Of the deaths two were due to general paralysis of the insane, three to renal disease, five to senile decay, six to cardiac disease, and 17 to tuberculosis. Dr. Farquharson observes that "phthisis unfortunately is a disease very prevalent in asylums ..... its contagious nature is now clearly recognised, and large asylums afford great opportunities for the spread of the disease." Full stress is laid on the importance of the recommendation made at a recent meeting of the Medico-Psychological Association, that in connexion with each asylum there should be erected a sanatorium, built it may be of wood, to which all phthisical patients could be removed for treatment as far as possible on open-air principles. It is pointed out that at a date not far remote the further enlargement of the asylum will become necessary, and if in the first place a cheap sanatorium for phthisical patients were erected it would for a considerable time relieve the pressure on the accommodation in the present buildings. In the early part of the year one male patient and three female patients suffered from facial erysipelas. No casualties of any note occurred during the year with the exception of two cases of accidental fracture of bones, both in aged females. Much of the drainage of the asylum has been altered and rendered efficient. Owing to the fields used for irrigation by the asylum sewage having become sewage-logged, and complaints received of poisoning of cattle, it has been decided to adopt the system of the septic tank with subsequent filtration of the sewage through bacteria beds, a method known to be very satisfactory. The arrangements for dealing with an outbreak of fire have been improved upon, electric fire alarms have been installed throughout the building with an indicator in the entrance hall, new hose has been purchased, and periodic fire-drill of the attendants has been carried out.

# Public Health and Poor Law.

## LOCAL GOVERNMENT DEPARTMENT.

### REPORTS OF INSPECTORS OF THE MEDICAL DEPARTMENT OF THE LOCAL GOVERNMENT BOARD.

*On Enteric Fever in the Urban District of Coleford (Gloucestershire) and in the Surrounding Rural District of West Dean*, by Dr. W. W. E. FLETCHER.[1]—Dr. Fletcher reports upon an outbreak of enteric fever in the small town of Coleford which, as he and Dr. Peter Buchanan, the medical officer of health of that place, had no difficulty in showing, was attributable to a particular milk service. In 1899 there occurred, after some months in which no enteric fever was reported in the district, a period of five weeks, from July 20th onward, in which no less than 74 persons were attacked in Coleford and its neighbourhood. Every one of the 19 Coleford houses invaded during this period were served with milk by a Mr. X., one, and by no means the principal, of the numerous vendors of milk in the place. And Mr. X.'s milk appears also to have been consumed by certain of the persons living in West Dean, just outside Coleford, who were attacked during the five weeks in question. From the end of this five weeks to December, 1899, a few scattered cases, principally secondary cases in houses invaded during the epidemic period, occurred in each month, but the disease did not again assume epidemic proportions. The cause of the milk becoming infectious is not quite certain; Dr. Buchanan saw reason to suspect that the milk-cans were washed with well water liable to privy contamination, but apparently no specific pollution which could account for the epidemic was traced to this well water. Dr. Fletcher also discovered that one of the milkers was suffering at the beginning of July from mild illness, not enough to keep him from work, which conceivably was enteric fever. On the latter assumption the dates and other circumstances were consistent with a theory that this milker had in some way or other infected the milk. As in most milk outbreaks, the incidence was chiefly on the children and on female adults. Out of the 74 cases 48 were females, and as many as 34 were under 15 years of age. The diagnosis of enteric fever was controlled in some instances by the serum test. This test (dilution not stated) in the case of the milker suspected of having caused the whole mischief had a "negative result."

*On the Sanitary Circumstances and Administration of the Urban Districts of Bilston and Coseley and upon a Prevalence of Enteric Fever therein*,[2] by Dr. L. W. DARRA MAIR.—Coseley and Bilston are two urban districts in the "Black Country" and are certainly no better in sanitary condition than their neighbours. In Dr. Mair's report, as we have often noticed in other official reports on these Staffordshire towns, the insanitary state of the surroundings of dwellings is strongly insisted on. The objectionable common yard at the back of dwellings, traversed by faulty gutters, unpaved, with large middens and associated privies which inevitably lead to excremental pollution of the soil, abound in both these places. Some of these middens have as large an area as from 60 to 80 square feet and are sunk four feet below the surface. Both districts in question contain a large number of dwellings for miners and artisans, put up haphazard several years ago without supervision by responsible authorities. As a result dilapidations are common; houses are frequently damp, having often been built without damp courses on clay soil; very frequently they have been erected on coal-pit débris or on other made ground, while in addition subsidences due to mining have caused, and still occasionally bring about, tilting and cracking of dwellings. To secure improvement of such houses and their surroundings is by no means an easy task for a local authority, particularly where the owners are keen in opposition and where, as so often is the case, the tenants in order to avoid increased rents support the owner in leaving things alone. Nevertheless, it is clear from this report that very much more courage should be shown by each of the district councils in question. It is not certain that they are taking sufficient trouble even now with new buildings, and thus they may be casting a heavy burden on their successors in future years. The facts which Dr. Mair gives as to the recent prevalence of typhoid fever illustrate the close connexion between the sundry unwholesome conditions of dwelling-houses and the endemic maintenance of this disease. A variety of useful recommendations are attached to the report. Among them one of the most pressing is obviously reorganisation and increase of the sanitary staff in both places. Dr. Mair indicates that each district suffers from lack of sufficient personal inspection by its medical officer of health, who in each instance is in private practice and is paid a comparatively small salary for his official work. It is a great pity that owing to anxiety to respect local prejudice all public authorities now seem to fight so shy of "combined districts." How much good might not be done by one capable health officer, sufficiently paid, and appointed, say, for half-a-dozen of the contiguous urban districts in the Black Country?

*Memorandum on a Brief Visit to Pontypridd Urban District with Reference to a Fatal Prevalence of Diphtheria therein*,[3] by Dr. L. W. DARRA MAIR.—Pontypridd urban district is of wide area—2560 acres—and comprises several large groups of population that have recently come to inhabit the mountainous districts about the rivers Rhondda and Taff in South Wales. Altogether its population is estimated at 38,900. For several years diphtheria has been widely prevalent throughout the entire district, while now and again its incidence has been exceptionally severe on communities in particular parts of it. In 1899 as many as 227 cases of diphtheria were notified, and from Jan. 1st to March 10th, 1900, there were no less than 108 notifications of this disease. Dr. Mair's memorandum, no doubt on account of the urgency of the case, deals wholly with preventive measures, which seem to have been very badly neglected at Pontypridd. Inquiry into the circumstances under which diphtheria has in late years so severely attacked certain of these valleys in South Wales is nevertheless much to be desired. A comprehensive investigation of the "epidemiological" sort into this subject might lead to valuable additions to our knowledge of the natural history of diphtheria.

[1] London: Eyre and Spottiswoode, East Harding-street; Edinburgh: John Menzies and Co.; Glasgow: Hodges, Figgis, and Co. Price 8d.

[2] Ibid., price 1s.

[3] Ibid.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6500 births and 4046 deaths were registered during the week ending Sept. 15th. The annual rate of mortality in these towns, which had been 21·7 and 19·6 per 1000 in the two preceding weeks, further declined last week to 18·2. In London the death-rate was 16·7 per 1000, while it averaged 19·1 in the 32 provincial towns. The lowest death-rates in these towns were 9·1 in Norwich, 10·7 in Cardiff, 11·1 in Bradford, and 11·4 in Halifax; the highest rates were 23·2 in Liverpool, 23·7 in Swansea, 25·4 in Manchester and in Preston, and 26·8 in Sheffield. The 4046 deaths in these towns included 879 which were referred to the principal zymotic diseases, against 1422 and 1143 in the two preceding weeks; of these 575 resulted from diarrhœa, 111 from whooping-cough, 73 from "fever" (principally enteric), 57 from diphtheria, 40 from measles, 22 from scarlet fever, and one from small-pox. The lowest zymotic death-rates last week occurred in Oldham, Huddersfield, Halifax, and Bradford; and the highest rates in Leicester, Manchester, Preston, and Hull. The greatest mortality from scarlet fever occurred in Sunderland; from whooping-cough in Croydon, Derby, and Gateshead; from "fever" in Portsmouth and Sunderland; and from diarrhœa in Leicester, Manchester, Preston, and Hull. The mortality from measles showed no marked excess in any of the 33 towns. The 57 deaths from diphtheria included 17 in London, nine in Leicester, six in Bristol, five in Salford, and four in Sheffield. One fatal case of small-pox was registered last week in Liverpool, but not one in any other of the 33 large towns; and only three small-pox patients were under treatment on Saturday last, Sept. 15th, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1753, against 1702 and 1736 on the two preceding Saturdays; 243 new cases were admitted during the week, against 140, 176, and 213 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 138 and 124 in the two preceding weeks, rose again last week to 161, and were 12 above the corrected average. The causes of 45, or 1·1 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Leicester, Salford, Bradford, Newcastle, and in 13 other smaller towns; the largest proportions of uncertified deaths were registered in Liverpool, Blackburn, Halifax, and Sheffield.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined from 17·9 to 17·5 per 1000 in the three preceding weeks, rose again to 18·9 during the week ending Sept. 15th, and showed an exces of 0·7 per 1000 over the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 15·2 in Leith and 15·8 in Dundee to 22·3 in Greenock and 32·0 in Perth. The 584 deaths in these towns included 54 which were referred to diarrhœa, 21 to whooping-cough, seven to scarlet fever, seven to "fever" (including one death from bubonic plague), six to diphtheria, two to measles, and one to small-pox. In all 98 deaths resulted from these principal zymotic diseases, against numbers decreasing from 108 to 83 in the four preceding weeks. These 98 deaths were equal to an annual rate of 3·2 per 1000, which was 0·7 below the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 54 and 42 in the two preceding weeks, rose again last week to 54, of which 21 occurred in Glasgow, 11 in Edinburgh, seven in Dundee, five in Leith, four in Aberdeen, and four in Greenock. The deaths from whooping-cough, which had been 25 and 21 in the two preceding weeks, were again 21 last week and included 16 in Glasgow and two in Greenock. The fatal cases of scarlet fever, which had been five, five, and four in the three preceding weeks, rose again last week to seven, of which six were registered in Glasgow. The deaths referred to different forms of "fever," which had declined from eight to four in the three preceding weeks, rose again last week to seven, of which two occurred in Paisley, two in Greenock, and one (the fatal case of bubonic plague), in Glasgow. The six deaths from diphtheria showed a slight increase over recent weekly numbers, and included two in Edinburgh and two in Aberdeen. The fatal case of small-pox was registered in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 58 and 79 in the two preceding weeks, declined again last week to 70, but slightly exceeded the number in the corresponding period of last year. The causes of 29, or nearly 5 per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·0, 26·7, and 22·2 per 1000 in the three preceding weeks, rose again to 24·8 during the week ending Sept. 15th. During the past four weeks the death-rate in the city has averaged 25·2 per 1000, the rate during the same period being 18·5 in London and 16·7 in Edinburgh. The 166 deaths belonging to Dublin registered during the week under notice were 17 in excess of the number in the preceding week, and included 44 which were referred to the principal zymotic diseases, against 40 and 26 in the two preceding weeks; of these 27 resulted from diarrhœa, seven from whooping-cough, seven from "fever" (principally enteric), two from diphtheria, one from scarlet fever, and not one either from small-pox or measles. These 44 deaths were equal to an annual rate of 6·6 per 1000, the zymotic death-rate during the same period being 3·2 in London and 2·8 in Edinburgh. The fatal cases of diarrhœa, which had been 32 and 20 in the two preceding weeks, rose again to 27 last week. The deaths from whooping-cough, which had been four and five in the two preceding weeks, further rose last week to seven. The seven deaths referred to different forms of "fever" showed a marked increase over recent weekly numbers. The 166 deaths in Dublin last week included 46 of infants under one year of age and 28 of persons aged upwards of 60 years; the seven deaths of infants exceeded the number recorded in the preceding week, while those of elderly persons showed a decline. Three inquest cases and four deaths from violence were registered, and the causes of eight, or nearly 5 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—

Staff Surgeon: E. P. Mourilyan to the *Severn*. Surgeons: W. J. Stitt to the *Australia* and E. H. McSherry has been appointed to the *Phœbe*.

Deputy Inspector-General of Hospitals and Fleets Henry Charles Woods, M.V.O., M.D., has been promoted to the rank of Inspector-General of Hospitals and Fleets in Her Majesty's Fleet.

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel Frederick Rowland Barker retires on retired pay.

Lieutenant-Colonel J. L. Peyton succeeds Lieutenant-Colonel Hughes as P.M.O., Salisbury Plain. Lieutenant-Colonel R. V. Ash, retired list, is appointed to the medical charge of the troops at Fleetwood.

### INDIA AND THE INDIAN MEDICAL SERVICES.

Lieutenant-Colonel Thomas Stephenson Weir, Bombay Establishment, to be Colonel.

### VOLUNTEER CORPS.

*Artillery:* 4th Lancashire: Surgeon-Lieutenant W. McClelland to be Surgeon-Captain. *Royal Engineers;* 1st Cheshire: Surgeon-Lieutenant W. Lawton to be Surgeon-Captain. *Rifle:* 4th (Perthshire) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Captain A. Thom resigns his commission. 2nd Volunteer Battalion the Sherwood Foresters (Derbyshire Regiment): Surgeon-Lieutenant-Colonel E. M. Wrench retires under paragraph 111 Volunteer Regulations, with permission to retain his rank and to wear the uniform of the battalion on retirement.

### TRANSVAAL AND CHINA WAR NOTES.

The P. and O. steamer *China*, which arrived in Plymouth

on Sept. 9th, brought to the Royal Naval Hospital, Plymouth, 16 wounded sailors and marines from China. Most of the men formed part of Admiral Seymour's relief column, while the others took part in the fighting at Tientsin. The majority of the wounds were caused by Mauser and Mannlicher bullets. The invalids were conveyed to the Royal Naval Hospital, Plymouth.

Mr. J. Paul Bush, M.R.C.S., surgeon to the Bristol Royal Infirmary, and formerly in charge of the Princess Christian Hospital, arrived in Clifton on Sept. 13th from South Africa.

The *Tamar* arrived at Southampton on Sept. 15th from South Africa with 64 invalids under the command of Major Alexander, R.A.M.C. The men were sent to Netley Hospital.

Lieutenant Nickerson, R.A.M.C., who was taken prisoner at Ventersburg on August 19th, has been released.

### SOUTH AFRICAN WAR CASUALTIES.

The total losses (exclusive of sick and wounded men now in hospital in South Africa) since the beginning of the war amount to 39,785. Of the 27,937 sent home as invalids 173 have died, 740 have been discharged from the service as permanently unfit, and 920 are in hospital. Among the missing and prisoners, however, are probably included a large number of officers and men who have been liberated or have subsequently rejoined.

### THE PREVENTION OF DISEASE IN THE FIELD..

We have called attention in another column to a letter from Dr. Leigh Canney recently published in the *Standard* on this subject, and have suggested that the matter should be taken up and considered by the War Office authorities, especially as Dr. Canney has been at the trouble to work out the calculations and details of a scheme showing how his proposals could be carried into effect. He deals mainly with the question in relation to the practicability of preventing such deplorable epidemics of typhoid fever and dysentery in armies as have recently occurred, for example, in South Africa, and he contends that the extent and prevalence of these diseases and probably of others of a kindred kind could be very materially diminished if not altogether prevented by the use of filtered or boiled water—giving preference for practical reasons to the latter method. He puts his calculations and estimates as follows:—

An army of 50,000 men such as moved from the Modder to Paardeberg, and thence to Bloemfontein, would require for—(*a*) Filtration: 500 filters (and each filter would require a fresh candle daily). Total weight, 50 lb. × 500 = about 11 tons. Total cubic space, 1000 feet. Or (*b*) boiling: 500 combined heaters and stoves in separate wooden cases. Total weight. 100 lb. × 500 = 22 tons about. Total cubic space, 3000 feet. This army would require as fuel about 150 gallons of petroleum and 20 gallons of methylated spirit daily. The boiling system would abolish the need for some 4000 kettles, probably supplied at present to this army and weighing, probably, about 20 tons. The boiling system would, therefore, only add two tons + the weight of 150 gallons of petroleum and 20 gallons of spirit to the 500 tons of stores daily necessary for such an army. The boiling system or the filtration system would render the transport of vast typhoid and dysentery hospitals unnecessary. As in war, as practised at present without prevention, there are five times as many cases of disease (mostly preventable) as there are of wounds, the hospital equipment to be transported, under preventive measures, could be reduced, if not by four-fifths, at least very largely.

### THE ROYAL ARMY MEDICAL CORPS ON SERVICE.

We may call our readers' attention to a communication published in the *Army and Navy Gazette* of Sept. 15th, from "A Staff Officer who does know." He bases his statements, which are strongly in vindication of the officers of the Royal Army Medical Corps, on the results of his own experience acquired in the field during the campaign in South Africa, and it is, we think, to be regretted that he did not append his name and rank to his letter which is a very good one and admirable in tone. Although we quite concur with him in thinking that it is essential for efficiency in war to have a strong corps of well-trained medical officers we are nevertheless of opinion that it will be also necessary to have in future a big reserve of civil surgeons. There is no reason why these civil surgeons should not receive some preliminary military training in time of peace, and then a comparatively short experience in the field would fit them for the discharge of their duties. There is room for the publication of a very useful manual of instruction as to the principles and methods of military and medical procedure in war.

### DEATHS IN THE SERVICES.

Fleet-Surgeon Thomas M. Sibbald, R.N., of the battleship *Centurion*, flagship of Vice-Admiral Sir E. H. Seymour, K.C.B., on the China station. The admiral and other officers and men of the *Centurion* had returned to their ship last month after their march back from Peking, and on the day following their return Fleet-Surgeon Sibbald, who was suffering from fever, was found dead in his bed. The deceased was very popular in the service. His body was sent to Wei-hai-wei by the steamer *Shen King* and buried with full naval honours by the ship's company of the cruiser *Powerful*. Fleet-Surgeon T. M. Sibbald was one of the officers of the Royal Navy who were recommended by Captain B. H. McCalla, U.S.A. Navy Department, for a medal for acting concurrently with other officers in the relief of Peking.

### THE RELIEF OF KUMASI.

An account of the relief of Kumasi published in the *Times* of Sept. 19th, and received through Reuter's Agency, gives a stirring picture of the sufferings of the besieged garrison. To add to these sufferings small-pox broke out in the fort. The cases had to be removed to a hut under the fort wall, and each day Dr. Hay, although extremely ill, clambered over the wall to visit these cases. In so doing he contracted fever for a second time. From the day of the escape of the Governor and his party until the fort was relieved a third of the garrison died from starvation.

# Correspondence.

"Audi alteram partem."

## "THE TREATMENT OF ACUTE ALCOHOLISM BY LARGE DOSES OF DIGITALIS."

*To the Editors of* THE LANCET.

SIRS,—In reference to your annotation in THE LANCET of Sept. 15th (p. 821) on the use of large doses of tincture of digitalis in the treatment of delirium tremens, I would like to mention that my father, the late John L. Paterson, M.D., of Bahia, Brazil, since 1877 treated all his cases, which were very numerous, with half-ounce doses of tincture of digitalis and never met with any evil result. He found that if the full dose were successfully administered the patient within half an hour fell into a deep sleep. In one case of very violent character the man, aged 37 years, slept for 16 hours straight off. He awoke with his head clear, but felt tired; this, however, soon passed off, for he got out of bed and went for a walk with his wife. The notes of the following case may prove interesting. A man, aged 50 years, much addicted to alcohol, was, after a heavy drinking bout, attacked with a very violent access of delirium. In the evening half an ounce of the tincture of digitalis was ordered; the medicine was fully administered and very shortly the patient vomited it. During the night he was so violent that, being a robust and powerful man, his friends were compelled to rope him down to the bed. On being visited at 9 o'clock in the morning it was discovered that the chemist had dispensed in error half an ounce of tincture of aconite. On being taxed with the mistake his only answer was, with a shrug of the shoulders, "Mistakes *will* occur." Having obtained half an ounce of the digitalis it was immediately given (9 A.M.). Within half an hour the patient was perfectly quiet, and gradually, hour by hour, became more and more himself and rational. His bonds, which had been so tightly tied that his wrists and ankles were swollen and cut, were loosed. He did not sleep, but lay with his eyes closed and complained piteously of the injuries to his hands and feet. At 10 P.M. he fell into a deep sleep and slept without intermission till the following morning, when he awoke with his head clear and free from any pain. His only trouble was the injury to his wrists and feet. There was no fever, but the pulse which before the digitalis had been full and normal in rate, became very small and fast (114). After a few days of weakness and loss of appetite he rapidly became well.

The smallness and rapidity of the pulse were noted in all cases treated with the digitalis. The case distinctly proves that, even when sleep does not occur immediately, the effect of the digitalis is to quiet the cerebral circulation. Another great advantage of the treatment is the fact that nearly all

the patients were able almost at once to return to their duties. I am, Sirs, yours faithfully,

Ascot, Sept. 17th, 1900. A. GORDON PATERSON, M.D. Edin.

## "PROFESSIONAL ORGANISATIONS."

*To the Editors of* THE LANCET.

SIRS,—Dr. Ryley is anxious to know why I agree as to the desirability of a central representative body in the medical profession. Partly in order that questions like those between him and the other Yarmouth practitioners might be settled by what both sides should recognise as the collective voice of the profession. Dr. Ryley also presses me to explain what is the attitude of the Yarmouth District Committee towards London consultants. Our resolution, quoted by Dr. Ryley, confines itself to medical practitioners in the town and neighbourhood, and the district committee has not gone beyond this. Having answered Dr. Ryley's questions may I ask one in turn?

So far Dr. Ryley has given no indication of his present views as to the conduct of the gentlemen with whom he desires us to consult. He will, I suppose, admit that these medical men accepted their present appointments knowing that there was a dispute pending between the united local profession on the one hand and a section of the public on the other, and that their acceptance was an act of hostility to the profession; that the advertisement of the appointments appeared only in the lay press, the medical press refusing unanimously to insert them; that the appointments themselves were at a fixed salary for attendance on an unduly large number of patients, all profit from their medical work going to the lay body; that the management was entirely in the hands of a lay committee; and that there was no restriction as to the class of patients to be attended. Considering Dr. Ryley's present attitude I think it not unreasonable to ask whether he esteems the action of these gentlemen deserving of professional reprobation, and if so how he thinks that reprobation should be expressed? I trust that Dr. Ryley's many professional and other engagements will not prevent his replying to this important question, especially as his answer need not be long.

As to "common humanity," Dr. Ryley's heroics are out of place. Common humanity is not at stake in the difference between himself and his Yarmouth fellow practitioners, and therefore he is not yet called upon to brave "ostracism or boycotting" in its defence. Our correspondence with him shows that the difference is not on the point of humanity, but on quite other issues. His demands were (*a*) that our attitude towards the institute surgeons should be referred to some "central representative authority," and (*b*) that that attitude should be modified in certain ways, which might, perhaps, be more agreeable to those surgeons but would make little practical difference to their patients. (*a*) fell through for lack of the mutually desired "central representative authority." The General Medical Council is restricted, as it has always held, by its statutory powers to taking cognisance of offences alleged to be "infamous in a professional respect," and Dr. Ryley's contrition for his former conduct has not yet led him to ask that such censure be passed upon it. The councils of the various medical corporations are only authoritative at most as to their own diplomates and are not strikingly representative of those. Of the British Medical Association Dr. Ryley is not a member, and, we believe, declines to recognise its ethical committee as either representative or authoritative. As to (*b*), we are, and have always been, prepared to give immediate help if called upon to the institute surgeons (or conversely, as Dr. Ryley points out, to accept it if necessary from them) in cases of sudden and grave emergency, or to treat their patients, gratuitously if necessary, who desire our advice. So much, we consider, is required by "common humanity," and suffices to meet its demands. Dr. Ryley desires us further to consult with the surgeon, but will not consent to waive the fee; thus the issue is not one of humanity to the *patient*, but of degree of recognition of the *surgeon* and of a possible small pecuniary sacrifice.

This, of course, is an *ex parte* statement whose fairness can be tested only by reference to the correspondence now in your hands. Should you, Sirs, afford space to publish that correspondence, your readers can judge for themselves; otherwise we leave it to you to say whether we have fairly stated the points involved. And if these be the points then we appeal with confidence to our medical brethren to say whether we or Dr. Ryley have shown a greater regard for "common humanity" and for the honour and interests of our profession. I am, Sirs, yours faithfully,

Great Yarmouth, Sept. 18th, 1900. W. E. WYLLYS.

*** We hope to publish an article dealing with this matter in our issue of next week.—ED. L.

## "ARE COPPER SALTS POISONOUS?"

*To the Editors of* THE LANCET.

SIRS,—Under the above heading there is an annotation in THE LANCET of Sept. 15th (p. 821) in which I am glad to find that the opinion I expressed in reference to the sale of so-called "greened" vegetables in a paper on the Action of Copper on the Human Body, read before the British Association (Chemical Section), has your support. When you say, "We do not object to the plan of preserving the colour of peas by copper" you expressly what I endeavoured to prove in a brief part of my paper. For though most of your criticism is directed to this point, it was a very minor one in my paper. Your objection to the purchaser not being notified that the purchased article is coppered I hardly thought came within the consideration of "the action of copper"—a question whose investigation was large enough to occupy me constantly since the beginning of this year. In my judgment, if so-called "greened" vegetables were poisonous or injurious notification as to their being coppered would not justify their sale—it should be prohibited. And with this, too, I have no doubt you are in agreement, because I anticipate you would not approve of the sale of poisonous or injurious food and also because you illustrate your objection by the case of meat cooked in a gas-oven being improperly represented as being roasted. When we are in agreement on the really important point it is undesirable to occupy your space by discussing minor points, where difference is mainly due to the necessary briefness of the abstract brought to your notice. But I would like to refer to an error in your remarks when you state that my paper was on the subject given in the above heading. Of course I never questioned that there are poisonous salts of copper. Some of them are referred to in the published abstract of my paper. The correct title of my paper I have given above, and but brief reference was made to the subject of coppered vegetables. My researches prove that salts of copper are being constantly absorbed into the blood and excreted by persons engaged in working copper ore and alloys of the metal, while they are unconscious of the fact and continue in perfect health, and that consequently they are not "poisoned"; further that copper salts ingested with food, or alone, lead to absorption into the blood and excretion of copper salts without the slightest ill effect.

I am, Sirs, yours faithfully,

Bradford, Sept. 15th, 1900. THOMAS WHITESIDE HIME.

## "PROFESSOR LUSTIG'S PLAGUE SERUM."

*To the Editors of* THE LANCET.

SIRS,—In discussing a scientific subject it is unnecessary to reply to the personal attacks made upon me by Dr. Mayr in THE LANCET of August 11th, p. 461. Such attacks in debate may be common on the continent of Europe, but Englishmen do not consider that they advance an argument. I need only remark that it seems an extraordinary thing that a correspondent cannot criticise reports and reputed results of a method of treatment without ignorance of the subject or wilful misleading being put forward to explain his opposition.

I have argued the value of the experiments referred to entirely upon their own merits and I still hold that even if alternate cases have been regularly taken with others as controls *it is not satisfactory evidence when moribund and other cases have been excluded.* In the later experiments we want to know how many and what proportion of moribund and convalescent cases were taken out from each series. The later results of this method of treatment may appear to the physicians concerned very satisfactory, but unless their system of experiment is above suspicion their conclusions cannot be convincing. My opponents and I are at issue upon the reading of the statistics

and upon the basis adopted for the construction of those statistics. Supplementary to what I have previously reported I should like to point out from the figures contained in Dr. Mayr's own letter that when "out-and-out" selection of cases was adopted the recovery-rate was 33·2 per cent., whereas when the patients were said *not* to be selected (although all the time moribund and convalescent cases were excluded) the recovery-rate was almost identical—33·8 per cent. Again, the controls are credited with only 21·3 per cent. recoveries, but this is the recovery-rate or thereabouts of all cases admitted to hospital without the exclusion of any cases whatever. If the excluded cases have been subsequently added to each series before working out the percentages the figures become intelligible, but this is not stated in any of the reports and we do not know whether the excluded cases were approximately equal in the two series. In a previous letter from Dr. Choksy he says: "The exclusion of moribunds and convalescents did not tell in favour of the serum," and the inference therefore is that these cases were not included. If that be so the whole series of figures are worthless, because if you deduct the moribunds from a given number of admissions the natural recovery-rate will be better than under the serum treatment. When moribunds or convalescents are excluded there must necessarily be the error of personal opinion as to the condition of the patient. If, therefore, Dr. Mayr or Dr. Choksy or Lieutenant-Colonel Wilkins can show a series of cases in which every admission has been included and in which the serum cases show better results than the others, or a series of cases in which the excluded moribund and other cases on the two sides are approximately equal, and still the results are satisfactory, I shall be glad to accept their conclusions.

At present I am not satisfied that the conditions thereby involved have been carried out and I am therefore not disposed to accept figures calculated on a faulty basis. With regard to Lieutenant-Colonel Wilkins's short letter I claim that it is not fair fighting to speak of "the inaccuracies which this (my) article contains" without stating what those reputed errors are. Lieutenant-Colonel Wilkins shelters himself under Dr. Mayr's letter, in which, however, there is not a single argument advanced against my reasoning but merely a statement of reputed results at the Arthur-road Hospital and various uncomplimentary remarks about myself. I am, Sirs, yours faithfully,

YOUR SPECIAL CORRESPONDENT.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Depletion of Field Hospitals in India and Arrangements for China.—The "Gwalior" Hospital Ship.—The Short-handedness of the Indian Medical Service.—The Cholera and Plague Epidemics.—The Increased Mortality in the Cities of Bombay and Calcutta.—Fresh Plague Regulations at Poona.*

THE Secretary of State has been informed that the medical arrangements made in India only provide for the requirements of the force sent from India and do not include the requirements of troops at China stations before the commencement of hostilities. As the supply of field hospitals sent to China is extremely liberal and as the greater part of the troops have gone from India the hospital accommodation will probably meet all requirements. In the meantime, however, the reserves of hospital equipment in India have been depleted and the India Office has therefore been asked to despatch immediately to India complete equipment for the four general hospitals of 500 beds each required for the China force. All the hospitals have been fully equipped with comforts, surgical appliances, and mosquito nets. Thirty dandies with 180 bearers to each field hospital have been despatched. Water transport is largely relied on, but nine tongas have gone and more will follow when the roads are reported fit. One field medical store has been sent to the north and another to the south of China. The following arrangements have been made. For Europeans, strength about 1000: for officers, 10 beds; for men, 200 beds. In field and general hospitals also 175 beds. In the hospital ship *Maine*, for natives, strength about 30,000 combatants and non-combatants, 1300 beds; in native hospital ships containing about 365 beds, and for reception at Calcutta General Hospital, 500 beds. The *personnel* sent or going to China are 135 medical officers, 25 assistant surgeons, and 224 hospital assistants; five nurses are attached to the general hospital.

The Maharajah of Gwalior's hospital ship *Gwalior* is a fine vessel of 4200 tons register. Her main deck will provide accommodation for 160 beds. In the orlop deck will be the hospital with accommodation for dressers and ward orderlies. There will be six special swinging beds for fracture cases. Convalescents will be accommodated on the saloon deck. There are three medical officers' cabins which are supplied with electric bells so that they can be communicated with at any time both day and night. A disinfecting-room, mortuary, and latrines for the staff are provided on the upper deck forward. A special machine for disinfecting clothes similar to the one used on the *Carthage* will arrive shortly. On the poop will be a completely isolated infectious ward with 16 beds. Roentgen ray apparatus will be taken. There is a complete service for drinking-water for all castes. Lieutenant-Colonel A. M. Crofts, I.M.S., will be in principal medical charge with Captain M. Moore, I.M.S., and another officer. It is stated that His Highness the Maharajah is prepared to spend £100,000 upon this undertaking.

In view of the drain upon the medical service the Government of India have issued orders recalling Indian Medical Service officers on leave on private affairs, and the Secretary of State has been asked to inquire whether retired medical officers will volunteer for service in India. The Government have also sanctioned a proposal for the re-engagement of pensioned military assistant surgeons on the same pay as they used to draw before. Major J. T. W. Leslie, I.M.S., Major F. P. Maynard, I.M.S., and Captain G. Smith, who are now engaged on special scientific work at home, will return to India.

A further considerable increase in the plague mortality throughout India is reported, the total number of deaths in the past week having risen to 629 from 449 for the previous week. The chief rise is in Mysore State (281), Mysore city returning 188 and Bangalore city 21. In Bombay city the mortality increased from 51 to 75, and in the province from 64 to 160. In Calcutta there were 84 deaths and in the Bengal districts 18. The remainder of India continues free.

While cholera continues to be very prevalent in Bombay city and a few other places it is satisfactory to find that among the troops it is decreasing. The total numbers since August 3rd are 271 cases with 165 deaths. There have been over 400 deaths from cholera during the past week in Bombay city and over 100 are reported in Kashmir. In Calcutta there were only nine.

The general mortality in Bombay city has decreased from 2203 last week (rate 136·87 per 1000) to 1624 this week. Of this number 64 are returned as due to plague and 408 as due to cholera. These figures still leave about 400 deaths to be accounted for. The sudden rise was doubtless due to cholera and the deaths occurred in all parts of the city. There is said to be at the present time a large ill-fed mendicant population in consequence of the closing of several mills and of the famine. The infantile mortality amongst the poorest classes is also described as terrible, and it is said that on one day 60 infants died. The returns show a sudden increase of deaths from phthisis. Usually about from 80 to 90 deaths a week, they rose to 161 and then to 210. With respiratory diseases the figures under this head trebled the average and in a single week 500 deaths were recorded from this class of disease alone, the normal general mortality of Bombay being from 500 to 600 deaths a week.

The general mortality in Calcutta is also higher than usual. With an average of about 30 per 1000 it has increased from 37·2 per 1000 for the week ending August 4th to a rate of 42·2 per 1000 this week, and seems likely to go higher still. There is an increase of nearly 50 per cent. over the normal. Part of this is explained by extra deaths from cholera and small-pox and from plague and suspected cases. There is a residuum of about 200 deaths during the past week unaccounted for.

Fresh plague regulations of a very modified form have been recently promulgated at Poona. They are apparently the result of the recent resolution of the Government of India on the report of the Plague Commission. Many of the old orders have been omitted. There will be disinfection of houses in which plague has been found to exist and also of adjoining houses. Free inoculation will be available at convenient hours and facilities will be given for inoculation at

home. This is about all. The minimum of interference has at length been arrived at in Poona, but this minimum has long been attained in Calcutta. There is no evidence to show that the avoidance of active measures in Calcutta contributed to the outbreaks. On the contrary Calcutta has suffered much less than other places have suffered.

August 30th.

# THE FIRST INTERNATIONAL CONGRESS OF THE MANUFACTURERS OF PHARMACEUTICAL SPECIALITIES.

(FROM OUR SPECIAL CORRESPONDENT.)

## RAPID GROWTH OF THE TRADE IN "MEDICAL SPECIALITIES."

THE rapid development of the trade in pharmaceutical specialities has occasioned much recrimination and many ardent controversies. The special drug, the secret remedy, the nostrum were strongly denounced at the International Congress of Deontology or Medical Ethics. In spite of the hostility of the medical profession and the dispensing chemists the pharmaceutical speciality has become an important and separate branch of trade and has been increasing by leaps and bounds. So great is this progress that the manufacturers of these specialities have been able to hold an international congress which met at the Palace of Congresses on Sept. 2nd and 3rd and had no less than 468 members. Though 371 out of these were French manufacturers and druggists there were a great many foreign nations represented, but they sent only few delegates. As is often the case, the smallest countries had the greatest number of representatives. Thus while Great Britain had only four, Germany five, Austria three, the United States two, and Russia one, Belgium had 10, Italy 11, Cuba eight, Bolivia four, Brazil three, Egypt four, Holland three, Mexico four, Switzerland four, Bulgaria, Algeria, Spain, Hayti, and Peru two each, and Chili, Colombia, Greece, Guatemala, Sweden, Tunis, Portugal, Turkey, and Uruguay one each. But what are more remarkable than these figures are the statistics given of the exhibitors of pharmaceutical specialities. At the Universal Exhibition of 1855 there were only five such exhibitors. In 1867 their number had increased to 23, and in 1878 to 29, and they were all French. It was said in the course of the debate that this branch of the trade existed 50 years ago, but that it did not really develop and become important till within the last 25 years. Thus it is that at the Universal Exhibition of 1889 we find that there were no less than 154 exhibitors of pharmaceutical specialities, and these were no longer only French firms but 87 of them came from other countries. At the present Universal Exhibition there are 399 exhibitors of pharmaceutical specialities, and of these 138 are foreign and colonial. These figures are sufficiently eloquent. In the face of such facts the necessity of regulating this trade in a satisfactory manner is recognised by practical men. It was to attain this end that the Congress in question was convoked.

An influential organising committee had been formed. Its president, who also presided over the Congress, was M. Victor Fumouze, M.D., Pharmacist of the First Class, Honorary President of the Union of Manufacturers for the Protection of Industrial Property, and member of the firm of Fumouze Brothers. It was Dr. Fumouze who on behalf of the French Chambers of Commerce received and entertained the delegates of the British Chamber of Commerce when they assembled last week in Paris. The secretary of the committee was M. M. Leprince, M.D., Pharmacist of the First Class, Laureate of the Faculty of Medicine, of the upper School of Pharmacy and of the Hospitals of Paris, Member of the Committee for Class 54, Group IX. of the Exhibition. The other members of the committee also held highly honourable positions. The majority of the manufacturers who were members of the Congress deal exclusively with the medical profession, advertise only in the medical journals, and do not appeal to the general public. Still some of the members of the Congress belonged to the other class which does advertise in the lay press and caters for the general public.

M. A. GIRARD read the first report submitted to the Congress which dealt with the general conditions of the trade. He remarked that English specialities were exported because Englishmen when abroad required these medicaments, but that French and German specialities were sent abroad because of the high reputation which they enjoyed. Practically France, Germany, and England were the only countries that did a large export trade. It was difficult to ascertain the amount of these exports as the drugs were not entered by the customs under the heading of "specialities." Still, it was easy to see that the largest purchasers of French remedies were the States of Southern America. In Europe the largest quantities of French pharmaceutical specialities were sold in England, Belgium, and Spain. The French imported more from England than from all the other countries put together. The report then reviewed the trade of a great number of countries and when it had been read a short discussion ensued which concluded with the adoption of the following motion:—

That in each country administrative or legal restrictions brought to bear on the importation and sale of pharmaceutical specialities should have no other object than that of protecting public health. That the common law should apply to these products in regard to legal, administrative, or fiscal restrictions, press censorship, stamp duties, special taxation, &c.

## ABOLITION OF SECRET REMEDIES.

At the second or afternoon sitting M. AUGENDRE read a lengthy report on the law in different countries with regard to secret remedies, &c. That of England was summed up as "perfect freedom for those who possessed a diploma." But while there were regulations with regard to poisons there was no direct interference with pharmaceutical specialities, and yet trade-marks were protected throughout the United Kingdom. The most interesting passage of the report, however, related to Belgium, because it analysed a new project of law which was not only likely to be adopted in that country, but is very similar to the project which M. Astier had introduced in the French Legislature. Article 25 of this project of law stipulates that all drugs must be of good quality and Article 27 that druggists will be held responsible not only for what they have sold but for what they keep in stock for sale. Article 28 introduces a most important and novel stipulation. It enacts that medicaments prepared for private persons at the request of the purchaser or in virtue of a medical prescription shall bear a label mentioning in very clearly written characters its qualitative composition or the passage from the Pharmacopœia or the formula which has been employed. If such medicaments contain a toxic substance the quantity used must likewise be clearly indicated on the label, in the pamphlets, and in the prospectuses relating to the same. The Government is to prepare a list of toxic substances to which the latter clause shall apply. The dispensing chemist whether he sells a manufactured speciality or not is alone held responsible. If such speciality contains a toxic substance the druggist may only sell it when the purchaser presents a medical prescription. In France the pharmacists are governed by the law of the 21st Germinal Year XI., and by no less than 32 different ordinances, decrees, &c., issued since that date. But on June 12th last M. Astier introduced in the Chamber of Deputies a Bill which, as already observed, is very similar to the Belgian project of law. In the preamble to his Bill M. Astier says that above all the dispensing chemist must remain a man of science on whose probity and devotion the public can rely. But he goes on to explain that the science of chemistry as applied to therapeutics has made gigantic progress. Formerly only a few substances were employed, and these could all be manipulated in the druggist's shop. Now many of them have to be made wholesale in large factories, whence they are purchased by the dispensing chemist. The entire position has changed and the law must also be altered. Consequently M. Augendre concluded his lengthy report by proposing resolutions to the effect that every effort should be made to assimilate the regulations governing the importation of pharmaceutical specialities into different countries, that the trade-mark of the manufacturers should be protected from imitations, and that the custom duties imposed should not exceed 10 per cent. of the value of the article. These suggestions were adopted after some discussion. The general tone of the debate showed that the members of the Congress were mostly in favour of reciprocity and were anxious to see pharmaceutical specialities figure as distinct objects of exportation and importation in all future treaties of commerce.

## THE INVENTOR AND HIS MARK.

The second day of the Congress was mainly devoted to the

reading and discussion of M. LÉON COMAR'S report on the protection of trade-marks. This paper was a masterly summary of this somewhat intricate question, in which many interests conflict. As a manufacturer the druggist incurs the same risks, pays the same taxes as other manufacturers, and therefore should have the right to select a trade-mark. But, unlike other manufacturers, he must pass examinations, possess diplomas, and is subjected to special interferences of the law. In France there is, further, a tendency to deny his right to a trade-mark on the ground that this may deprive the public of a useful remedy, and therefore the druggist is not to enjoy any advantage from a discovery or invention which he may make. Most countries, however, do recognise that the manufacturer has the right to preserve the distinctive name by which his particular product may be recognised. But the giving of such a name is a matter of great difficulty. The name of the principal ingredient cannot be used because it is a word that is the common property of all. On the other hand medical men very naturally insist that the name shall indicate what is the principal ingredient, and it is difficult to reconcile these two exigencies. It is consequently necessary to invent a word that is not the real word and yet that shall indirectly indicate the nature of the substance. M. Comar brought forward a series of propositions demanding that trade-marks or manufacturers' marks should be recognised and protected in all countries, that the name of the manufacturer might be considered as a trade mark, that such trade-mark might include the indispensable descriptive word, such as "syrup," "powder," "pill," &c., and that all nations should adopt similar patent laws. Most countries allow processes of manufacture to be patented, but will not give patents for chemical, pharmaceutical, or alimentary products. Great Britain, Belgium, Brazil, Mexico, and Guatemala alone protect both the process and the product.

### APPROBATION FROM THE ITALIAN GOVERNMENT.

M. PELLETIER, who was delegated by the French Government to help in the negotiation of various treaties of commerce, complimented M. Comar on his lucid exposition of the situation. Every other form of human art and industry had subdivided itself into specialities and druggists were bound to follow this law. By devoting themselves to one particular branch they would produce better drugs, and this was to the benefit of the sick and to that of the medical practitioners who would be better able to rely on the effect of their prescriptions. The manufacturer on his side was entitled to a legitimate profit when he effected a real improvement. But such protection was denied to the manufacturers in France by the decree of 1844 on the ground that nothing must be done to encourage charlatanism. To patent a drug would seem like endorsing a charlatan with Government approbation. But since then economic conditions had greatly changed. Industry was the transformation of raw materials into something that could be sold to the public. This was what the druggist did, and he paid taxes and might become bankrupt like other manufacturers. Even a patent might be granted, for it placed the secret into the public domain and generally stimulated industry and progress. The patentee's financial advantage did not last long. But it was said that by granting a patent a marvellous remedy might be kept back and delay occur before it became accessible at a cheap rate. To meet such comparatively rare cases the State might retain the right to purchase patents for the public good.

M. MAILLORD DE MARAFY regretted the present dispute between the dispensing pharmacists and the manufacturing pharmacists. Their trade interests might be antagonistic, but not so their general human interests. Resolutions of a congress only influenced governments in so far as they were supported by good arguments. In all branches of trade the same product bore the same name. Why should not the chemist, who had to incur an expensive education, enjoy the same privilege as the grocer or biscuit-maker? Yet in France a law to this effect had been under discussion for 20 years and had not yet been passed. He then quoted an extract from a Ministerial circular from the Italian Government dated March 8th, 1884, which stated that: "No one contests the advantages which pharmaceutical specialties may realise. There is the purity of the substances employed, their rational treatment so as to ensure the therapeutic action of the principal ingredient to modify, if need be, some secondary effect which may be unfavourable from the curative point of view. Then there is the care taken so that the preparation shall be perfect and as far as possible not liable to deterioration, and also to avoid chemical incompatibilities that might render useless the action of the medicament. Also these preparations sometimes succeed in conferring to the remedy a flavour and appearance that are pleasing to the patients." M. de Marafy remarked that it was often said that testimonials in favour of specialities were only obtained by bribery, but he thought that this testimonial given by the Italian Government could scarcely be attributed to any such corrupt origin.

The PRESIDENT (Dr. Fumouze) remarked that the dispensing chemists at their congress had carried a motion to the effect that no commercial scientific denomination should be allowed to constitute a trade-mark. He agreed that the manufacturers of special remedies should inscribe on their labels the dose of the active principle employed, but they ought not to be compelled to describe all the component parts of the preparation. To give the complete prescription would enable anyone to produce identically the same remedy. This and the denial of the trade-mark would destroy the business of the pharmaceutical specialists. Also whatever the details to be given on the labels the rule should be the same for all countries, otherwise inextricable confusion would arise. They were ready to give all information necessary for medical purposes but not such details as would render imitation easy.

### THE GENUINE AND THE QUACK REMEDY.

M. ASTIER explained his action in Parliament. Though himself a specialist he had altered Article 5 of the Bill so as to safeguard the interests of the public. One was rarely gifted with all reason and no error. It must be recognised that pharmacists were a privileged class. The industry of manufacturing and dispensing drugs was monopolised by those who held the diploma. Such monopoly was against the principle of freedom to trade conferred by the great Revolution; therefore the nation had in exchange for the privilege granted the right to impose special burdens and responsibilities. There was a weak side in the claims of the specialists. When a specialist proposed to make hair grow and corns drop off with one and the same substance it was not surprising if the public felt some doubts in granting all the demands of the specialists. When he proposed in the Bill that the dose of the active principles should be stated he wanted to check the vulgar parasites who imitated genuine and useful remedies which had been produced after much study and expense. He had no care for the mountebank hangers-on to what should be a highly scientific and respectable trade. He also appreciated the objections of the medical profession. If, for instance, a medical practitioner on being called in found the patient in a condition of collapse and was told that he had been taking some patent syrup, how was it possible to give an antidote or to alter suitably the treatment unless there were means of knowing, and that immediately, what the syrup in question contained? This should be inscribed on the label.

M. BERNEVILLE, a Belgian delegate, agreed that the active principle of the medicament should be stated on the label. It should be known what was being taken and in what doses.

This principle as defined by the Bill before the Belgium Parliament was formulated as a resolution and adopted by the Congress. The matter, therefore, stands thus. The Congress repudiates the idea of secret remedies; some detail in the mode of manufacture or of putting together the preparation might be kept from the public but the active principle must be disclosed. No one must prescribe or take medicine in ignorance of its active potentialities. Knowing this much any dispensing chemist might be asked to prepare something similar. If he did this and the result was as good, and especially if the medicament were cheaper, then the speciality would die a natural death; in fact, it would have been demonstrated that it did not deserve to be called a speciality. On the other hand, if it was something that the ordinary chemist could not readily imitate then it deserved to stand because of its special or exceptional merits. This principle if acted upon would certainly be the death-knell of many so-called specialities, but it would purify an important and ever-increasing trade, would silence the accusation now so freely made of charlatanism or quackery, and would be an encouragment to genuine inventions, discoveries, or improvements. Such was the upshot of this somewhat remarkable Congress and of the first international meeting of pharmaceutical specialists ever held.

Paris, Sept. 10th.

# THE PRESIDENCY GENERAL HOSPITAL, CALCUTTA.

NEW BLOCK FOR MEN.

(FROM A CORRESPONDENT.)

THIS new hospital, about which I propose now to give only a preliminary notice, is not yet open for the reception of patients. The building consists of a central block which will be chiefly taken up by administrative offices and private wards with a large rectangular block on each side. These contain the six main wards, two on each floor, and will accommodate 24 patients in each ward. There are at the inner end of the ward the ward offices and at the outer end of the building are the lavatories. The building has three storeys and is superimposed on what is practically a series of pillars, giving a free air space eight feet in height below the ground floor. The aspect is north and south—the building running east and west—because the prevailing winds are from the south. A wide verandah runs round each floor from one end of each block to the other. The roof is flat and affords a most excellent promenade extending over the whole building. The main wards are 108 feet long by 26 feet wide and are 16 feet six inches from floor to ceiling. As they are arranged to accommodate 24 beds this gives 116 superficial square feet for each patient and 1914 cubic feet capacity. There is a doorway between each bed so that the circulation of air can be almost as free as out of doors. The floor is cemented and the wall is tiled five feet up. There are no ledges for dust to collect on. The ward closets and lavatories are isolated from the main block and occupy the small wings at the east and west extremities of the building. The medical attendant's room and the nurse's room are arranged to overlook each ward. Besides the verandah there is a day room for the patients of each ward. There are also two separation wards to each main ward, which are placed in the block containing the ward officer. The central block contains six private wards on each storey. The operating room is beautifully situated over the porch. It faces north and is open on three sides. There is an anæsthetic room leading into it, also a splint and bandage room close by.

The design of the building is excellent and is so arranged as to adopt all the latest improvements. The architecture is plain, but the building taken as a whole is imposing. There have yet to be built nurses' quarters and kitchen quarters as well as quarters for infectious cases. These will all be isolated from the main building and also from each other. The lighting will, of course, be by electricity, which will also be the motive power for the punkahs. At some future time it is proposed to build a similar structure for women, this one being intended at present solely for men. When the hospital is furnished and ready for occupation I hope to send you a second notice referring to details, as I have here merely attempted to describe its main features.

# BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

*The Musical Festival.*

THE Birmingham musical festival is a triennial occurrence which will fall this year in October. Much interest is attached to the performances since the proceeds form an important element in the funds of the General Hospital. Formerly the festival was held in August; on the last two occasions it was changed to October without any diminution in the receipts. On the present occasion the programme which has been issued gives evidence of a very full and complete list of works, and bids fair to uphold the reputation which the festival has always enjoyed. The first musical festival in aid of the hospital was held in 1768, when a sum of £299 was realised; for the last festival, in 1897, £5117 was the amount of the net return. In addition to this the valuable organ in the town hall, valued at upwards of £5000, is the property of the General Hospital, as is also an extensive musical library. It would be needless to mention the musical works to which the festival owes its celebrity. The *Elijah* was first written for this festival, and its performance was conducted by Mendelssohn himself in 1846. Since then other works destined to produce a lasting fame for their authors have been brought out here. Copies of the programmes for the present year with all arrangements can be obtained from the committee at the town hall.

*The "Long Pull" Question.*

The general opinion is that the "long pull" in the beer trade is a pernicious habit, that it leads to unfair competition, and that it tends to the increase of drunkenness. The question is complicated much by the attitude of the wholesale trade and the fact of what are called free licences. It would appear from the variety of conflicting points introduced at the licensing sessions that some attempts have been made to influence the decisions of the Bench. To outsiders who hear that the "long pull" is, or should be, limited to 25 per cent. over-measure, some impression must be conveyed of the profits which admit of this liberal measure and yet leave sufficient to cover all the expenses of which the trade complains.

*Plague Precautions.*

That the authorities are actuated by a desire to prevent as well as to cure is evidenced by the fact that the medical officer of health of the city has been notified by the medical officer of health of Glasgow of a Birmingham gentleman who travelled from Glasgow to Greenwich in the steamship *Copeland* and then proceeded home to this city. He will be kept under strict but unobtrusive notice so as to ensure every precaution should he be the means of spreading the disease.

Sept. 18th.

# MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

*Out-door Relief.*

IT may, no doubt, be taken as a sign of the increasingly humanitarian feeling of the times that boards of guardians are less rigid than they used to be as to granting out-door relief as an alternative to the offer of "the house," and if the practice is sufficiently safeguarded with respect to abuse there seems to be no good reason against an extension of it. At all events this seems to be the feeling at the Salford board, for at the meeting held on Sept. 14th the attention was drawn to the question by one of the guardians asking for an explanation of the increase in out-door relief, "especially in view of the present state of trade and the favourable weather." The explanation was that "the general disposition nowadays both by boards of guardians and the public was in favour of giving a little more out-relief." Three years ago the amount distributed per week was £115 and it has increased to £140.

*The Cancer Pavilion and Home.*

Mr. F. A. Southam and Mr. G. A. Wright have accepted appointments as honorary surgeons to the Manchester Cancer Pavilion and Home.

*Registration Difficulties in Fallowfield.*

Some inconvenience is felt at Fallowfield, a rapidly increasing suburb of Manchester, as to the registration of births and deaths. A new and populous district is attached most inconveniently to Ardwick which is not easily accessible, while the attendance at the branch office in Rusholme is very meagre. The matter was brought to the notice of the Chorlton board of guardians on Sept. 14th by a letter from Dr. W. E. Sawers Scott suggesting that "the increase of population warranted a readjustment and increase of the number of districts." The clerk said he would "ascertain from the registrar whether more attendance could not be given at the Rusholme branch office." All reasonable facilities should certainly be afforded for registration.

*Preservatives in Milk.*

A milk-seller was charged the other week before the Bolton county justices by the Lancashire County Council with selling adulterated milk. Mr. Wilson of Preston, who appeared for the council, said that they desired to give the utmost publicity to the case, "which had been brought to put a stop to the growing practice in Lancashire of putting preservatives in milk." It seems that the sale of such things is being actively pushed among the farmers by agents selling formalin and other preparations. Part of a pint of new milk bought by the police was sent for analysis and found to contain formalin, the amount of which could not,

however, be ascertained by the methods at present in use. Dr. Collingwood Williams, one of the county analysts, spoke to analysing and detecting formalin, which was a powerful preservative, which was very pungent and irritating, and which made the milk less digestible. Mr. E. Sargeant, medical officer of health for the county, objected to the use of any preservative in milk. He thought formalin specially dangerous, particularly in the hands of inexperienced people. "It retarded digestion and was specially injurious to young people." The defendant said that a man from Rochdale called on him and sold him a small bottle of the preservative which was called "lacticine," for which he paid 2*s*. 9*d*. He used 10 drops of it, less than the quantity directed, to 40 quarts of milk. There was a thunderstorm at the time and he was afraid that the milk would not keep through the night. He gave up the bottle to the police. The presiding magistrate said that as the defendant "had helped them all he could" he would only be fined 10*s*. and costs. There is no wonder that farmers should wish to save so readily decomposing a substance as milk from being spoiled and it would be well if county council agricultural lecturers would give instructions as to the best ways of dealing with it from the moment it is received into the milking-pail until its delivery to the consumer, not forgetting to inculcate the cleanliness of hands and udder so often considered unnecessary by the rustic mind.

*Ice-cream Manufacture.*

The manufacture of ice-cream for sale in the streets is a matter engaging the attention of the corporations both of Manchester and Salford. It is chiefly in the hands of poor Italians who are careless and ignorant as to points of hygiene and generally too poverty-stricken to be able to conduct their work on suitable premises. At the Manchester city police-court Carolina Fuska was summoned by the Sanitary Committee of the corporation and fined 5*s*. and costs "for storing ice-cream on her premises without taking proper precautions for protecting it from infection or contamination." Victor Crolla was also fined 5*s*. and costs "for manufacturing ice-cream in a place which was in a dirty condition." These were the first prosecutions of the kind in the city, and the presiding magistrate said that in future more severe penalties might be imposed. At the meeting of the Salford council the other week it was said that the question as to the regulation of ice-cream vendors would come up at the next meeting of the Watch Committee. One of the members stated that it was not possible to license the ice-cream vendors. They had tried to get powers in their Act of 1899, but the matter was struck out of their Bill.

Sept. 18th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Workmen's Dwellings and the Demolition of Insanitary Property.*

THE re-housing of the poor who have been dispossessed of their tenements owing to the demolition of insanitary property continues to be a source of anxiety to the Insanitary Property Committee of the City Council. An outcry has been raised against the hardship inflicted upon tenants through their being dispossessed of their holdings without means being taken to provide them with more suitable dwellings. The matter is now engaging the attention of the committee insomuch that the city surveyor has been instructed to report how far tenants of municipal dwellings lived from their work. There can be no doubt that the introduction of electric tramways throughout the city minimises the hardship imposed upon workmen in having to reside at a distance from their occupations, as the city is quickly approached from any point at a cheap rate. A special meeting of the City Council was held at the town hall on Sept. 13th to consider a recommendation of the Insanitary Property Committee—

That powers be obtained by provisional order or Act of Parliament to borrow a sum of £200,000 to enable the council to purchase and demolish insanitary houses under the provisions of the Liverpool Sanitary Amendment Act, 1864.

The recommendation was carried by a substantial majority, an amendment reducing the amount to £50,000 having been previously defeated.

*Civic Grant to the Hospital Pavilion at Fazakerley.*

The City Council at their meeting on Sept. 13th resolved that £4000 should be placed at the disposal of the Port Sanitary and Hospital Committee for furnishing the hospital pavilion on the Warbreck House estate at Fazakerley.

*The Inter-parochial Hospital for Tuberculosis.*

The final stage in the matter of the proposed inter-parochial hospital for the treatment of tuberculosis has now been reached. The joint parochial committee of the three unions —Liverpool, West Derby, and Toxteth Park—have given instructions to the architect to proceed with the erection of the hospital at Heswell on the site alluded to in THE LANCET of July 21st (p. 223), at a cost not exceeding £5700.

*The Roentgen Rays at the Liverpool Workhouse.*

The introduction into the workhouse hospital of the apparatus for applying the Roentgen rays affords proof of the intelligent interest taken by the Select Vestry in the treatment of the sick poor of the parish of Liverpool. The hospital contains a fine operating theatre and a post-mortem room fully equipped. Dr. W. Alexander is to be congratulated upon the numerous improvements initiated by him in recent years and upon having made the most of a building which by comparison with other general hospitals throughout the city was fast becoming out of date.

*The Plague in Foreign Ports.*

The Town Clerk of Liverpool has sent out notices that the Health Committee have decided to put in force the provisions of the Infectious Diseases Notification Act for one month from the date of the notice in the case of bubonic plague, should it unfortunately gain access to the port of Liverpool. The Select Vestry are also taking precautions against the plague in the establishment of an isolation ward in the Liverpool Workhouse.

*The Outbreak of Anthrax in Cheshire.*

A further outbreak of anthrax has occurred in another farm a short distance from that recently affected at Cuddington, near Northwich. Two more cattle have died, and the farm has been declared an infected area by the veterinary inspector to the Cheshire County Council.

*University College: Election of a Professor of Physics.*

Mr. L. R. Wilberforce, M.A., of Trinity College, Cambridge, has been elected to the Chair of Physics vacated by the appointment of Dr. Oliver Lodge to the principalship of Birmingham University. Mr. Wilberforce succeeded Mr. Glazebrook, the late principal of University College, as demonstrator in physics at the Cavendish Laboratory, Cambridge, and was recently appointed University lecturer in physics. He is now the secretary of the Special Board of Studies for Physics and Chemistry at Cambridge. Mr. Wilberforce has the reputation of being a most successful teacher.

*Donation to the Bootle Borough Hospital.*

The treasurer of the Bootle Borough Hospital has received £1000 from the executors of the late Mr. John Harling, of Manchester and Southport.

*The Royal Alexandra Children's Hospital, Rhyl: Opening Ceremony.*

The fine pile of buildings on the marine drive, Rhyl, known as the Royal Alexandra Children's Convalescent Hospital, was formally opened on Sept. 14th by the Countess of Dundonald. The foundation-stone of the new building was laid by Her Royal Highness the Princess of Wales on the site of the old hospital, then situated on the promenade; but in response to the wishes of the town council it was decided to remove the hospital to a new site further east. The new site has an uninterrupted sea frontage of 265 feet, comprising two acres of ground. When complete the building will contain 160 beds as well as accommodation for 25 nurses, many of whom will be engaged in work outside the hospital. The late Duke of Westminster contributed £10,000 towards the cost of the building. Messrs. Waterhouse and Son of London are the architects.

Sept. 18th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Public Health in Dublin.*

A SPECIAL meeting of the corporation of Dublin was held at the City Hall on Sept. 14th in order to declare bubonic

plague a notifiable disease for a period of 12 months. Mr. Bergin, chairman of the Public Health Committee, proposed a motion to that effect which was passed. A long discussion was held as to the best place in which such cases might be isolated for treatment. At its conclusion it was ascertained that the Convalescent Home in connexion with Cork-street Fever Hospital, Benevan, was really more suitable for many reasons than the accommodation at the Pigeon House Fort, for the 24 beds now available at Benevan could easily, if necessary, be increased to 100, while the alterations now being made at the Pigeon House Fort rendered such an extension there impossible for many months. A resolution to the effect that any patients suffering from bubonic plague in Dublin should at once be sent to Benevan was passed. Referring to the objection raised by some of the residents in that neighbourhood the chairman of the Public Health Committee called attention to the fact that Benevan had been for years used as an isolation hospital for diseases of a much more infectious nature than bubonic plague. Quoting from a recent memorandum of the Royal College of Physicians of Ireland he said: "It is reassuring to know that the plague although 'catching' is not nearly so infectious as scarlatina, typhus, small-pox, or measles. Attendants on the sick in clean, roomy, airy hospital wards run little risk." He added that in view of that statement there need be no apprehension on the part of the people at Benevan.—Dr. John J. Cranny addressed a letter to the *Irish Times* of Sept. 17th calling attention to the frequency of wakes in Dublin and to the fact that the epidemic of plague in Glasgow has been traced to this cause. He suggests as a practical remedy that mortuary chapels where the bodies of the dead could be placed during the interval between death and burial should be attached to the churches in every parish and be under the care of the different ministers of religion.

*The Irish Hospital at Pretoria.*

Lord Iveagh received a telegram on Sept. 17th from Sir William Thomson which was dated Sept. 15th and stated that all were well.

*Royal Army Medical Corps.*

The Secretary of State for War has recently placed nominations to commissions in the Royal Army Medical Corps at the disposal of the Royal College of Surgeons in Ireland and the Medical School of the Catholic University.

*Meat Inspection.*

At a meeting of the Market Committee of the Belfast County Council, held on Sept. 15th, a very valuable report was submitted by Dr. Henry O'Neill, J.P., who is a member of the Belfast Council and was appointed by that body to represent them at the Conference on the Housing of the Working Classes held in connexion with the Sanitary Institute in London in July last and at the Congress of Hygiene and Demography held in Paris in August. He was requested to obtain information concerning the housing of the working classes, the inspection of meat-supply, and the inspection of the milk-supply of cities and towns and its municipal control. Dr. O'Neill, besides attending the Congress of Hygiene and Demography, visited the principal abattoirs and meat markets in Paris, Berlin, London, and Manchester. As might be expected, Dr. O'Neill's report brings out how thoroughly this question of meat inspection is managed in Berlin. All cattle offered for sale in that city must be brought to the public abattoir and the slaughtering of cattle anywhere else within the municipal boundary is absolutely forbidden. All dead meat slaughtered in the country or abroad and intended for human food in Berlin must be brought to the public abattoir and meat market for inspection before being offered for sale as human food, and no butcher in Berlin can offer meat for human food which does not bear the official stamp of the inspecting department of the central market. As a result of this thorough method of inspection as conducted under the control of the municipal corporation of the city of Berlin a person may purchase meat from any butcher's shop in the city and feel certain the meat has been carefully inspected, stamped, and officially declared fit for human food. As showing how effectively this inspection is made in Berlin it is enough to say that the chief inspector of meat is a thoroughly qualified veterinary surgeon who has under his control a large staff of surgeons, assistant surgeons, special inspectors, and stampers. In Paris there are three public abattoirs and no private ones are permitted, and the flesh of the animals, after being killed, is carefully examined by qualified meat inspectors under the superintendence of a veterinary surgeon and if the meat is healthy and good for human consumption each quarter is stamped (a sign to the buyer that it has been examined and passed). Flesh of animals killed outside Paris is called foreign meat, and when brought into the city must be introduced through one of the city toll gates, and the person introducing it has to conform to a series of regulations which are rigidly enforced, one of these being that the meat must be inspected at certain establishments named. If found sound it is also stamped. The great feature of the Berlin method of the inspection of meat is—apart from its thoroughness so characteristic of German organisation—the fact that the city corporation has erected a combined cattle market and public abattoir for the entire city and so there is admirable centralisation. In London the inspection of meat is incomplete, but an improved method is at present under consideration so that all meat brought into London for use by the citizens as human food shall be properly inspected and stamped. Mr. Shirley Murphy has reported to the London County Council fully on the matter and Dr. O'Neill quotes freely from him. In Manchester there is, as in London, not a complete inspection of all meat brought into the city for human food, and the meat which is inspected is not stamped. Dr. O'Neill recommends the Market Committee of Belfast to adopt a system of meat inspection somewhat similar to that of Paris and Berlin, but wisely suggests that before coming to a final decision a small sub-committee of, say, two should visit London, Paris, and Berlin, in order to gain full information not only as regards meat inspection but also as to abattoir construction. This report of Dr. O'Neill, which is full of information of the greatest value and importance, was presented to the Market Committee of the Belfast corporation, and he was cordially thanked for the very great trouble he had taken in the matter. It is also a question for the Public Health Committee of Belfast. It is satisfactory to see that a by-law has been adopted (it will have to be confirmed by the Council) whereby all meat prepared outside and brought into the city must be conveyed to a market to be inspected before being used.

*Royal Visit to Belfast.*

The Lord Mayor of Belfast has received an official intimation to the effect that His Royal Highness the Prince of Wales will visit Belfast early next year, when on behalf of Her Majesty the Queen he will lay the foundation-stone of the Royal Victoria Hospital. His Royal Highness will be accompanied by H.R.H. the Princess of Wales. The exact date has not yet been fixed but the announcement of the coming visit has occasioned the utmost satisfaction. The new hospital is to commemorate the jubilee of the Queen.

*The Bacterial Method of Sewage Purification in Belfast.*

There is no subject in State medicine of greater importance at present than the purification of sewage; and it is a very pressing problem in the case of large cities or towns situated either in the interior of a country or along the coast-line. Various methods of sewage treatment have been tried, such as chemical precipitation, sewage irrigation, land filtration, or a combination of these; but with the remarkable growth of the science of bacteriology a new system of sewage treatment depending on bacterial action has arisen, and I purpose to say a few words in reference to a most interesting experiment in this direction which is at present being made at Belfast, and for my information I am largely indebted to a very scientific paper giving a report *re* Sewage Purification by the city surveyor of that place, Mr. J. C. Bretland, M.Inst.C.E. In an Act referring to the Belfast corporation passed in 1899 a clause was inserted making it obligatory to treat in some way the sewage which flows into the Lough, and after a deputation had visited certain towns in England in which bacterial treatment was being tried it was decided at a joint meeting of the improvement and public health committees to instruct the city surveyor to proceed with the construction of experimental bacteria beds in the reclaimed enclosure at the pumping-station where the sewage of over 360,000 inhabitants enters Belfast Lough. The beds, which were put in operation on August 26th, 1899, are open to the air and are four in number, two upper and two lower, the dimensions of each bed being 90 feet long by 72 feet wide at the top, 75 feet long by 57 feet wide at the bottom, with an average depth of three feet one inch. They are contained by earthen banks and to render them watertight are lined with puddled clay 12 inches thick on

which are laid bricks on the flat or old flags to prevent the filling material sinking into the puddle and to form a bed for the effluent drains. The filling material used in three of the beds (one upper and two lower) is broken bricks and in the remaining bed (an upper one) is coke. The beds are arranged at such levels that the upper one is filled from the storage reservoir when the sewage in the latter stands at a depth of at least eight feet six inches, the sewage being conveyed from the reservoir by 12-inch glazed earthenware pipes and distributed over the beds by means of V-shaped wooden troughs (four to each bed) perforated along the sides with three-quarter-inch holes. The effluent from the beds is drawn off at the bottom through ordinary field drains arranged "herring-bone" fashion and leading into nine-inch glazed earthenware pipes laid with open joints and connected with a main effluent discharge-pipe 12 inches in diameter which from the upper beds leads to the distributing troughs of the lower beds, and from the lower beds to the effluent storage space. A gauging well for measuring the capacity of the beds is also provided, as well as means of screening the sewage so as to receive any paper or other fibrous substances which may have found their way into the reservoir. The quantity of matter so passing, however, is very trifling (Report, pp. 2 and 3). With the beds filled four times per 24 hours, the two pairs of beds are capable of treating, by double contact, a quantity of sewage representing a population of about 8800 persons. The effect of this treatment varies with the nature and strength of the sewage, its temperature, and that of the external air, but, broadly speaking, the effluents produced have been satisfactory. A chemical examination showed that the average weights in five examples of screened sewage and effluents were:—

| | | | |
|---|---|---|---|
| Sewage | ... | ... | 30·64 grains per gallon. |
| First effluent | ... | ... | 17·37 ,, ,, |
| Second effluent | ... | ... | 3·50 ,, ,, |

The difference between the first and third weights represents the number of grains per gallon of solid matter which by the method of treatment under consideration is prevented from entering Belfast Lough. This weight, taking the dry weather flow as 10,000,000 gallons per day, amounts to rather more than 17 tons in 24 hours, but besides this a considerable quantity of putrescible matter in solution (23 grains per gallon in the average of the five cases) is converted in the beds into inoffensive inorganic substances. It is a remarkable fact that the removal of this great quantity of solids from the sewage is not attended with the production of a similar weight of sludge. It simply means that the difference of weights of solid matter in the sewage and effluents represents the solid matter which has been, by bacterial action, converted into inodorous and non-putrefactive liquids and gases. It does not remain behind as sludge in the beds. If the beds are worked too long at a stretch there may be sludge, but after a short period of rest it is digested and converted into inorganic substances in solution. There is no sewage smell in the beds. If the filling materials of the beds are dug up and examined there is the characteristic smell of freshly turned earth or garden mould. Half the impurity in the sewage, as a rule, is removed by the upper bed and nearly half the remainder by the lower. Dr. Lorrain Smith's report upon the sewage examined by him shows that the effect of the passage through the first bacteria bed is to deprive the sewage of about 75 per cent. of the bacteria present, while a slight further reduction results from the passage through the second bed. I will here state the change which the sewage has undergone in these bacteria beds as judged by the examination of the effluent. First, to the naked eye it has changed into a clear fluid, in many cases like ordinary drinking-water. 2. Its odour has in many specimens entirely disappeared. 3. Chemically it has been changed from a foul-smelling organic state to a form of inoffensive inorganic salts in solution. 4. The number of bacteria has been reduced in exhausting the pabulum in the sewage on which bacteria can live. It is a most curious fact that the effluent, after being discharged into the effluent storage space, apparently goes on purifying to a further extent, and this power of self-purification (which has been acquired in its passage through the bacteria beds) seems to be inherent in the effluent itself, as shown by the fact that the purification goes on even in a closely stoppered bottle. 5. Fish (the difficulty of keeping gold fish in glass globes is well known) will live in globes containing the effluent from the lower beds; and on July 9th, 1900, when members of the Improvement Committee visited the bacteria beds, they were shown a number of roach swimming in a pond of sewage effluent which had been their home since they were removed a week previously from water in Lord Deramore's park. It is found that in impure water such fish would not live more than 24 hours. The city surveyor of Belfast recommends a scheme of sewage purification for that place based largely on the methods which I have described. The works which he proposes consist of 24 upper open bacteria beds having a total net area of about 35,500 yards and a total net working capacity of about 2,500,000 gallons, together with the same number of similar "lower beds" having practically the same area and working capacity. This would require an area of 26½ acres, of which 17 acres can be found in the existing inclosure, while it is proposed to reclaim the remaining nine and a half acres from the sloblands acquired by the corporation in view of the future treatment of the sewage. Very full details are given in the surveyor's report of this proposed scheme, the initial cost of which would not be lower than £78,000. The total working expenses (two men would probably suffice to look after the beds) would be a mere fraction of the cost of treatment by chemical precipitation, to say nothing of the large initial cost of building construction required in such case. Mr. Bretland has put forward this scheme in his report in an extremely fair, judicial, and scientific spirit, and with great modesty he concludes by suggesting that "as the question is one of very great importance to the ratepayers at large, it is, I believe, desirable that some eminently skilled and independent expert should give his opinion on it before its adoption." Further scientific evidence is desirable on one most important question, and that is the effect of adopting this method of sewage purification on Belfast Lough. Unfortunately, Belfast has a very low-lying situation at the mouth of a tidal river. All the sewage of this large city (365,000 inhabitants) is discharged into the Lough in which the tide ebbs and flows. As a result those who reside on the margins of the Lough for several miles on each side are subject to the most abominable odours due to the presence of a green plant or seaweed (ulva latissima), called "sleech," which luxuriates in the sewage from Belfast discharged into the mouth of the Lough and deposited on its margins by tidal action. In former times this "sleech" was not known to dwellers on the edges of the Lough. It has become luxuriant in modern times *pari passu* with the rapid growth of the city, and the consequent increased sewage thrown into the Lough through the working of the Belfast main drainage scheme of 1887 and perhaps the present more brackish state of the water. Now we know that the sewage has become so purified in the bacteria beds that fish will live in the effluent, what we want to find out is whether the peculiar plant which I have mentioned will grow in this material which contains inorganic salts—the very substances on which vegetable life luxuriates—and whether in its growth in the effluent it will, as is stated occurs at present on the shores of Belfast Lough, exhale sulphuretted hydrogen. There is a little bay near Marino on Belfast Lough where this "sleech" grows profusely and it gives off so much sulphuretted hydrogen that the silver in the adjacent houses is blackened. This experiment of growing the "sleech" in the effluent should be made by the Belfast Public Health Committee. If it gives off sulphuretted hydrogen when grown in the effluent then the "bacterial purification" of the sewage will not do away with the stench on the shores of Belfast Lough. In an appendix to Mr. Bretland's report, Dr. Lorrain Smith, in giving the details of the bacteriological examination which he has made "on the Effect of the Bacteria Beds on the Sewage," says with true scientific caution: "The results given can only be regarded as preliminary." The Public Health Committee of Belfast might well authorise Dr. Lorrain Smith to make further investigation. Since Mr. Bretland's report was written a most important discussion on this question has taken place at the Ipswich meeting of the British Medical Association in the Section of State Medicine, August 1st, 1900. In a very able paper introducing the question Dr. A. C. Houston of London said, basing his results on experiments made for the London County Council in reference to the bacterial treatment of sewage at Crossness, that until positive evidence to the contrary were forthcoming it would be wise to regard the effluents from bacterial beds as no more safe in their possible relation to disease than

crude sewage.[1] Dr. Houston urged that a lesson to be learnt from his experiments is that the element of time or delay is an all-important factor in the problem of sewage purification by bacteria beds. He thinks that it is doubtful if any bacterial process in practical operation at present "treats" or "detains" sufficiently long the sewage to allow of the complete destruction of all pathogenic germs by bacterial agencies. Now it may turn out, on close investigation, that the construction of the bacteria beds at Belfast is different from that of those at Crossness and that there is a difference in the two places as to the length of time during which the sewage is "detained." These are points of the utmost importance and it is advisable that before spending a large sum of money on a great scheme like this—which is, it must be admitted, an experimental one—further and prolonged scientific experiments should be made of a chemical, botanical, and bacteriological nature; a course recommended, indeed, by Mr. Bretland in his extremely able and most interesting report.

Sept. 18th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*The Physiology of the Cervical Sympathetic in Man.*

AT a recent meeting of the Academy of Medicine M. François-Franck read a paper upon some researches of M. Jonnesco and M. Floresco of Bucharest dealing with this subject. By applying to human beings the exact technique which they had employed in their experiments upon animals the Bucharest surgeons have been able to establish for the first time the identity of the immediate effects of section and excitation of the cervical sympathetic in man with those obtained by the same operations in animals. Particularly is this the case with regard to the thyroid circulation and the ocular pressure. M. Jonnesco and M. Floresco maintain besides that their experiments enable them to say that the cervical sympathetic affects the cerebral circulation by acting first as a vaso-constrictor and ofterwards as a vaso-dilator. Resection of the nerve does not cause any notable trophic changes in the region supplied by it. Before accepting these conclusions as definite M. François-Franck considers that further experimentation is necessary and that the history of patients in whom partial or complete resection of the nerve has been practised must be followed up for many months.

*Hereditary Syphilis in the Second Generation.*

M. Fournier laid before the Academy of Medicine two notes of Dr. Lemonnier. The first referred to a case in which diabetes supervened in a little girl who was suffering from hereditary syphilis but who had been cured of this by specific treatment. The second case was an obvious instance of hereditary syphilis being transmitted to the second generation. Two brothers, aged 27 years and 24 years respectively, presented undoubted signs of syphilis, the one showing its effects in the nose and the other in the leg. Neither had been exposed to specific contagion. The father showed signs of syphilis without any history of infection. He was a hereditary syphilitic. The mother was quite free from the disease.

*The Beating and Carding of Mattresses.*

The Committee of Public Health for the Seine has just recorded its approval of the recommendations contained in a report which has been drawn up by Dr. Josias as regards the beating and carding of mattresses in public places or private roads—if, that is to say, the mattresses have not been previously disinfected. The report states that very often these mattresses come direct from tenements occupied by sick persons and that the result of the operations to which they are submitted is the dispersion of contagious germs. The prefect of police, acting on the resolution of the committee, has urged the commissaries of police to carry out strictly the police order of July, 1862, which forbids the beating of wool or of hair in the public streets. Where there is no court or passage in which this work can be carried out the police commissaries are authorised to prevent it altogether except in such portion of the street as they shall appoint. M. Lepine has also given orders that the police commissaries shall see that any mattress which is to be carded shall be previously disinfected. The commissaries are also to warn carders that all wool with which they work must have been previously stoved.

*The Removal of the Cannula after Tracheotomy.*

M. Grancher read a paper on behalf of M. Moure of Bordeaux before the Academy of Medicine on this subject. M. Moure has made a study of the various causes which prevent removal of the cannula after tracheotomy. Despite the serum treatment the statistics of Bordeaux for tracheotomy are not good. It is often difficult to remove the cannula as the larynx will not remain permeable. Various reasons have been assigned for this, such as spasm of the glottis, paralysis of the dilators of the larynx, and the presence of fleshy granulations. In some children air will not pass in by the normal way before puberty. M. Moure believes that in such cases the tracheotomy has been done too high. Perichondritis may be a reason for the difficulty of removing the cannula. Whenever the cannula has been in for a long time or the trachea has been divided too high up, there will be difficulty in removing the cannula. The best place for incision is the second or third ring of the trachea. If the incision is longer than this the cannula must be left in for as short a time as possible.

Sept. 18th.

[1] THE LANCET, August 11th, 1900, p. 444.

## CANADA.

(FROM OUR OWN CORRESPONDENT.)

*Lodge Practice in British Columbia.*

ABOUT Dec. 1st last an agreement was entered into amongst all the medical men of the thriving city of Victoria, British Columbia, for the cessation of lodge practice in that city. This agreement was signed by all the practitioners without exception, an act which brought down upon their devoted head the anathemas of the lodge fraternity which comprises upwards of 2000 of the inhabitants. No sooner was this accomplished than the authorities of the lodges advertised for medical men to come to Victoria to do specially the combined lodge work of the city and incidentally to receive the support of the adherents of the societies. It was a stunning blow for them and very gratifying to the practitioners of Victoria that not a single medical man throughout the Dominion of Canada made any response whatever to this appeal. This fact coming to light two of those who signed the agreement immediately contracted with the lodges to do the combined work of all the societies, numbering something like 20, the emoluments running well up to $4000. Their action in thus deserting their *confrères* brought upon themselves prompt dismissal from the Victoria Medical Society. In addition to this the other practitioners of Victoria have refused to consult with either of them, stipulating that if either of the two offenders be attending a case that he be dismissed before they have anything to do with it. It is stated that the members of the lodges are very much exercised over the state of affairs and some hard things are being said against the medical men. Every night the lodge meetings are crowded and excitement is said to run high. So far the practitioners appear to have the best of the fight and it is thought that the two delinquents are sickening of their bargain with the lodges. The daily press has recently been the scene of the most active part of the campaign and each party has placed its views on the subject before the people. It is to be sincerely hoped that the Victoria medical men will stand firmly and steadfastly by their rights and come out in the end more than conquerors.

*Maritime Medical Association.*

The tenth annual session of this association was held in St. John, New Brunswick, on July 17th and 18th, under the presidency of Dr. James Christie. Mayor Daniel of St. John, himself a past president, welcomed the visitors, making feeling references to the death of the son of one of their respected members, Lieutenant Borden, a third-year student of McGill University, who had fallen on the far South African battlefield. A telegram of condolence was despatched to the Hon. Dr. Borden at Ottawa, conveying the sympathy of the members of the association. Dr. William Bayard, the "father" of the medical profession in St. John, upon whom the honorary degree of LL.D. was recently conferred by the University of

New Brunswick, delivered an admirable address upon the Prevention of the Spread of Tuberculosis. A paper on Gall-Bladder Surgery was ably presented by Dr. George Armstrong of Montreal, a subject which was further contributed to by Dr. Atherton of Fredericton. A meeting of the McGill graduates in the maritime provinces was also held during the progress of the association meeting, and it was decided to form a Maritime Graduates' Society of McGill University, with Dr. W. H. Hattie of Halifax as first president. The address in gynæcology was delivered by Dr. P. Conroy of Charlottetown, Prince Edward Island, who took for his subject, Retro-displacements. This association, which meets triennially in St. John, Halifax, and Charlottetown, will meet next year in Halifax. Dr. W. S. Muir of Truro, Nova Scotia, was elected President and Dr. G. M. Campbell (Halifax), Secretary.

*The Canadian Red Cross Commissioner to South Africa.*

Dr. George Stirling Ryerson has returned to Canada from South Africa, where he went as Canadian Red Cross Commissioner. While all England may perhaps be ringing with Mr. Burdett-Coutts's charges against the Army Medical Service in South Africa Dr. Ryerson, similarly to many of our gallant soldiers invalided home, has nothing but praise for the conduct and management of the medical part of the war. Canadians returning from their experience in the Transvaal and fresh from English hospitality express their gratitude for the manner in which they have been treated by the English soldiers and the English people. The small and scattered bands which have been lately arriving have been everywhere met by enthusiastic and admiring crowds and no one has heard a complaint of the hospital arrangements in any particular. Shortly after Dr. Ryerson's arrival in South Africa he was appointed British Commissioner at Lord Roberts's headquarters, where he had unusual facilities for observation. One of his interesting statements is to the effect that Lady Roberts's hospital for the sick and wounded soldiers at Bloemfontein is almost entirely fitted out with supplies furnished by the people of Westmount which is a suburb of the city of Montreal. Dr. Ryerson has given his opinion as to what foundation there was for Mr. Burdett-Coutts's charges, and he declares them to be absolutely incorrect. Mr. Burdett-Coutts had met Dr. Ryerson in South Africa and while there had never made any complaint to the Canadian Commissioner, although he knew that Dr. Ryerson had almost unlimited stores and money at his disposal. Dr. Ryerson states that the hospital arrangements, when one considers the difficulties that had to be surmounted, could not have been more admirable. Canada, as a portion of the British Empire, will be proud of the usage which her volunteers—for they are only volunteers—have received at the hands of the regular army of Great Britain, and of the hospitality extended at home by the English people.

*Executive Health Officers of Ontario.*

The annual meeting of this association was held at Kingston, Ontario, on August 14th and 15th, with Dr. T. V. Hutchinson (London) as presiding officer. Mr. A. McGill, B.A., analyst to the Inland Revenue Department, Ottawa, read a valuable and timely paper on the Effects of Food Preservatives on Public Health. Dr. Charles Sheard, medical health officer of Toronto, instanced several cases which had come under his notice where young children had been poisoned by re-freezing ice-cream. Dr. Cassidy (Toronto) read a very interesting paper on Tuberculosis and Means for its Cure, dealing particularly with the cheerful aspect of the question, the reported cases of cure. The address of the president was an able review of the Improvements of the Century in Sanitary Science. He condemned the use of bread tickets and paper money as carriers of infection. Dr. P. H. Bryce, secretary of the Provincial Board of Health, contributed a paper on the Education Problem as Viewed from a Public Health Standpoint. He thought that pupils were very often kept in rooms where there was not sufficient air space. He also advocated military exercises for the school-children. Dr. W. T. Connell, pathologist to Queen's University, Kingston, read a paper on Vitality of Typhoid and Diphtheria Bacilli in Milk; and another paper which called forth much and keen discussion was that of Toronto's bacteriologist, Professor Shuttleworth, on the Use of Antitoxin in Toronto Contagious Diseases Hospital. The association unanimously adopted a resolution approving of the legislation in respect to sanatoria for consumptives passed at the last session of the Ontario Parliament, and also called upon the members to coöperate with local boards of health in seeing that these sanatoria were established. Brantford was selected as the next place of meeting. Dr. W. T. Connell was elected president and Dr. P. H. Bryce secretary.

Sept. 1st.

# Obituary.

THOMAS MOORE, F.R.C.S. ENG., L.R.C.P. LOND.

THE medical profession has lost a good surgeon and his colleagues a faithful friend by the death of Mr. Thomas Moore, of Lee-terrace, Blackheath, who passed away on Sept. 6th after a few hours' illness while on a visit to Kennington, near Ashford. The deceased gentleman, who was in his sixty-second year, was the second son of the late Mr. Edward Moore of Halesowen, Worcestershire, received his medical education at St. Bartholomew's Hospital, was admitted a Licentiate of the Royal College of Physicians of London in 1865, and obtained the Fellowship of the Royal College of Surgeons of England in 1867. At the time of his death Mr. Moore held the posts of senior surgeon to the Miller Hospital at Greenwich, medical officer of health of Eltham, consulting surgeon to the Brighton Children's Hospital and the Petersfield Cottage Hospital, and treasurer of the Roentgen Ray Society. For the last 20 years Mr. Moore had practised at Blackheath, previously to which he had been at Petersfield, where he founded the Cottage Hospital. Of Mr. Moore it may truly be said that his heart was wholly in his profession and at a time when many men think of "slacking off" and taking a well-earned rest he worked hard at bacteriology and Roentgen rays and made himself proficient in these latter-day sciences. He established a Roentgen ray department at the Miller Hospital which he equipped and superintended till the day of his death. As honorary secretary of the Blackheath Amateur Operatic Society he had been instrumental in raising over £1000 for the Miller Hospital. Mr. Moore was beloved by his patients, rich and poor; he never failed to respond to any call made upon him and he declined to leave his patient until he felt he had done all he could. He was an ex-president of the West Kent Medico-Chirurgical Society, to which he contributed a large number of useful papers. He was also a member of the West Kent Microscopical and Natural History Society. Mr. Moore contributed several papers to THE LANCET, among which may be mentioned a case of poisoning by strychnine treated successfully with tincture of opium and one of lithotomy (published in 1872), one of herniotomy (1874) and one of recovery from rabies (1880).

# Medical News.

UNIVERSITY OF DURHAM.—At the Second Examination for the degree of Bachelor in Medicine, held at the College of Medicine, Newcastle-upon-Tyne, in September, the following candidates satisfied the examiners:—

*Anatomy, Physiology, and Materia Medica.—First-class Honours:* William Henry Peacock, College of Medicine, Newcastle-upon-Tyne. *Second-class Honours:* Auburn Lawrence Wilkinson, Arthur Gibson Dunn, and Daniel Richard Guns, College of Medicine, Newcastle-upon-Tyne; and Margaret Douglas French, London School of Medicine for Women. *Pass List:* Ernest George Annis, M.R.C.S., L.R.C.P., D.P.H., Guy's Hospital; Edmund Howard Barrett, M.R.C.S., L.R.C.P., St. Mary's Hospital; Ambrose Harold Bateman, St. Bartholomew's Hospital; Walter Donald Carruthers, Birmingham University; John Wilfrid Caton, Guy Rowland East, and Arthur Henry Fullerton, College of Medicine, Newcastle-upon-Tyne; Philip Gell Garrett, M.R.C.S., L.R.C.P., D.P.H., Middlesex Hospital; Francis Jollie Gowans, Marshall Haver, and William George Thomas Hepplewhite, College of Medicine, Newcastle-upon-Tyne; William Hughes, Edinburgh School of Medicine; Wharram Henry Lamplough, Birmingham University; Charles Robert Lease, College of Medicine, Newcastle-upon-Tyne; Ernest James Miller, Cooke's School of Anatomy and University College, London; George Edward Victor Morris, Birmingham University; Christie Mûthûswamy-Anthony, Guy's Hospital; Thomasina Georgina Prosser, Frederick William Ritson, and Joseph Collingwood Stewart, College of Medicine, Newcastle-upon-Tyne; Alexander Minter Watts, M.R.C.S., L.R.C.P., University College, London; and John Robert Wylie, College of Medicine, Newcastle-upon-Tyne.

NEW BATHS AT CHELTENHAM.—The new baths erected in Cheltenham by the corporation were formally opened by the Mayoress on Sept. 10th. The cost of the building, which is luxuriously fitted and furnished, is nearly £10,000.

DIPHTHERIA AT PILL.—At the meeting of the Long Ashton (Somerset) Rural District Council, held on Sept. 11th, Mr. Fuller, the medical officer of health, stated that there were at present about 100 cases of diphtheria in the village of Pill.

BRISTOL MEDICAL CHARITIES.—A "collecting dog" at Bristol, known as "Punch No. 2," has during the past six years collected over £100 for the local medical charities. His father, "Punch No. 1," was also a hospital collector, and between them the two dogs have collected 48,579 coins.

POISONING BY FUNGI.—An inquest was held at Devonport on Sept. 13th upon the bodies of two lads, aged 11 and nine years respectively. On Sept. 8th they had partaken of apples, acorns, blackberries, and what they had considered to be mushrooms, and were afterwards taken ill with symptoms of gastric irritation. The younger one died on Sept. 11th and the elder one on the following day. The jury found that the deaths were due to eating noxious fungi.

NEW WATERWORKS AT LILLINGTON.—The ceremony of formally opening the Leamington corporation's recently constructed waterworks at Lillington took place on Sept. 5th in the presence of a large assembly of interested persons. A well has been sunk to the depth of 170 feet and an additional yield of 450 000 gallons per day has been obtained which it is estimated will provide an adequate supply in perpetuity.

OPEN-AIR TREATMENT OF PHTHISIS.—It was reported at the last meeting of the managers of the Poplar and Stepney Sick Asylum district that their proposal to hold a conference of Poor-law administrators for providing accommodation for the open-air treatment of phthisis had been successful, and it was estimated that representatives of about 60 unions and parishes would attend the conference to be held in the ensuing month at the St. Martin's Town-hall, Charing-cross-road, London, W.C.

ROYAL ALBERT HOSPITAL, DEVONPORT.—The managing committee of this hospital has just issued an urgent appeal for subscriptions towards the new buildings which were commenced last May. It is proposed to erect a "nurses' home" and an isolation ward and to make various internal improvements. It is not intended to increase the number of in-patients as the annual income of the institution is at present insufficient to meet the ordinary expenditure. The committee require £5500 and at present only £1519 of this sum have been received.

MEDICAL OFFICERS OF HEALTH AND LOCAL AUTHORITIES.—At the meeting of the Penzance Town Council, held on Sept. 12th, it was decided that the medical officer of health (Mr. R. D. Boase) should be re-appointed for one year only, instead of for three as on former occasions. The member who proposed this new arrangement said "that medical officers of health throughout the country were very much disposed to set aside the authority appointing them and to look to the Local Government Board and county councils as the authority to whom they were responsible." This, he remarked, "was very wrong," and he further added that "if they appointed any officer for a permanent tenure they were appointing not a servant but a master, and this was strongly to be objected to."

BRISTOL GENERAL HOSPITAL.—The half-yearly general meeting of the supporters of this institution was held on Sept. 10th under the presidency of Mr. J. S. Fry. The financial report showed that there was a considerable decrease in donations and also in the collections in places of worship. The legacies had also shown a diminution. The expenditure was less than for the corresponding period of last year. 1222 in-patients had been admitted during the first half of 1900, as compared with 1140 for the corresponding period of 1899. The average daily number of in-patients was 162, as against 170 in the previous year. The chairman stated that large alterations and improvements were contemplated in the out-patient department and added that the committee had also in view the introduction of electric light in the hospital.

DIPHTHERIA IN LEICESTER.—The report of the medical officer of health of the borough of Leicester for the week ending Sept. 15th shows that of 82 fresh cases of infectious disease reported during the week diphtheria claimed 58 and nine deaths.

THE ONTARIO MEDICAL LIBRARY ASSOCIATION.—The thirteenth annual meeting of this association was held in the Library Rooms, Toronto, on June 28th, with Dr. J. F. W. Ross, the president, in the chair. The association approached the legislature of the province recently asking that a grant should be given annually similar to that already extended to the Law Association, and it is gratifying to learn from the president that in the near future this is likely to become a fixture. Books from this library are sent to medical men throughout the province of Ontario on their paying express charges both ways and returning them within two weeks, a privilege secured to the profession at large through the Ontario Medical Council, in whose building in Toronto the library is located. The curator, Dr. N. A. Powell, reported that 161 new volumes and three cases still unopened had been added to the library during the past year. Dr. Powell is a member of the American Association of Librarians and is enabled to secure duplicates from other libraries in exchange. The association has now something like 400 members, practitioners from the city and throughout the province, who contribute an annual fee of $2 00. At a meeting of the board of directors held on July 4th Dr. Ross was re-elected president, Dr. H. J. Hamilton secretary, and Dr. N. A. Powell curator.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

BOASE, R. D., L.R.C.P. Lond., M.R.C.S., has been re-appointed Medical Officer of Health for Penzance.

BRODRICK, C. C., L.R.C.P., L.R.C.S., Edin., has been re-appointed Medical Officer of Health for Tavistock.

CLARKE, W. J., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Newbury Union, vice M. H. S. Palmer, resigned.

CLEMENGER, A. N., L.S.A., has been appointed Medical Officer and Public Vaccinator for the Slaidburn Sanitary District of the Clitheroe Union.

DAVIES, F. W. S., M.R.C.S., L.R.C.P. Lond., has been appointed Honorary Anæsthetist to the Cardiff Infirmary.

DODD, NOEL, L.R.C.P. & S. Edin., has been appointed Junior Assistant House Surgeon to the Stockport Infirmary.

GODSON, J. H., M.B., B.C. Camb., D.P.H., has been re-appointed Medical Officer of Health by the Cheadle and Gatley Urban District Council.

GRUBB, R. T., L.R.C.P. Edin., M.R.C.S., has been re-appointed District Medical Officer, Epping Union.

HALLAM, H., L.R.C.P. Lond., M.R.C.S., has been re-appointed Assistant Medical Officer for Eccleshall Workhouse.

HODGSON, J. F., M.B., Ch.B. Vict., has been appointed Assistant House Surgeon to the Oldham Infirmary.

HOSKINS, W., M.B., C.M. Aberd., has been re-appointed District Medical Officer, Epping Union.

HOUSLEY, J., M.D. St. And., M.R.C.S., D.P.H. Glasg., has been re-appointed Medical Officer of Health for the Rural Sanitary District of Retford.

HOWELLS, J., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Abercrave Collieries, Brecon, vice T. Richards.

PEARCE, GEO. HARPER, L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been re-appointed Medical Officer of Health by the Darton Urban District Council.

POTTS, G., L.R.C.P. & S. Edin., has been appointed Second Assistant Medical Officer to the County Asylum, Dorchester, vice C. E. P. Forsythe.

PRATT, ELIDON, M.D. Lond., L.R.C.P., M.R.C.S., has been appointed Honorary Anæsthetist to the Cardiff Infirmary.

SOUTHAM, F. A., M.B. Oxon., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Manchester Cancer Pavilion and Home.

STEINHAEUSER, J. R., M.B., B.S. Lond., L.R.C.P., M.R.C.S., has been re-appointed Medical Officer of Health by the Lewes Town Council.

THORMAN, W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer and Public Vaccinator for the Kirkburton Sanitary District, Huddersfield Union, vice W. P. T. Daniel, resigned.

TURNER, G. G., M.B., B.S., M.R.C.S., L.R.C.P., has been appointed Surgical Registrar to the Royal Infirmary, Newcastle-on-Tyne, vice J. D. Wardale, resigned.

WEEKS, C. C., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Metropolitan Borough of Lewisham.

WOOD, C. G. RUSS, M.R.C.S., L.R.C.P. Lond., has been appointed Surgeon to the Eye, Ear, and Throat Hospital for Shropshire and Wales, Shrewsbury, vice W. Charnley, deceased.

WRIGHT, G. A., M.B. Oxon., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Manchester Cancer Pavilion and Home.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BIRKENHEAD BOROUGH HOSPITAL.—Honorary Surgeon.

BOURNEMOUTH NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident Medical Officer. Salary commencing at £10 per working month, board, residence, and washing (no alcohol) provided.

BRADFORD ROYAL INFIRMARY. — Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

CITY HOSPITAL FOR INFECTIOUS DISEASES, Newcastle-upon-Tyne.—Resident Medical Assistant for one year. Salary £60, with board, lodging, and washing.

COUNTY ASYLUM, Chester.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, rising £10 yearly to £160, with board (no liquors), lodging, and washing.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Commencing salary £125 per annum with the usual allowances.

COUNTY ASYLUM, Mickleover, Derby. — Assistant Medical Officer. Salary commencing at £100 per annum.

COUNTY ASYLUM, Rainhill, near Liverpool.—Assistant Medical Officer, unmarried. Salary commences at £125, with prospect of increase to £250, with furnished apartments, board, attendance, and washing.

DAVID LEWIS NORTHERN HOSPITAL, Liverpool.—Assistant House Surgeon. Salary £70 per annum, with residence and maintenance in the house.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DOWN DISTRICT ASYLUM, Downpatrick.—Assistant Medical Officer, unmarried. Salary £100 per annum, with prospects of increase, and furnished apartments, board, washing, and attendance.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY. — Assistant House Surgeon. Board and washing provided.

DUNDEE ROYAL LUNATIC ASYLUM.—Medical Assistant. Salary £100, with board and lodging.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

FRENCH HOSPITAL AND DISPENSARY, Shaftesbury-avenue, London.—Resident Medical Officer, speaking French, unmarried. Salary £80 a year, with full board.

GUEST HOSPITAL, Dudley.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, residence, board, and washing.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £30 for that period.

KENT AND CANTERBURY HOSPITAL. — House Surgeon, unmarried. Salary £100 a year, with board and lodging.

LEEDS UNION.—Assistant Medical Officer for the Workhouse Schools and Infirmary in Beckett-street, Leeds, unmarried. Salary £130 per annum, rising £10 annually to £150, with board, washing, apartments, and attendance (subject to statutory deductions). Apply to the Clerk, Poor-law Offices, East Parade, Leeds.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence and maintenance.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—House Surgeon. Salary £85 per annum, with board and lodging. Also Assistant House Surgeon for six months. Salary £25 for that period, with board and lodging.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

MANCHESTER HOSPITAL FOR CONSUMPTON AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-patient Department at Bowden, Cheshire. Salary £60 per annum, with board, apartments, and washing.

NEWPORT AND MONMOUTHSHIRE HOSPITAL, Newport, Mon.—House Surgeon. Salary £100 per annum, with board and residence (no stimulants).

NORTH ORMESBY COTTAGE HOSPITAL.—House Surgeon, unmarried, non-resident. Salary £200 per annum. Applications to the Secretary, Royal Exchange, Middlesborough.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Physician. Salary £100 per annum, increasing £10 per annum conditionally, with furnished apartments, board, and washing.

NOTTINGHAM GENERAL DISPENSARY.—Resident Surgeon for the Hyson Green Branch, unmarried. Salary £200 per annum. Special arrangement as to board, &c.

PADDINGTON.—Assistant to the Medical Superintendent of the Infirmary and Assistant Medical Officer of the Workhouse, unmarried. Salary £100 per annum, rising £10 annually to £120, with board, lodging, and washing. Apply to the Clerk to the Guardians, 289, Harrow-road, W.

PARISH COUNCIL OF KINCARDINE, Ross-shire.—Resident Medical Officer. Salaries offered £52 10s. per annum as Medical Officer, £5 per annum as Vaccinator, with fees in lunacy in addition. Apply to Mr. D. Ross, Inspector of Poor, Ardgay.

PARISH COUNCIL OF TINGWALL, Whiteness and Weisdale.—Medical Officer. Salary £40 per annum, which includes the cost of medicine for paupers belonging to the parish. Apply to the Inspector of Poor, Scalloway, Shetland.

PARISH OF ST. LEONARD, Shoreditch.—Second Assistant Medical Officer at the Infirmary, Hoxton-street, N., for six months. Salary £80 per annum, with rations, washing, and furnished apartments in the Infirmary. Apply to the Clerk to the Guardians, 213, Kingsland-road, N.E.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, rising £10 annually to £200 per annum, with furnished apartments in the asylum and board and washing.

ROYAL ALBERT HOSPITAL, Devonport.—Assistant House Surgeon, for six months. Salary at the rate of £40 per annum, with board, lodging, and washing.

ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road, Brighton. House Surgeon for twelve months. Salary £80, with board, lodging, and washing. No stimulants.

ROYAL VICTORIA HOSPITAL, Bournemouth.—House Surgeon. Salary £100 per annum, with board.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN, Marylebone-road, London.—Physician to the Out-patient Department.

SCHOOL BOARD FOR LONDON.—Qualified Medical Practitioners to give Lectures in First Aid and Home Nursing to the pupils of the Evening Continuation Schools.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), Greenwich, S.E.—House Surgeon. Salary £50 per annum, with board, residence, and washing.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon for six months. Honorarium at the rate of £50 per annum, residence, board, and washing provided.

ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—Honorary Gynæcologist.

STOURBRIDGE DISPENSARY.—House Surgeon and Secretary. Salary £120 a year, rising £5 annually to £130, with furnished rooms, coal and gas, and an allowance of £25 for travelling expenses.

THE CHIEF INSPECTOR OF FACTORIES gives notice of vacancies as Certifying Surgeons under the Factory Acts at Ruthin, in the County of Denbigh; at Hereford, in the County of Hereford; at Hayle, in the County of Cornwall; at Newcastle, in the County of Stafford; at Colne and Nelson, in the County of Lancaster; at Tow Law, in the County of Durham; at Bervie, in the County of Kincardine; and at Beeston, in the County of Nottingham.

WESTON-SUPER-MARE HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence in the hospital.

WOOLWICH UNION.—Assistant Medical Officer, for the Infirmary at Plumstead, unmarried. Salary £120 per annum, rising £10 yearly to £150, with apartments, rations, and washing. Appointment subject to statutory deductions. Apply to the Clerk to the Board, Union Offices, Woolwich.

# Births, Marriages, and Deaths.

## BIRTHS.

ATKINSON.—On Sept. 11th, at Puddington, Devon, the wife of J. M. Atkinson, M.B. Lond., of Hong-Kong, of a son.

CHURCHOUSE.—On Sept. 12th, at Long Buckby, the wife of W. J. Franklin Churchouse, L.R.C.P., of a son.

LISTER.—On Sept. 16th, at Rose Hill, Totteridge, the wife of W. T. Lister, F.R.C.S., of a son.

MAPLETON.—On Sept. 10th, at Goudhurst, Kent, the wife of G. H. Mapleton, M.B., of a daughter.

MIDDLEMASS.—On Sept. 18th, at Ryhope, Sunderland, the wife of Jas. Middlemass, M.D., F.R.C.P.E., of a son.

NASH.—On Sept. 16th, at Accrington, Mary Monica, the wife of Elwyn H. T. Nash, M.R.C.S., L.R.C.P., of a daughter.

PALEY.—On Sept. 17th, at Brunswick-place, Hove, the wife of F. J. Paley, M.D. Lond., of a son.

## MARRIAGES.

EWAN—FERRIER.—On Sept. 12th, at St. Mary's, Castletown, Isle of Man, W. J. S. Ewan, M.B., C.M., son of the Rev. W. Ewan, of F.C. Manse, Fyvie, N.B., to Mary, daughter of the late Canon Ferrier.

GEDDES—KOEK.—On the 13th inst., at St. Edmund's, Sedgefield, J. W. Geddes, M.B., C.M., of the Durham County Asylum, to Ethel Beatrice Marie, youngest daughter of the late E. Koek, Esq., of Singapore.

GODSON—MAYALL.—On Sept. 12th, at St. Thomas's Church, Werneth, Oldham, Alfred Henry Godson, B.A., M.B., B.C. Cantab., F.R.C.S. Eng., eldest son of Alfred Godson, of Cheadle House, Cheadle, Cheshire, to Mary Elizabeth, youngest daughter of the late Samuel Mayall, J.P., of Springside, Lees.

THEOBALDS—LEMPRIERE.—At Saint Mary's Church, Wargrave, on the 13th inst., by the Rev. H. M. Ellis, rector of Exbury (brother-in-law of the bride), assisted by the Rev. A. Austen Leigh, vicar of Wargrave, and the Rev. F. B. Hope, Arthur J. A. Theobalds, M.B., C.M., Gaunt Cottage, Wargrave, to Effie, second daugther of the late Captain Lempriere, South Hampshire Regiment, and of Mrs. Herbert Lempriere, The Croft, Wargrave.

## DEATHS.

COPELAND.—On Sept. 16th, at Staindrop, Co. Durham, William Copeland, M.B., C.M. Edin., son of the late William Copeland, M.R.C.S., aged 54 years.

COURTEEN.—On Sept. 17th, at 99, Park End-road, Gloucester, Raymond Courteen, M.B., M.R.C.S., L.R.C.P.

HEWAN.—On Sept. 17th, at 23, George-square, Edinburgh, Ethel Jane, wife of John Hewan, M.R.C.S., L.R.C.P., of Assam, India.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## "A SUBSTITUTE FOR BRANDY."

WE have received a long letter from the friend who gave Mrs. Oliver the prescription for the substitute for brandy. The writer does not wish to disclose her name unless her letter is printed in its entirety, and this we are unable to do, but we subjoin the principal portions thereof.

"Strongest tincture of ginger, sal volatile, and chloric ether—granting that these three drugs are as alcoholised as brandy I still claim that the mixture is a desirable substitute for brandy. For it must be distinctly understood that temperance reformers have no quarrel with the drug alcohol provided it be kept in its proper place side by side with the other poisonous drugs that find their legitimate place in the doctor's dispensary. If alcohol were kept there and simply used as other drugs are used in combating disease there would be no need for temperance societies.

* * * *

And I would urge first our right to protest against being sent to the publican and the wine merchant for our medicine. To say the least, it is a slipshod way of performing an important duty. And its results are often direful. Patients ought not to be subjected to such risks at the hands of their medical advisers. If they need alcohol, why should they not get it in its pure form as rectified spirits of wine made up as a mixture from the chemist; or if there should be any other constituent in these public-house drinks that is considered desirable for the patient, surely the doctor's professional knowledge is sufficient to enable him to prescribe it in some other form. To tell a poor mother to give her ailing daughter gin, or to tell the rich mother to give her child port wine two or three times a day, seems to my lay mind a most unfair way of treating cases, and a most irresponsible and dangerous way. For how does the poor woman know that she is giving her girl, not only alcohol, which comes to have a deadly fascination for her ere long perhaps, but also, it may be, fusel oil, turpentine, or some other horror added? And how does the wealthy mother know what the 'port wine' would reveal, if analysed, or whether it contained even a particle of grape-juice?

"We contend that the 'substitute for brandy' given in the article quoted from is a thousand times better and safer than brandy. It is a medicine pure and simple, kept as such in the medicine-cupboard to resort to *only* in emergencies, whilst 'nips' of brandy may be resorted to on many a plausible occasion when there is no crying need for it, but only a craving for its flavour and transient stimulating effect. And unlimited supplies of brandy can be got at the nearest public-house or licensed grocers, alas!

"I shall continue to give broadcast this 'substitute for brandy' with as much confidence as I gave it to Mrs. Oliver, having tested its efficacy for many years without seeing any evil result of its use."

We give the writer of the above every credit for being perfectly honest in her desire to promote the cause of temperance, but she altogether mistakes the reason why brandy and port wine are ordered. It is not on account of the alcohol which they contain so much as on account of the ethers. Therefore, giving rectified spirit would not in the very least be the same thing as giving old brandy. But we need not pursue this line of argument. Our contention is still the same. The temperance reformer objects to brandy because it is alcoholic and because it can be obtained at any public-house. As a substitute for this she recommends a cordial which has some 80 per cent. of alcohol as against 50 per cent. in brandy, which any chemist will "make up for 6d." and which she will continue to give "broadcast." This, to our minds, is not the line on which temperance reform should go.

## UNQUALIFIED ASSISTANTS.

*To the Editors of* THE LANCET.

SIRS,—In view of the recent regulations regarding unqualified practice and the covering of such by qualified men, I am desirous of knowing if the undermentioned cases are breaches of the regulations of the General Medical Council. X is a qualified man who has during the past two years had a succession of dispensers or unqualified assistants. On August 21st, 1898, the then "assistant" attended a case of midwifery and all the after-attendance was done by him. X, the principal, passed this man off as thoroughly qualified and when he left his service assigned as a reason that Dr. So-and-So was going in for his "Fellowship." During the summer X was asked to visit a case which turned out to be one of a dangerous and infectious nature. On three dates the dispenser or unqualified assistant made all the visits. And Y, a qualified man, made a supplementary visit on the last occasion on behalf of X. X was also sent for to see a patient of another practitioner, but the visit was made by the then "assistant," who was in sole charge of the practice, X being away from home. The man who attended the two latter cases was engaged as a dispenser at a weekly wage of 15*s*. He made visits with the help of X's trap, attended midwifery cases, and consulted in the surgery, as can be easily proved. His predecessors (unqualified assistants) visited patients for Y and Z—qualified men—during their absence from home or when they were ill.

I am, Sirs, yours faithfully,

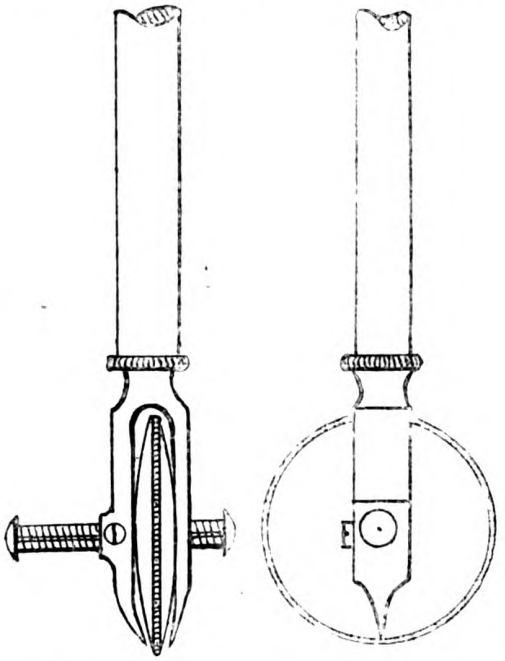
August 20th, 1900. JUSTITIA.

*** The facts as stated constitute "covering," and if they are accurate and were proved against X before the General Medical Council would be very likely to lead to his removal from the Medical Register.—ED. L.

## MEASUREMENT OF TUMOURS.

*To the Editors of* THE LANCET.

SIRS,—The instrument called an opisometer used for measuring distances on maps might be applied by medical men for the measurement of swellings and tumours of various sorts with a view to recording their varying dimensions from time to time. Two small lines might



be marked on the skin with nitrate of silver and the opisometer rolled from one to the other and then rolled back upon an accurate scale. In this way minute alterations of bulk and contour might be recorded. It might also be used in operations on the cranium. The instrument is fully described by W. F. Stanley in his book on drawing instruments.

I am, Sirs, yours faithfully,

Bartholomew Villas, N.W., Sept. 18th. RICHARD INWARDS.

## THE PIGMENTATION OF THE FÆCES.

*To the Editors of* THE LANCET.

SIRS,—I cannot find any mention of the following fact in books of reference. Normal fæcal matter will lie in water without imparting any colour thereto, but sometimes the water rapidly becomes deeply coloured either of a rich yellow or brown tint. Can this pigment be an excess of stercobilin, or is it some other pigment? Has the phenomenon any pathological significance? I should be glad to have the opinion of your readers on the matter.

I am, Sirs, yours faithfully,

Sept. 19th, 1900. F.I.C.

## COSMETIC SURGERY.

IN the September number of the *Royal Magazine* is an account of what is called "A Beauty Factory" in the United States, and a correspondent who draws our attention to this article wishes to know if the marvels therein described are limited to the American continent or are also attainable in England. On the whole it may be said that most of the operations referred to in the article are frequently performed in England and we may be permitted to retain a healthy scepticism as to the possibility of some of the others. The article describes the removal of a scar by means of electricity so that no trace of the cicatrix was left. We may be permitted to doubt the possibility of this performance, though there is no difficulty in releasing adherent scars so that they are much less noticeable. No doubt some of the obscurity in the description in the article referred to is due to the fact that the narrator is not a member of the medical profession; for instance, we are told that

"some substance was placed on the bones to cement them together." This occurs in the description of an operation for "building up a nose with a sunken bridge." Even in England dimples can be produced at command, but whether it is justifiable to use a general anæsthetic for such an operation is rather doubtful. In all these cosmetic operations the immediate result is not what has to be considered, but rather the result after a few years, and in no small proportion of the cases the final condition is by no means all that could be desired.

## THE SMOKE NUISANCE.

*To the Editors of* THE LANCET.

SIRS,—Would a medical officer of health be justified in going into court and swearing that smoke issuing from brick-kilns that are situated within 10 and 20 feet of inhabited houses and a large board school was a nuisance injurious to health? and upon what grounds could he (the medical officer of health) prove it?

I am, Sirs, yours faithfully,
X. Y. Z.

Sept. 14th, 1900.

*** Nuisance from brick kilns is due to the smoke and sulphurous fumes issuing from the kilns. These fumes are irritating and lead to the closing of windows and thus are prejudicial to the inmates. It must be recollected that for the purpose of abatement an emanation must be a nuisance or injurious to health; it need not be both. Even if injury to health cannot be proved a kiln within the distance stated is probably a nuisance. Such emanations, however, frequently give rise to headache.—ED. L.

## EDUCATIONAL AID FOR MEDICAL STUDENTS.

*To the Editors of* THE LANCET.

SIRS,—I shall be greatly obliged should you kindly inform me through the medium of THE LANCET if there exists in the medical profession a society or some such a body having as its object the granting of pecuniary assistance to deserving men who through no fault of their own may be unable to continue their studies through lack of means, such assistance being, of course, granted on particular terms and after recommendation? Thanking you in anticipation for the favour of your reply in THE LANCET of this week,

I am, Sirs, yours faithfully,
DANIEL.

Sept. 16th, 1900.

*** We know of no such society in the medical profession. Tancred's Charity assists students in divinity, law, and physic who are "not capable of obtaining the education without assistance of this or a like charity." Our correspondent might apply for particulars of this charity to Mr. George Edgar Frere, clerk to the Governors and Trustees, 28, Lincoln's Inn-fields, W.C.—ED. L.

## THE LIFE ASSURANCE MEDICAL OFFICERS' ASSOCIATION.

*To the Editors of* THE LANCET.

SIRS,—I am much interested in insurance work and am local referee for some half-a-dozen insurance companies. If you could give me any nformation about the "Life Assurance Medical Officers' Association" I would esteem it a favour.

I am, Sirs, yours faithfully,
PROVINCIAL.

Sept. 12th, 1900.

*** The Life Assurance Medical Officers' Association was founded in 1893. The President is Sir Hermann Weber and the secretary is Dr. H. Mackenzie, 59, Welbeck-street, W.—ED. L.

## "A CONVALESCENT HOME FOR UPPER-CLASS CHILDREN."

MR. F. JAFFREY, F.R.C.S. Eng., L.R.C.P. Lond., writes to us in answer to Dr. A. G. Barrs's letter which appeared in THE LANCET of Sept. 15th, giving the address of a convalescent home—Heather Brow, Headly Hill, near Liphook, Hants. The home is kept by Miss Calvert.

## A POINT IN DIAGNOSIS.

*To the Editors of* THE LANCET.

SIRS,—Can any reader of THE LANCET suggest treatment for the following case? A boy, aged 15 years, complains of sneezing in the mornings but at no other times. Local examination of the nose reveals nothing abnormal. I have used the electro-cautery, local applications of cocaine, tonics, &c., but without any effect.

I am, Sirs, yours faithfully,
Q. R. S.

Sept. 14th, 1900.

## WANTED—A HOME FOR AN EPILEPTIC.

*To the Editors of* THE LANCET.

SIRS,—I should feel obliged for information as to a home or institution where a clergyman (Roman Catholic) can be accommodated under the following circumstances. He had, I understand, marked epileptiform seizures three and two years respectively, none in the interval. After the first memory was affected slightly—after the second very badly. Since then attacks have been more frequent—every two months or oftener. There is a peculiar post-epileptic condition with marked delusions. He is never violent, never irrational, and knows that what he sees must be creations of his own fancy. He is persuaded, however, that the devil appears to him and means to carry him off. He has an allowance of about £2 weekly.

I am, Sirs, yours faithfully,
S.

Sept. 17th, 1900.

## "THE SCHEDULING OF CARBOLIC ACID."

IN commenting upon the commercial resistance which is being brought forward to prevent the scheduling of acids as poisons a provincial paper remarks that "The National Union of Mineral Water Manufacturers, which represents a numerous body of manufacturers in England and Wales, who are of course the largest organised consumers of carbolic acid, has petitioned the Home Office begging that the official intention may be persisted in." This resolution must surely have related to the fact that carbolic acid was largely sold in ginger-beer bottles, a state of things which rendered the control of the sale of carbolic acid very desirable, rather than to mineral water makers being "the largest organised consumers of carbolic acid." Or did the writer mean carbonic acid?

## BOOKS REQUIRED.

*To the Editors of* THE LANCET.

SIRS,—I shall be much obliged for information as to the best text-books on the following subjects: (1) Practical Physiological Chemistry, and (2) Practical Experimental Physiology. Thanking you in anticipation,

I am, Sirs, yours faithfully,
MALEBRANCHE.

Sept. 17th, 1900.

*** A list of books will be found in THE LANCET of Sept. 1st, 1900, under the heading "The Student's Library."—ED. L.

## THE QUESTION OF A TRANSFER.

*To the Editors of* THE LANCET.

SIRS,—I shall be grateful for an opinion on the following points. A and B are partners in a middle-class practice of £2000 a year. A is going to retire and so B is going to take in C on the understanding that he pays two years' purchase of the gross receipts on the average of the last three years. B is to occupy A's house, a large one and associated for 20 years with the practice, while C is to occupy B's house, a smaller one. To what extent should the purchase price be affected (1) by B not occupying A's house but another one of the same rental close by; and (2) by A remaining in the neighbourhood as consulting physician?

I am, Sirs, yours faithfully,
AJAX.

Sept. 18th, 1900.

*** Our correspondent should obtain advice from some competent solicitor or agent.—ED. L.

## THE RIGHT TO A COCKADE.

*To the Editors of* THE LANCET.

SIRS,—I am a surgeon-lieutenant in the Volunteers. Is my coachman entitled to have a cockade in virtue of my commission? If so, is there any annual fee to be paid to Government as a tax?

I am, Sirs, yours faithfully,
VERDANT.

Sept. 19th, 1900.

*** Anyone holding Her Majesty's commission may use a cockade. It is not an armorial bearing and no tax has to be paid for its use.—ED. L.

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*Mr. M. F. Cahill.*—It is a little difficult to mention any French works on general surgery exactly corresponding to the works to which our correspondent refers, but we may mention as corresponding to the larger work, "Nouveaux Éléments de Pathologie Chirurgicale" (Paris, 1898), by Gross, Rolmer, &c., in two volumes. A very useful book is "Traité de Chirurgie d'Urgence," by Lejars, Paris. A second edition has recently appeared.

*Mr. G. Reginald Jones.*—The Liverpool Home for Epileptics receives patients at a charge of from 7*s.* 6*d.* per week. The honorary secretary is Mr. W. Grisewood, 2, Exchange-street East, Liverpool. We do not know of any free home.

*Namron.*—If the card is only given to patients on their attending at the surgery we do not think that it could be considered "a form of advertising."

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

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**During the week marked copies of the following newspapers, have been received:** *Lisburn Standard, Gainsborough Leader, Bradford Observer, Baker's Record, Western Morning News, Leek Times, Blackburn Weekly Standard, Walsall Advertiser, Cambridge Chronicle, Dundee Advertiser, Morning (London), Leeds Mercury, South Wales News, Vegetarian, Birmingham Daily Post, Dublin Daily Express, Lancaster Standard, Liverpool Daily Post, Lancashire Daily Post, Scotsman, Clifton Chronicle, Sheffield Daily Telegraph, Leicester Daily Post, Leamington Spa Courier, Normanton Herald, Times of India, Pioneer Mail, Citizen, Leeds Mercury, Builder, Bristol Mercury, Architect, City Press, Yorkshire Post, Newbury Weekly News, Huddersfield Examiner, Sanitary Record, Hertfordshire Mercury, Liverpool Journal of Commerce, Reading Mercury, St. Andrew's Citizen, Monmouth Beacon, Stamford Guardian, Mining Journal, Newcastle Daily Chronicle, Surrey Advertiser, Cheshire Daily Echo, Local Government Chronicle, Bournemouth Visitors' Directory, Scarborough Post, Leighton Buzzard Reporter, Evening Telegraph (Dublin), Nuneaton Observer, &c., &c.*

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Sept. 20th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radiation Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb | Dry Bulb. | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 14 | 30·38 | S.E. | ... | 106 | 67 | 56 | 58 | 61 | Overcast |
| ,, 15 | 30 19 | E. | ... | 104 | 72 | 58 | 59 | 60 | Overcast |
| ,, 16 | 30·20 | E. | ... | 111 | 75 | 60 | 62 | 64 | Fine |
| ,, 17 | 30·12 | SSW | 0·04 | 107 | 75 | 59 | 61 | 63 | Cloudy |
| ,, 18 | 30·03 | S. | . | 92 | 71 | 57 | 59 | 60 | Foggy |
| ,, 19 | 30·16 | N.W. | 0·02 | 105 | 71 | 51 | 53 | 55 | Fine |
| ,, 20 | 30·36 | WNW | ... | 102 | 71 | 51 | 53 | 55 | Fine |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (24th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (25th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**WEDNESDAY (26th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

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**TUESDAY (25th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Consultation. (Medical.)

**WEDNESDAY (26th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—5 P.M. Dr. A. E. Sansom: Clinical Lecture.

**THURSDAY (27th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

**FRIDAY (28th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. StClair Thomson: Consultation. (Nose and Throat.) 5-7 P.M. Mr. J. Griffith: Class. Practical Ophthalmology. Demonstration I.

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### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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# An Address
ON
# THE TREATMENT OF TYPHOID FEVER.

*Delivered before the Wigan Medical Society on Dec. 14th, 1899,*

BY JAMES BARR, M.D. GLASG., M.R.C.P. LOND.,
PHYSICIAN TO THE LIVERPOOL ROYAL INFIRMARY AND LECTURER ON CLINICAL MEDICINE AT UNIVERSITY COLLEGE, LIVERPOOL.

GENTLEMEN,—I feel honoured by your special request that I should deliver an address on the treatment of typhoid fever, and I shall as far as possible comply with your instructions that I should describe a method of treatment which can be readily carried out in private practice—perhaps shorn of the elaborate details which I have elsewhere advocated.[1] This will not very much curtail the scope of the address, as, in my opinion, every system of treatment can be carried out in private if you have got efficient nurses, but where you cannot rely on your nursing arrangements I should strongly recommend you to send such patients to a hospital. There is nothing more annoying to a medical attendant than to find his patient imperfectly nursed at a late stage of the disease, when perhaps it is im ossible to remove him.

I am sure you do not wish me to attempt to describe any system of treatment "made easy" which is so dear to the practical English mind. There is no straight path in the treatment of typhoid fever, so you will excuse me for not attempting to describe one. There are hundreds of men who would prescribe the latest synthetical product from Germany, of which they know nothing, on the authority of a chemist's testimonial—which, perhaps, was well paid for—who would not undertake the labour attending the use of cold baths which have undoubtedly diminished the o rtality in this disease. Now I do not approve of Brand's system as a routine treatment, not because it is troublesome but because it is, as Sir William Gairdner says, too much of a battledore-and-shuttlecock treatment—on the one hand cold baths, and on the other alcohol—and because the same end can be better attained by less heroic measures.

The treatment of disease is an applied art. Scientific methods may be laid down, but the application is an art and there is no disease where there is greater scope for the display of our skill than in the treatment of typhoid fever; the ever-varying picture and the danger signals ahead afford an interesting study which should well repay the diligent inquiry of every practitioner. In the treatment of typhoid fever death seems to dog some men's footsteps. This is not because they do not know the disease as well as others do, but because they are not artists. They do not clearly see the picture which nature has unfolded; their perspective is too limited and they have no eye for detail.

As a correct diagnosis is the first part of treatment I should like thus to have commenced my address, but in the time at my disposal this would carry me too far afield. I must therefore content myself by pointing out the necessity for an early recognition of the disease, and this note of warning is especially necessary in the present day as there is now a great tendency to leave the diagnosis to the bacteriologist. In my opinion in nine cases out of 10 the diagnosis should be made by the third day, whereas if you wait for Widal's reaction you will never have an opinion before the fifth day, and frequently the patient will be on the high road to recovery, or perhaps the grave, before the diagnosis has been made for you. It is an excellent confirmatory test and as such should not be neglected; moreover, as it shows a reaction on the part of the patient against the typhoid bacilli it has some prognostic value. As a very early test I prefer Ehrlich's diazo-reaction of the urine which, although present in some other febrile affections, is never so pronounced as in typhoid fever. When the patient is improving this test gradually disappears, but Widal's, or rather Grünbaum's, reaction becomes more marked.

When you are called in to see a patient with severe headache, suffused face, moderate fever, perhaps vomiting or other gastro-intestinal symptoms, chilliness, and pains in the limbs, do not jump at the conclu-ion that he has got influenza and commence to dose him with antipyrin, phenacetin, or acetanilid. These drugs do a great deal of mischief in this disease and are wholly unnecessary for any other. In my opinion it is a great pity that they were ever invented.

We will suppose that you have seen the patient during the first day of the fever, which only occasionally happens, but even then you will probably get a history of some prodromal symptoms during the incubation period of the previous fortnight. There have been general malaise, lassitude, inaptitude for business, and perhaps one or two slight attacks of diarrhœa which may have been injudiciously checked. During the first day or two you may call the disease influenza, or a cold, or a chill, or whatever else you like, but, in my opinion, it is much better not to give it a name unless you feel confident as to the nature of the affection with which you have got to deal. Your thermometer will show you that the patient is feverish and so you should send him to bed after a warm bath. For any febrile process it is not necessary that he should be overclothed—nay, it is better that no method should be adopted further to elevate the temperature. Whether there be diarrhœa or constipation he should get a good dose of calomel to be followed by a saline draught on the following morning. If there be vomiting he should have three or four tumblerfuls of hot water to wash out the stomach. If there be much headache, restlessness, or sleeplessness he should get 10 grains of Dover's powder which may be combined with 10 grains of salicylic acid or salol and repeated as often as may be necessary. This should carry you on to the third day, by which time, I presume, the diagnosis will have been made, though in some cases it may require further confirmation.

## PROPHYLAXIS.

Prevention is better than cure and typhoid fever is a preventable disease, but unfortunately it is one which is not prevented. By giving us a fresh water-supply sanitary authorities have lessened or almost abolished widely spread epidemics, but as an endemic in many large centres of population it is as prevalent and of as severe a type as it was a quarter of a century ago. Although the type is now as severe as ever it was, the death-rate during this period has been diminished at least 50 per cent., and I think there is still room for further improvement. Until medical officers of health succeed in extinguishing that very motile organism the typhoid bacillus it is our duty as practitioners to use every possible precaution to prevent our patients from becoming either directly or indirectly a cause of disease in others. In every case we should try to find out the source of infection so that the patient may not be further subjected to any deleterious influence and that others may not be exposed to the risk which he has failed to escape. Milk is not an infrequent medium of carrying the typhoid bacilli, and some time ago 32 children in the Liverpool district contracted typhoid fever on the same day from partaking of ice-cream from an Italian vendor of that article. At that time Dr. Charles A. Hill found some samples of ice-cream to contain a greater number and variety of micro-organisms than were to be found in Liverpool sewage. The oyster scare, which was well founded, had an excellent effect in improving the conditions under which these bivalves are reared, but even now many oysters, shrimps, &c., are not above suspicion. Flies have been credited with the spread of disease, and it is easy to see how they might readily contaminate meat and other articles of diet by conveying the bacilli from fæces or other filth. The house drainage should receive immediate attention, and all suspected articles of food or drink should be well boiled.

To prevent any spread of disease from the patient all the excretions and soiled clothing should be thoroughly disinfected; the difficulty is not so much in finding a good and cheap disinfectant as in inducing nurses to use it in efficient quantities. About half a pint of the disinfectant should be placed in the bed-pan and afterwards another half-pint should be poured over the fæces, and the whole should be well mixed and allowed to stand for two hours before being poured down the closet or otherwise disposed of. The urine and sputum should also be disinfected. The soiled linen should be soaked for two days in a solution of perchloride of mercury or biniodide of mercury (1 in 1000) before being washed. After the recovery or the death of the patient all the bedding and wearing apparel should be

[1] The Treatment of Typhoid Fever, 1892.

disinfected by heat. The nurses should be instructed to keep bed-pans and other utensils scrupulously clean and to avoid all splashing when removing the dejecta. Nurses should keep their finger-nails short, and they should thoroughly wash their hands in a solution of biniodide of mercury (1 in 1000) after every time they attend upon a typhoid fever patient and more especially before they handle any article of food. A person could carry a sufficient number of bacilli under a finger-nail to infect many people. We should all remember that many micro-organisms are really very difficult to kill. I recently found in the urine of a patient suffering from cystitis a very motile bacillus which closely resembled the bacillus of typhoid fever, and it was exceedingly lively in urine containing 40 per cent. of strong hydrochloric acid. Professor Wright and Major Semple, R.A.M.C., have introduced a typhoid vaccine as a preventive against this disease, but its value is not yet clearly defined.

### GENERAL MANAGEMENT.

The patient should be put to bed and kept there until convalescence is well established. He must be taught to use the bed-pan and urinal from the commencement. His posture should be occasionally changed. He should be kept quiet, fed at regular intervals, and encouraged to sleep. The nurses should be kind, bright, and cheerful; they should have a noiseless tread and be well versed in their duties; and they should keep an accurate record of all matters appertaining to the case. The room should be large, airy, well ventilated, and kept at a temperature of from 60° to 65° F., preferably by an open fire. I like to see the windows somewhat open both day and night. It is no doubt difficult in cold weather to maintain a uniform temperature with open windows, but ventilation must never be sacrificed for heat. The relatives should be taught that fever patients do not catch cold. It is often difficult to instil this doctrine even into medical men. Often when I have exposed a fever patient for examination I have seen the medical attendant almost shivering with fear lest his patient should catch a chill. The bronchitis and congestion of the lungs from which typhoid fever patients frequently suffer are due to the typho-toxin and not to any chill, but still it is not well to increase the mischief by making the patient breathe cold air. Cylinders of oxygen have not yet been introduced in the treatment of this disease, and I hope we may long escape such a delusion and snare; what the patient requires is the pure air of heaven. The late Sir B. W. Richardson showed that prebreathed or devitalised oxygen did not support life, but in the stuffy rooms in which many fever patients are treated they can get little else, and in such cases a little oxygen from a cylinder is a poor substitute for a breath of fresh air. The room should also be well lighted, and a certain amount of carpeting on the floor as a means of lessening noise is decidedly useful. The bedstead should, if possible, be narrow and be approachable from either side. It should be fitted with spring and hair mattresses, and the latter should be protected by waterproof sheeting. Flock- and feather-beds, eider-down quilts, and other non-conductors of heat should be strictly interdicted. During the continuance of the fever it is much better that the patient should have no nightshirt. He should lie between linen sheets and should only have an additional counterpane, or at most a single blanket and light quilt. As a rule, I keep the blanket and quilt over the lower extremities and only cover the body with a sheet. There are, of course, many serious cases in which with a high internal temperature the extremities are very cold, where the covering has to be considerably modified, and it may be even necessary to apply hot bottles to the limbs and wrap them in flannel. All the clothing should be kept scrupulously clean. In many thin and emaciated patients it may be advisable to use a water-bed to prevent bed-sores, but it should never be used as an antipyretic agent. It is usually, however, only requisite at a late stage of the disease when an antipyretic effect is not needed. When the patient's temperature approaches the normal the risks from chills begin, and of course the covering should then be increased.

In severe cases the patient is dull, apathetic, and stupid; his intellectual faculties are blunted; and he is, perhaps, delirious and oblivious to all external impressions, so that he makes no demand and does not care to do anything for himself. The nurse, therefore, should be well trained and on the alert. She should keep his nose scrupulously clean, as dry, offensive secretions quickly accumulate and rhinitis is readily established with consequent risk of secondary infection. These secretions do not annoy the patient and he makes no attempt to remove them. An excellent method of keeping the nose clean is by frequently spraying it with a 2 per cent. solution of menthol in paroleine, or liquid vaseline. All dried secretions can be readily removed by a little cotton-wool on a probe. The mouth, also, should be kept very clean and all sordes should be removed from the lips and teeth. An excellent cleaning agent for spraying out the mouth consists of equal parts of glycerine and peroxide of hydrogen. Equal parts of tincture of iodine and glycerine painted along the gums is a good antiseptic. Sponging the hands and face and the application of a little eau de cologne to the head are grateful to the patient.

### DIET.

Milk is almost universally held to be the staple diet in typhoid fever. It is looked upon as a model food because it contains all the ingredients necessary for repairing waste and supplying heat, but it does not necessarily follow that because the constituents are in the proper proportions for a growing infant it is best suited for a fever patient where the conditions are completely reversed. In the latter the anabolic processes are in abeyance, and the katabolic processes are exceedingly active. Where milk is the only diet in fever cases the tissue waste is exceedingly great. The nitrogenous element of food may be readily supplied by milk, but the sugar and fat are not in sufficient quantity in that fluid and they require to be supplemented from other sources. Moreover, as Sir William Jenner pointed out, a pint of milk is often more difficult to digest than a mutton-chop, and whatever foods we order we should see that they are properly digested. The stools should therefore be carefully inspected, and when any curd of milk or other undigested food is present the diet should be peptonised. The milk should be invariably diluted with an equal quantity of plain water, barley-water, or whey. I also recommend the addition of sugar of milk and chloride of sodium—the latter is too frequently omitted from febrile diets. Dr. Burney Yeo recommends the addition of an alkaline tabloid composed of bicarbonate of soda, bicarbonate of potash, carbonate of magnesium, and common salt, but I have arrived at the conclusion that all alkalies are positively injurious in typhoid fever. Latterly I have been trying buttermilk, which, as you all know, contains a large quantity of lactic acid, as I found that the typhoid bacilli did not multiply so rapidly in it as in new milk. However, they do multiply and become very active in buttermilk, and I have not yet found a diet inimical to their growth. When buttermilk is used it should be well diluted, otherwise the curds will appear in the stools. A patient in a recent severe case did remarkably well on buttermilk, with cold compresses on the abdomen and three injections of anti-typhoid serum. From two to three pints of milk are sufficient in the 24 hours, though the total quantity of fluid drunk by an adult should be at least five or six pints. When there is much intestinal decomposition with flatulent distension I am very fond of ordering whey prepared by boiling equal quantities of buttermilk and new milk and straining. To each pint of whey one or two ounces of cream may be added.

The best diet to prevent the wasting in typhoid fever has not yet been determined. The loss of weight during the febrile process is to a considerable extent due to the dehydration of the tissues, but the water is afterwards quickly replaced and this to a great extent accounts for the rapid increase of weight which usually takes place when the convalescent stage is reached. During the fever there is little or no tissue upbuilding and therefore the demand for nitrogenous food cannot be great, but if the pyrexia, which is inevitable, is not to be maintained at the expense of the tissue we must supply an abundance of other fuel in the form of easily assimilable carbohydrates or hydrocarbons. The great objection to carbohydrates is their undoubted liability to undergo fermentative changes with the liberation of gas in the intestinal tract. No doubt when the salivary and pancreatic secretions are much diminished ordinary farinaceous diet should not be given until it has been subjected to the amylolytic action of some of the many ferments in the market. If you keep the patient's temperature down by hydrotherapeutic measures you will find that the whole of the digestive processes are much improved. Of this class of diet I frequently order peptonised bread and milk, Benger's food, Mellin's food, or Horlick's malted milk, and about two ounces of butter, or five or six ounces of cream daily. During the febrile stage the food, whatever it be, should be liquid and should be administered every two or

three hours when the patient is awake. If there be constipation or not much diarrhœa extract of malt will be found useful, and sugar or sugar of milk may usually be given, also the expressed juice of ripe grapes, but neither the skins nor seeds. If any stimulating effect is required beef-tea, mutton broth, or chicken broth, with vegetable juices but no cellulose, clear soup, beef essence, cocoa, and coffee may be given, and one or two raw eggs may be administered daily during any stage of the disease. The patient should be encouraged to drink plenty of pure cold water, toast-water, barley-water, whey, or home-made lemonade. If there be any constipation a little cream of tartar may be added to the lemonade.

During the whole course of the fever do not rest satisfied with the report that the bowels are freely opened but daily inspect the abdomen, examine the urine, and, if convenient, see one of the stools. If the bowels be at all loaded, if the abdomen be distended, and if the urine contain an appreciable amount of indican you have sufficient evidence that decomposition of the contents of the bowel is going on, consequently the bowels should be cleared out with a dose of castor-oil or other gentle laxative, and the diet should be diminished.

The liquid nourishment should be continued until the temperature has been normal for a week or ten days and then you should begin cautiously with fish, chicken, mutton, lightly-boiled eggs, sweetbreads, boiled tripe, &c. When the patient has been fairly nourished during the fever his temperature is not likely to be affected when he begins to take solid food unless there be constipation, and this should not be allowed to occur. Recrudescences and relapses are often ascribed to the use of solid food when the occurrences are merely coincidences. Constipation with retention of the typhoid and colon bacilli is a more likely source of future mischief.

### ALCOHOL.

The most severe case of typhoid fever can be better treated without alcohol than with it, and the conditions demanding its use in this disease are very few and far between. Alcohol is not a food in the proper acceptation of the word: it is a sedative, or, to use a commoner though less accurate designation, a stimulant. It causes vaso-motor paresis which is usually sufficiently accomplished by the fever poison without any assistance. This effect may be necessary during the chilly stage, during collapse, or to counteract the effect of a cold bath, but in a well-managed case, without any heroic treatment, such influence should not often be necessary. In cases where there is high body temperature with cold extremities I occasionally allow a pint of good bitter beer in the 24 hours as a diffusible stimulant to lessen peripheral resistance to the circulation. When there is obstinate vomiting a little champagne occasionally does good and in cases of sudden collapse a few teaspoonfuls of brandy may be given. By writers on this subject most elaborate rules have been laid down to guide the administration of alcohol according to the state of the heart, the pulse, the tongue, and the nervous system, but these rules are usually utterly devoid of any physiological basis, and even their authors would have great difficulty in determining beforehand their proper application in practice. Alcohol is not a cardiac tonic, but it is usually prescribed in typhoid fever with that object in view, and we frequently see drugs having a diametrically opposite action—such as alcohol on the one hand and strychnine or digitalis on the other—given with the view of strengthening the heart's action and tiding the patient over a difficulty. I have seen the limbs jumping about under the influence of alcohol and strychnine given with the view of supporting that common bugbear, a weak heart, when there was not the slightest probability of any cardiac failure. We frequently hear of patients being "kept alive" for a certain number of days on brandy; but as these cases generally end in death it would perhaps be more accurate to say that the only nutriment they had during the last few days of life was diluted brandy. The tenure of life held under such conditions is usually dearly bought. I have never been able to see why dying patients should have their mouths parched with brandy, often of an abominable quality, which would early make them cry out, if they were only able, for a drop of cold water to moisten the tongue. Some men prescribe alcohol freely in typhoid fever and pneumonia because they believe in its efficacy; others because they are too weak to run counter to the views of the patient's relatives; and teetotalers, who have no personal knowledge of alcohol, because it is the popular thing to do and they do not like to be considered prejudiced. They have a vague idea that what they consider a potent poison in health must be a powerful remedy in disease. Many of those who prescribe it very sparingly think that it should be specially given to patients accustomed to it in health so as not to disturb any long-acquired habit, but in my experience—and I am supported by the experience of Sir William Broadbent—these are just the cases which do better with other medicaments. Frequently I prescribe some alcohol for myself and my healthy friends, but when any of them are diseased I am not likely to poison them with this drug. If I were convalescing from typhoid fever I would enjoy some good port, and I do not care to prohibit others from what I would probably take myself. As a food or antipyretic agent it is of very little value and should be avoided during the febrile stage unless there be some special reasons for its use. The large quantities of alcohol which are frequently prescribed must inevitably lead to cardiac asthenia and so protract convalescence. It is not a cardiac tonic and should be reserved for a time when its potency in lessening peripheral resistance and so relieving the heart will be of service.

### ANTIPYRETIC TREATMENT.

The fever induced by the typho-toxin is a natural part of the disease and so long as it remains moderate in degree it does not demand much interference. There are some severe cases where the intensity of the poison stupefies the nervous system and subdues the temperature, so that the case only assumes a normal course when the bowels have been well cleared out and we get febrile reaction. We know that high temperature can work mischief irrespectively of the agent which induced it, though it is a mistake to suppose that all the evils of fevers are due to the high temperature, because apyrexia might be maintained throughout the whole course of the illness by the use of powerful antipyretic drugs without modifying the course of the disease or improving the patient's chance of recovery. The albuminous degeneration which occurs in the striped muscular fibre of the heart and voluntary muscles, in the cells of all the glandular organs, and even in the nerve cells, is no doubt largely due to the high temperature, though I think the fever poison must also be partly credited with this degradation, because evidence of its existence can be found in all severe cases no matter how well the temperature has been subdued. The temperature, however, is the one factor in fever which can be most readily combated, and when this has been efficiently carried out by the antipyretic action of water the signs of degeneration are correspondingly lessened. For example, in my tank cases[2] the heart's action improved and there was no anxiety as to cardiac paralysis. The functions of the glandular organs were restored, and although the nervous irritability was heightened there were no signs of nervous exhaustion and consequently convalescence progressed rapidly. I have discarded the use of drugs as antipyretic agents, and I shall now consider some of the methods of applying water for the reduction of the temperature.

*Warm or tepid bath.*—At the very commencement of an attack of fever, before we know the exact nature of the illness with which we have got to deal, when the patient is chilly and restless, I think the cleansing and soothing effects of a warm or tepid bath will be decidedly beneficial. Cold sponging is very grateful to the patient, but it has no lasting effect on the temperature and is only suitable for mild cases.

*Cold compresses.*—Cold compresses kept constantly applied over the whole abdomen form the antipyretic agent which I most frequently employ, the patient having no nightdress or other body-covering except a large compress sufficient to cover the abdomen and lower ribs. This is wrung out of cold or iced water and frequently changed, except when the patient is asleep; even then it can be changed without much disturbance, but so long as it is moist it acts as a cooling agent and frequent renewal is not necessary. A large cradle is placed over the patient and this is covered with a single sheet, so that evaporation is allowed to take place freely. In order to keep the four extremities comfortable I direct a large stocking to be kept on each, or they may be wrapped in flannel. In the case of the lower extremities it is often advisable to keep a warm bottle in the bed.

*The hammock.*—In very severe cases I have used the continuous bath, and latterly I have been adopting a somewhat more convenient method of having the patient swung in a hammock and a small constant stream of tepid water kept

[2] The Treatment of Typhoid Fever, 1892.

playing over the abdomen. This is best carried out by taking the framework of an Ilkley couch and stretching over it loose canvas cloth such as is used for sunblinds in greenhouses; this hammock can be set on any ordinary bedstead. A water-pillow is placed to receive the patient's buttocks, but otherwise he can be placed naked on the canvas. A large piece of flannel is now used as a wet compress to cover the abdomen and lower part of the chest. A small, constant stream of water at 80° F. diffuses over this flannel, passes on to the hammock, and gravitates to the most dependent part near the buttocks, where it is easily collected in a large bucket or other receptacle. If it be thought necessary to increase the comfort of the patient a large spirit lamp can be kept constantly burning under the bed; this increases the evaporation and so carries away a great amount of latent heat. The patient's thighs and legs should be kept wrapped up in a dry blanket. This method so far has been successful in each case in which I have tried it. One of my best cases was a severe attack of typhoid fever in a delicate woman who was in the sixth month of pregnancy; she was also suffering from advanced mitral stenosis and congestion of the lungs, and towards the end of the third week she had a severe attack of intestinal hæmorrhage. She made a good recovery, carried the child to the full time and on many occasions since has shown herself and child at the Liverpool Royal Infirmary. Any man with a little ingenuity can easily devise a method to suit the circumstances of any individual case. An ice-bag to the right iliac fossa in cases of intestinal hæmorrhage is very useful, but even in these cases I prefer its use to be intermittent as the constant application is apt to lower the vitality of the parts. Where there is a tendency to pulmonary œdema, one of the most fatal complications of this or any other disease, it indicates failure of the right side of the heart, and in such cases I like cold compresses to the abdomen to lower the temperature, rouse up the nervous energy, and increase the depth of the respirations.

*Cold-water enemata.*—It is an excellent plan to allow a pint and a half of cold water containing some antiseptic, such as permanganate of potassium or peroxide of hydrogen, to gravitate up the large bowel once or twice daily. This helps to cool the body, but, what is of much more importance, it washes away all decomposing matter which has accumulated in the large bowel; this should be adopted in every case where there is an excess of indican in the urine. These methods of treatment keep the temperature within bounds, improve the vaso-motor tone, and raise the systemic blood-pressure and increase the depth of the respirations. There is marked improvement in the digestive tract; the tongue becomes moist and clean, the salivary secretion increases, the appetite and digestion improve, the diarrhœa disappears, and the character of the motions changes for the better. There is, as a rule, no delirium and the general well-being of the patient greatly improves. Although the diet is, in my opinion, always liberal, there is usually a craving for more to eat long before it is deemed advisable to give solid food.

## MEDICINE.

I have not much faith in trusting too much to physic in typhoid fever, though I usually adopt a routine plan of giving some intestinal antiseptic, not with the view of killing the bacilli, but to prevent intestinal decomposition. If the patient comes early under observation and there is much retching or vomiting I am sufficiently old-fashioned to order an emetic, and of all emetics the simplest is the best. I prefer two or three tumblerfuls of hot water to anything else. If these symptoms occur at a later stage of the disease they are indicative of prostration with congestion of the stomach or perhaps some cerebral affection and should be treated accordingly, but no emetics should be administered. If the cause be referable to the stomach a sinapism should be applied to the epigastrium, and a few small doses of calomel, and perhaps a little champagne, be given. When the vomiting is due to typhoid ulcers in the stomach, which I have seen in two cases, it is a most difficult matter to control. I always begin treatment with a good calomel purge and afterwards keep the bowels well opened during the whole illness.

Constipation in this disease is frequently due to an inactive and distended condition of the large bowel, of which the natural secretion is defective and consequently the liquid portion of the fæces is absorbed. The hard scybala may cause irritation and set up a catarrhal flux which, however, is usually insufficient to effect their removal; the frequent small liquid motions may give rise to the impression that the trouble is diarrhœa rather than constipation. To empty the large bowel and lessen its torpidity enemata given daily or every other day will prove highly efficacious. I saw a patient recently who had been dosed with lead and opium pills until the abdomen was as tense as a drum. The tympanitic distension was relieved and real constipation established by repeated cold-water enemata containing permanganate of potassium.

The more or less routine administration of intestinal antiseptics has a good effect in preventing decomposition and lessening distension, but you must not suppose that you are thus going to kill the typhoid bacilli. I generally use benzo-naphthol or salol, but no doubt many other antiseptics are equally useful. The chlorine mixture of Dr. Burney Yeo has, perhaps, the advantage of neutralising his alkaline tablets. You can more effectually disinfect the fæces outside than inside the intestinal tract. Frontal headache and sleeplessness in the early stage are best relieved by Dover's powder and salicylic acid; these remedies are also useful in tympanitis. For bronchial catarrh and hypostatic congestion of the lungs use ammonium carbonate and caffeine. Pulmonary œdema, indicative of right cardiac failure, is best relieved by cardiac tonics and agents to increase the action of the respiratory pump, such as caffeine, strychnine, digitalis, cold applications to the abdomen, &c. Pneumonia and pleurisy are usually supposed to demand stimulants, but the stimulant should be more especially ammonia, or ammonia, caffeine, and quinine, but not alcohol. In pneumonia and hypostatic congestion of the lungs there is vaso-motor paresis which requires to be counteracted by a vaso-motor tonic and not intensified by alcohol.

## HÆMORRHAGE.

A sudden fall of temperature, a blanched anxious face, and a small weak pulse should direct our attention to the occurrence of hæmorrhage, even before the blood has appeared in the stools. No doubt epistaxis, and even hæmorrhage from the bowels, at an early stage of the fever from congestion of the mucous membranes, is not a matter of much importance, but profuse hæmorrhage about the end of the third week is a fact of the gravest significance. The patient is not then in a position to bear the loss of blood, and the sudden fall of blood-pressure places his life in imminent danger. The horizontal position should be strictly maintained, and if the loss of blood has been great the foot of the bed should be raised so as to depress the patient's head below the rest of his body. All unnecessary disturbance of the body should be avoided, and the urine should be drawn off with a catheter. The first internal remedy should be a dose of opium. A teaspoonful of laudanum is a fair dose for an adult, and it is much better to give one large dose than several small ones. The best hæmostatic is perhaps turpentine in 10-minim doses every hour or two. In these cases there is generally defective arterial tone, to counteract which ergotin may be injected hypodermically, or chloride of calcium may be added to the turpentine mixture. Suprarenal capsule is a good vaso-constrictor, but its value in intestinal hæmorrhage is somewhat problematical. If there be any vomiting the patient should have ice to suck or swallow. Until all hæmorrhage has ceased the stomach should not be troubled with much food, and this should only consist of beef essence, soup, peptonised gruel, and whey. The intermittent use of a large ice-bag, especially if there be any febrile temperature, to the right iliac region is efficacious.

## PERFORATION.

Early surgical operation, though hitherto not very successful, offers perhaps the best chance of recovery. If the operation be not performed early there is apt to be general peritonitis, which further militates against the patient's recovery. Moreover, the coils of bowel get glued together, and it may be difficult to find the perforation. Some time ago I saw a case with Mr. W. R. Judd in which we diagnosed perforation on account of the collapse, abdominal distension, and complete absence of hepatic and splenic dulness. From the history we concluded that the perforation occurred soon after Mr. Judd's visit on the previous day, and at least 24 hours before the night on which I saw the patient. We thought him too ill for operation, but agreed that Mr. F. T. Paul should see him with us early on the following morning. We put him on a starvation diet, and ordered

10 grains of Dover's powder and 10 grains of salicylic acid every four hours. In the morning when we three met he seemed better; his pulse was fuller and less frequent, and the tympanites was less. The question of operation was postponed for 24 hours, and we directed that the starvation and powders should be continued. On the following morning he was much better; the tympanites was less, and the hepatic and splenic dulness could be made out. The question of operation was dismissed and he eventually made a good recovery. In this case, I presume, the perforation was soon sealed up by glueing to a neighbouring coil of bowel, but such a happy result is of rare occurrence.

### PERITONITIS.

When this follows on perforation the treatment will be similar to that of the condition which induced it. When it occurs as a rare complication of typhoid fever without any antecedent perforation, it should be treated on general principles. In these cases it is usually due to indiscreet attempts to check the diarrhœa, and is perhaps not so frequently caused even in these typhoid cases by the bacillus typhosus as by the bacillus coli communis and other micro-organisms. The intestinal congestion should be diminished by small and repeated doses of calomel and opium, and if there be constipation or only slight diarrhœa small doses of some saline, such as sulphate of soda, should be given as frequently as is requisite. The pain should be completely subdued by opium. The circulation in the abdomen and the distension of the bowel should be lessened by an ice-bag or cold compresses applied to the abdomen.

### CYSTITIS.

Cystitis is not of infrequent occurrence and may be due to either the typhoid or colon bacillus. The best remedies are urotropine and salol.

### TYMPANITES.

There is always, or nearly always, a certain amount of flatulent distension of the abdomen in typhoid fever, but excessive tympanites usually occurs when there is great nervous prostration and should be treated accordingly. It is not infrequently due to over-feeding and consequent intestinal decomposition. When, therefore, you find much abdominal distension and excessive indican in the urine the diet should be materially diminished. Cold compresses to the abdomen do good; intestinal antisepsis should be carried out to lessen fœtor and prevent decomposition of the contents of the bowel. For this purpose such remedies as salicylic acid, salol, benzo-naphthol, turpentine, menthol, cajuput, ammonia, quinine and caffeine, &c., will be found useful. The food should be peptonised.

### CONSTIPATION.

Sir William Jenner pointed out that this condition when persistent is frequently associated with deep ulceration and a greater liability to hæmorrhage. It should be counteracted by mild laxatives, such as calomel, salines, or castor-oil, and any over-loading of the large bowel should be removed by enemata. I never see a case where the diarrhœa is such as to require astringents. The possibility of retention of urine, too, should always be kept in mind.

### ALBUMINURIA.

This is a valuable indication as showing the state of the circulation. It indicates renal congestion and is associated with defective cardiac energy, diminished vis viva in the circulation, and vaso-motor paresis. Such conditions are improved by hydro-therapy, and vaso-motor tonics such as caffeine, digitalis, ammonia, and quinine.

### PROTRACTED INTERMITTENT PYREXIA.

Typhoid fever is often protracted by recrudescences and relapses, but occasionally we get evening rises of temperature lasting for one or more weeks due to secondary infections. I have seen the pyrexia in some such cases cut short by a few injections of antistreptococcic serum.

### THROMBOSIS AND EMBOLISM.

In both these conditions the part affected should be kept warm and at perfect rest. Ammonia should be freely administered, and frequently opium is of good service. I shall not weary you further with the treatment of rare complications nor with that of convalescence. If you follow the lines which I have laid down you will have a low mortality, and that is a point of primary importance to your patients.

# EXPERIMENTAL PROOF OF THE MOSQUITO-MALARIA THEORY.

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ALTHOUGH the theory that the malaria parasite is transmitted from man to man by particular species of mosquito is now accepted by all biologists and medical men who have given adequate attention to the subject it cannot be said that the general public (including those Europeans who in malarious countries might benefit by the practical application of the theory) unreservedly believe in it, much less practically apply it. Endless objections the outcome of an imperfect acquaintance with the subject—and perhaps of a disinclination to admit that a pathological puzzle of so many centuries' standing could receive so simple an explanation—have been raised by the amateur biologist and sanitarian; so much so that it seemed not improbable that a great principle, pregnant with important issues, might remain barren and unutilised.

Impressed with this fear and being anxious to see some fruit from a theory which I knew to be true and for which I was in a measure responsible, I cast about for means by which the conversion and coöperation of the public might be secured. I felt that unless the public believed in the efficiency of the sanitary measures so definitely indicated by the mosquito-malaria theory and to some extent understood the principles on which these measures should be founded they would not adopt them or, what is so necessary to the success of all such measures, coöperate heartily in carrying them out. As the histological, biological, and experimental evidence which had satisfied men of science was not understood by the public it seemed to me that some simple demonstration was required such as would be unanswerable and at the same time readily comprehended by laymen.

Grassi, in conjunction with Bignami, had succeeded in conveying malaria by mosquito bite. Although these experimenters took every care to exclude fallacy the fact that the experiments were made in Rome—itself of fever repute and in the middle of a highly malarial district—had an undoubted influence in preventing due appreciation by the public of the conclusive nature of their work. Furthermore, things occurring at a distance and in a strange land do not appeal so strongly as do things happening in our midst. It occurred to me, therefore, that if I repeated Grassi and Bignami's experiments in a more dramatic and crucial manner—that if I fed laboratory-reared mosquitoes on a malarial patient in a distant country and subsequently carried the mosquitoes to the centre of London, and there set them to bite some healthy individual free from any suspicion of being malarial, and if this individual within a short period of being bitten developed malarial fever and showed in his blood the characteristic parasite—the conclusion that malaria is conveyed by the mosquito would be evident to every understanding and could not possibly be evaded. It also occurred to me that if a certain number of Europeans who had never suffered from malaria kept in good health and free from malaria during an entire malarial season in an intensely malarial locality where all inhabitants and visitors suffered from malaria, and if they kept well without the use of quinine or other medicinal prophylactic, simply by avoiding mosquito-bite, that the above conclusion would be accentuated; and, also, that if this immunity were attained by inexpensive means, means which did not interfere seriously with comfort, pleasure, or business, the mosquito-malaria theory would not only be proved to the satisfaction of the public but the public would be willing to accept the sanitary measures which the theory and experiments indicated. After having obtained promise of support from the Colonial Office and from the London School of Tropical Medicine and securing volunteers for the experiments, still further to accentuate my object and to arrest the attention of those principally interested I publicly announced in a popular lecture at the Colonial Institute that the above experiments were about to be undertaken and with the same object in view I ventured to forecast their issue.

### EXPERIMENT I.

Dr. Bignami and Dr. Bastianelli very kindly undertook to send me relays of infected mosquitoes from Rome. I have to thank these gentlemen for the great care exercised in this somewhat responsible matter. Every case of malaria coming to a general hospital is not suitable for experiment. To have sent mosquitoes infected with malignant tertian parasites might have endangered the life of the subject of the experiment; and quartan-infected insects might have conferred a type of disease which, though not endangering life, is extremely difficult to eradicate. The cases, therefore, on which the experimental insects were fed had to be examples of pure benign tertian—a type of case not readily met with in Rome during the height of the malarial season—and the absolute purity of the infection could be ascertained only by repeated and careful microscopic examination of the blood of the patients.

When the insects had fed, Dr. L. Sambon, who had gone to Rome in connexion with Experiment No. II., placed them in small cylindrical cages made of mosquito netting stretched on a wire frame. Four such cylinders were packed in a well-ventilated box and forwarded to the London School of Tropical Medicine through the British Embassy in Rome. By the courtesy of the Postmaster-General they came forward by the Indian mail so that they arrived in London some 48 hours after leaving Rome. A good many of the mosquitoes died on the journey or soon after arrival; but a fair proportion survived and appeared to be healthy and vigorous. We are indebted to Dr. Sambon for the method employed of caging mosquitoes. Future experimenters will find it very useful. To infect the insect, or to become infected by them, the experimenter has merely to place his hand in the cage after carefully untying the netting at one end or, better, by laying the closed cage on his damped hand.

The following notes regarding this experiment are by Mr. P. Thurburn Manson, Guy's Hospital:—

"I am 23 years of age. I was born in China, but have lived in this country since I was three years old, and have never been abroad since, nor in any district in this country reputed to be malarial. I am healthy.

"The first consignment of mosquitoes arrived at the London School of Tropical Medicine on July 5 h. Only some half-dozen had survived the journey. They were in a languid condition and would not feed satisfactorily. One may have bitten me. By July 7th they were all dead. The second consignment arrived on August 29th. They had been infected in Rome on August 17th, 20th, and 23rd by being fed upon a patient with a double benign tertian infection. The patient was reported to have had numerous parasites, including many gametes, in his blood. On arrival 12 insects were lively and healthy-looking. I fed five of them on August 29th, three on August 31st, one on Sept. 2nd, and one on Sept. 4th. They bit my fingers and hands readily. The bites were followed by a considerable amount of irritation which persisted for two days. The third consignment arrived on Sept. 10th. They had been fed in Rome on Sept. 6th and 7th on a patient suffering from a simple tertian infection but with very few parasites in his blood. There were some 50 to 60 mosquitoes in good condition. 25 bit me on Sept. 10th and 10 on the 12th.

"Up till *Sept. 13th* I had been perfectly well. On the morning of the 13th I rose feeling languid and out of sorts with a temperature of 99° F. By midday I was feeling chilly and inclined to yawn. At 4.30 P.M. I went to bed with severe headache, a sensation of chilliness, lassitude, pains in the back and bones, and a temperature of 101·4°. Repeated examinations failed to discover any malarial parasites in my blood.

"*September 14th.*—I slept fairly well but woke at 3 A.M. with slight sweating and a temperature of 101°. During the day my temperature ranged between 101° and 102°. The symptoms of the 13th were exaggerated and anorexia was complete. Several examinations of the blood were made again with negative result. To relieve headache 10 grains of phenacetin were given at 6 P.M.; I perspired profusely but slept indifferently.

"*September 15th.*—I woke at 7 A.M., feeling distinctly better, with a temperature of 100·4°. No malaria parasites were discovered on repeated examinations of my blood by my father. About 2 P.M. I commenced to feel slightly chilly; this soon wore off and I became hot and restless. By 4.30 P.M. my temperature was 103·6°. It remained about 103° till 9 P.M., when profuse sweating set in. I am told there was some delirium.

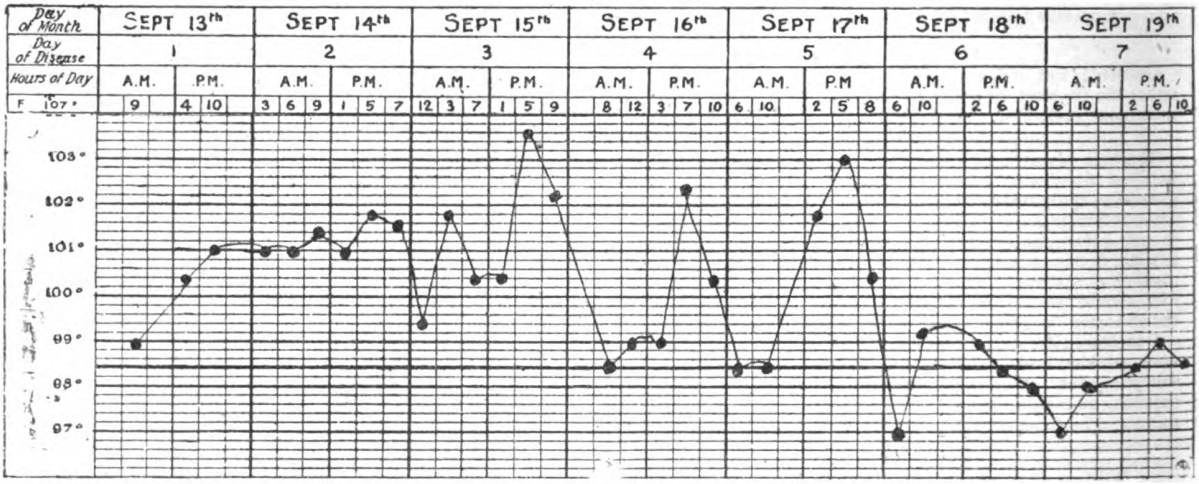


Chart showing course of temperature in the case of Mr. P. Thurburn Manson.

"*September 16th.*—I woke at 8 A.M. feeling quite well; my temperature was 98·4°. I made several blood examinations and found one doubtful half-grown tertian parasite. In the afternoon and evening there was a recurrence of fever (temperature 102·8°) relieved by sweating.

"*September 17th.*—I again felt quite well on waking after a good night's sleep; my temperature was 99°. At 10 A.M. several half-grown parasites, a gamete, and two pigmented leucocytes were discovered in the first blood film examined. During the day many tertian parasites were found. Their presence was verified by my father and by Dr. Frederick Taylor, Lieutenant-Colonel Oswald Baker, I.M.S., Dr. Galloway, Mr. Watson Cheyne, F.R.S., and Mr. James Cantlie, some of whom saw the films prepared. About 2 P.M. the sensation of chilliness returned (temperature 101·8°). By 5 P.M. the temperature had reached 103°. There was then copious sweating. The edge of the spleen could be felt on deep inspiration and there was a slight feeling of discomfort in the region of that organ. Dr. Frederick Taylor and Mr. Watson Cheyne confirmed the presence of splenic enlargement. By 9 P.M. the temperature had fallen to 99·2° and I was feeling better. Quinine (10 grains) was taken.

"*September 18th.*—I woke after a good night feeling perfectly well (temperature 97°). 10 grains of quinine were taken and subsequently five grains every eight hours. I continued perfectly well all day. A few three-quarter-grown tertian parasites and some gametes were found during the forenoon and afternoon; they were seen by Dr. Oswald

Browne, by my father, and by myself. At 10 P.M. the parasites had disappeared, the last being found at 5 P.M.

"*September 19th.*—No parasites were discovered. The temperature is normal. I am feeling quite well. There is no splenic enlargement and no tenderness. Appetite has returned.

"*September 25th.*—In good health. No recurrence of malarial symptoms."

EXPERIMENT II.

A wooden hut, constructed in England, was shipped to Italy and erected in the Roman Campagna at a spot ascertained by Dr. L. Sambon, after careful inquiry, to be intensely malarial, where the permanent inhabitants all suffer from malarial cachexia, and where the field labourers who come from healthy parts of Italy to reap the harvest after a short time all contract fever. This fever-haunted spot is in the King of Italy's hunting ground near Ostia, at the mouth of the Tiber. It is water-logged and jungly and teems with insect life.

The only protection against mosquito bite and fever employed by the experimenters was mosquito netting-wire screens in doors and windows and, by way of extra precaution, mosquito nets around their beds. Not a grain of quinine was taken. Dr. Sambon and Dr. G. C. Low, Signor Terzi, and their two Italian servants entered on residence in their hut early in July. They go about the country quite freely—always, of course, with an eye on anopheles—during the day, but are careful to be indoors from sunset to sunrise. Up to Sept. 21st, the date of Dr. Sambon's last letter to me, the experimenters and their servants had enjoyed perfect health, in marked contrast to their neighbours who were, all of them, either ill with fever or had suffered malarial attacks.

For the present I content myself with announcing this result. Complete details of their experiences will doubtless be made public by Dr. Sambon and Dr. Low at the termination of the malarial season and of their experiment at the end of October. Suffice it to say that these gentlemen express themselves as satisfied that protection from mosquito bite protects from malaria and that protection from mosquito bite is perfectly compatible with active outdoor occupation during the day.

It remains for the public to apply the lesson taught by these experiments. Will this be done? Already I have heard objections and difficulties mooted. I saw it advanced recently that it is impossible to avoid mosquito-bite in the tropics and that it was useless to try to do so. One has sometimes to go out in the evening; a medical man, for example, must visit his patient at any hour. This is quite true; but, surely, because we cannot escape a risk altogether this is no reason why we should not try to minimise it. Dr. C. W. Daniels, who has recently returned from British Central Africa, tells me that not one mosquito in a thousand in that country carries malarial zygotes—that is to say, is infective. If a man exposes himself, therefore, in British Central Africa to mosquito-bite habitually, so that he gets bitten, say, ten times every night, the chances are that he is effectually inoculated with malaria some four times a year; but if the same man systematically protected himself from mosquito-bite and, in consequence of his care, reduced the chances of being bitten to once a month he may be 100 years in British Central Africa before he gets infected. This minimising of risk is certainly worth striving for.

The question of expense cannot for a moment be entertained in discussing the means for protection. One life saved, one invaliding obviated, would, even in a pecuniary sense, pay for all the wire gauze and mosquito-netting requisite to protect every European house in West Africa.

These experiments, together with the work of Ross, Grassi, Celli, Bignami, Bastianelli, and other Italians, and the recent observations on native malaria by Koch and the representatives of the Malaria Commission of the Royal Society and Colonial Office, plainly indicate that the practical solution of the malaria problem lies (1) in avoiding the neighbourhood of native houses, the perennial source of malaria parasites; (2) in the destruction, so far as practicable, of the breeding pools of anopheles; and principally (3) in protection from mosquito-bite.

Queen Anne-street, W.

# PUERPERAL SEPSIS[1]

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PUERPERAL sepsis is nothing more or less than a surgical fever arising from the infection of a wound, the only differences being—(1) the large extent of surface liable to infection; (2) the structures involved; (3) the presence of a quantity of dead material which easily lends itself to infection; and (4) the fact that the patient is undergoing certain physiological changes, this, perhaps, making her more liable to infection. The different varieties of puerperal sepsis are as follows: (1) sapræmia, or septic intoxication due to a local cause; (2) septicæmia, or acute septic infection or acute sepsis; and (3) pyæmia. We shall consider these three conditions separately.

## I.—SAPRÆMIA.

Sapræmia is a fever due to the absorption of the products of decomposition from the parturient canal or due to the absorption of toxins produced by micro-organisms in the structures surrounding the parturient canal. It may be divided into different varieties according to the cause: (1) fœtid sapræmia; (2) suppurative sapræmia; and (3) inflammatory sapræmia.

1. *Fœtid sapræmia.*—This is due to the absorption of the products of decomposition in the parturient canal, and the materials which may decompose are the lochia, blood-clot, retained pieces of membrane, or portions of placenta. The symptoms of this variety are: first, a headache which often precedes the initial rise of temperature and pulse, which, as a rule, occurs on the third or fourth day succeeding the confinement but may occur later, and which is usually proportional to the quantity of decomposing material. The lochia of course are abundant and fœtid; the pulse, which is full and bounding, varies from 110 to 120, and the temperature varies from 101° to 103° F. The tongue at first is clean, but in a day or so it becomes heavily coated. The patient sleeps very well and has no pain, and on the second day of the fever the headache usually disappears. In severe cases the symptoms may be ushered in with a rigor, and if the case be allowed to continue without treatment the symptoms become aggravated and the patient's complexion becomes sallow. The milk function is not interfered with and perspiration is usually excessive. The treatment of this condition consists in efficient douching with creolin solution (half an ounce to one gallon of warm water) until the temperature falls to normal. If a vaginal douche be not sufficient to reduce the temperature and the rate of the pulse it should be followed the day after by a uterine douche, and in severe cases this should be administered twice daily. The diet should be generous and easily digestible. In cases, however, where in spite of douching the symptoms do not abate, and where there is reason to believe that some of the membranes or part of the placenta have been retained, a gentle curetting with Rheinstädter's flushing curette will be of service.

2. *Suppurative sapræmia.*—This is a sapræmia due to the absorption of toxins produced by suppuration on the surface of the parturient canal. It includes puerperal ulcer, either on the perineum, the vaginal wall, or on the cervix, suppurative colpitis, and septic endometritis. This condition is usually more sudden and severe than fœtid sapræmia, being generally ushered in with a rigor, with high temperature (from 103° to 105°) and very rapid pulse (from 120 to 150). There is no pain and the lochia are septic but not so abundant or foul-smelling as in cases of fœtid sapræmia. This condition may commence any day during the puerperium after the second, either independently of, or as a consequence of, fœtid sapræmia. The pulse and temperature continue high, and in cases where a small extent of surface is involved and is properly treated the temperature quickly falls to normal, usually by crisis; in other cases—especially in those of considerable septic ulceration of the vagina—the temperature may remain high for some days in spite of treatment, and then suddenly falls to normal by crisis. The tongue is heavily coated. The patient sleeps fairly well, takes her

[1] An introductory communication to the Northumberland and Durham Medical Society on March 8th, 1900.

food well, but generally feels ill. A puerperal ulcer may appear on the perineum, on the vaginal wall, or on the cervix, and always in the situation of a laceration. This ulcer is irregular in outline and its surface is of a dirty greyish appearance and secretes a small amount of highly septic pus. It can be easily seen by separating the vulva and looking at the perineum or examining the cervix by means of a speculum. The treatment consists in washing it three times daily with creolin or corrosive sublimate solution, dusting it with iodoform, and keeping a piece of iodoform gauze applied to it. The ulceration may, however, extend to the whole vaginal wall, causing the pulse and temperature to rise very high—the temperature from 104° to 106° and the pulse from 140 to 160. The treatment which answers best in this condition is similar to the last-mentioned—viz., douching twice daily with creolin solution and packing the vagina loosely with iodoform gauze. Stimulants are usually indicated (small doses at frequent intervals) and concentrated and liberal diet. Septic endometritis is the most fatal form of sapræmia. Its symptoms are much the same as those of a severe case of fœtid sapræmia and its treatment is somewhat similar. The question of curetting in this condition is still subject to discussion. Some authorities maintain that it is best to curette in order to remove the diseased endometrium, while others consider that, no matter how carefully it is performed, curetting will only remove part of the diseased endometrium, leaving a large raw surface for further infection, and the protective layer which is formed under the diseased endometrium is also removed,[2] predisposing to the spread of the septic processes into the connective tissue of the uterus itself and thereby causing a septic metritis or perhaps even acute sepsis. The method, however, recommended by Dührssen of douching and plugging the uterine cavity with iodoform gauze has met with the greatest success. Extirpation of the uterus has also been advocated by some authorities, but in the performance of this operation we are confronted with three grave dangers. The first is the condition of the patient herself prior to the operation, the second is the danger of infecting the patient during the operation, and the third is the impossibility of ascertaining whether the septic condition is limited to the endometrium or has extended into the surrounding structures. The results attained will perhaps teach us not to advise this operation. As a consequence of septic endometritis, salpingitis or puerperal pyosalpinx may supervene. This comes under the head of gynæcology.

3. *Inflammatory sapræmia.*—This is due to an acute inflammation of the vagina, uterus, or parametrium. This condition is invariably associated with considerable pain. In simple colpitis the vagina is red, hot, and tender, with pain on micturition and defecation, but the lochia need not necessarily be fœtid. Douching with weak creolin solution will give considerable relief. The bowels should be kept freely open. In cases of metritis there is considerable pain on palpating the uterus which is enlarged and the lochia are red and abundant. The treatment, besides occasional douching of the uterus, is chiefly symptomatic. Parametritis is an inflammation of the cellular tissue surrounding the uterus and of that between the layers of the broad ligaments. It is usually a consequence of metritis or of sepsis extending through a cervical laceration. The pain is referred to either iliac fossa, and a tender swelling can be felt bimanually on either side of the uterus. The patient may lie with either one or both legs drawn up, indicating that the inflammation has extended to the cellular tissue of the iliac fossa. It is often associated with pelvic peritonitis. The treatment consists in perfect rest, aperients, good, concentrated, easily digestible diet, syrup of the iodide of iron, or small doses of iodide of potassium internally, and tampons of cotton wool, permeated with glycerine and ichthyol (10 per cent.), placed daily in the vaginal fornix. Parametritis usually ends in resolution, but may break down into abscess.

## II.—SEPTICÆMIA.

Puerperal septicæmia, otherwise known as acute sepsis or acute septic infection, is an extremely fatal condition, but fortunately comparatively rare. It may arise independently or as a consequence of any of the preceding conditions. Its chief symptoms are an initial rigor occurring from 36 to 60 hours after the date of infection, with an extremely rapid pulse (from 140 to 160), which is weak and compressible; the temperature is irregular; in some cases it remains normal and in others it may rise to 106° or higher. Vomiting, sometimes uncontrollable, is a common symptom, and the patient has little or no desire for food. She is sleepless and restless and throws her arms about, and although she has an extremely anxious and pinched expression on her countenance yet she says "she feels quite well." This condition is known as "euphoria." The milk is absent or it rapidly disappears from her breasts, and the lochia are scanty or absent. The patient gets rapidly worse, the pulse disappearing altogether at the wrist and the conjunctivæ turning yellow shortly before death. The pathology of this condition is that septic micro-organisms get directly into the blood through the lymphatics, where they multiply by myriads, and the severity of the poison is so great that the sensorium is incapable of receiving impressions of pain and the patient feels and says she is quite well. In cases of septicæmia which are not consequent on septic conditions in or around the parturient canal death is so rapid that pathological conditions have not time to develop. Besides local treatment, such as douching and plugging the uterus with iodoform gauze, large doses of alcohol have been recommended with strychnine and digitalis, but no treatment has as yet been proved to be of any avail. The patient dies in from two to five days.

I dare say that the members of this society would consider me guilty of a grave omission if I did not mention something about what was supposed to be a panacea for this condition—viz., antistreptococcic serum. Well, I have never seen a true case of puerperal septicæmia treated successfully with this serum, neither have I ever read of one. I have seen, however, several cases of different forms of sapræmia treated with it without any beneficial result whatsoever, either transitory or permanent. I have also read a few reports of cases of different forms of puerperal sapræmia which were, in my opinion, wrongly diagnosed as puerperal septicæmia and treated by it with alleged good results which I believe were merely coincidences. In some of these cases great importance was attached to the fall of the temperature and the pulse which usually followed the injection of the serum. This might possibly have been due to the profuse diaphoresis caused by the serum and not to any beneficial result of the serum on the patient. I remember treating a patient about the beginning of 1899 who was very ill from puerperal sepsis. On a certain Sunday morning her condition was extremely grave and I decided to inject some antistreptococcic serum. I was, however, unable to obtain it until the following day, but I am happy to say that this patient anticipated me by having a normal temperature the following morning. Had I been fortunate enough to have had the serum at hand and to have used it that Sunday I might possibly have attributed her improved condition on the following morning to the use of the serum, and this case might possibly have figured in the annals of medical literature.

Now it appears to me, from the very small number of supposed successful cases reported and considering that the antistreptococcic serum is being and has been used very extensively throughout the British Islands and by the ablest obstetricians, that the good results claimed for it have not been sustained. I am also inclined to believe that these reported successes have been merely coincidences and especially so as these cases were apparently cases of sapræmia and not puerperal septicæmia as reported. I went into the shop of a well-known local druggist recently and asked if he kept any antistreptococcic serum. He said that he used to keep a quantity of it but that he did not keep it now as it was never asked for. From this fact, I suppose, puerperal septicæmia has entirely disappeared from this whole district.

## III.—PYÆMIA.

Pyæmia is due to the absorption of a septic thrombus in one of the uterine sinuses into the blood-stream by means of the veins. It may spread by continuity of the veins or septic emboli may form and be carried and lodged in any part of the body, causing localised purulent inflammations or abscesses. The symptoms may develop up to the twenty-first day following the confinement, or perhaps later, by a rigor which is usually followed by a succession of rigors. Its symptoms, sequelæ, and treatment are similar to those of surgical pyæmia.

Now, speaking generally, it is well to remember that any obstetrical operation—even the making of a vaginal examination—is similar to a surgical operation and the sources of infection are exactly similar. You will find it stated in Lusk's "Science and Art of Midwifery," which is one of

[2] Lusk: Science and Art of Midwifery, p. 666, Plate IV.

the very best of modern obstetrical text-books, that "the ordinary carriers of infection are unquestionably the unclean hands, instruments, utensils, clothing, wash material, and the like, which are brought in contact during or after labour with the genitals of the female." Now, this is perfectly true if we have a healthy patient to deal with, but I believe it is quite possible for an unhealthy patient to infect herself. By unhealthy I mean a patient suffering from a gonorrhœal vaginitis or other form of septic vaginitis, or a patient who has suffered on a previous occasion from some septic condition of the internal genitals.

I have not said much about the bacteriology of puerperal sepsis because this matter is at present undergoing investigation and definite conclusions have not yet been formed, and I do not think that until they are formed we can say anything definite as to the use or value of antistreptococcic serum. It is, I believe, possible to grow cultures of streptococci from some samples of this serum, and besides, by injecting a patient with a quantity of this serum it is quite possible to produce a condition known as antistreptococcic neuritis—a condition which has been observed not only in this country but also on the continent and which, if it occurred, would materially prolong the puerperium.

Now there are a few rules which, I think, if they were strictly observed would materially lessen the prevalence of puerperal sepsis.

1. The thorough disinfection of the patient's external genitals and the hands and forearms of the medical attendant and the nurse, prior even to a vaginal examination. It is very easy to understand how, when a vaginal examination is made with fingers which have not been thoroughly washed and disinfected, material may be carried into the vagina which will be rubbed off the fingers and remain there. This material may in some instances be washed away by the liquor amnii, but in a certain proportion of cases it will remain there and cause decomposition of the lochia or perhaps it may get into some of the fissures of the vaginal wall consequent on parturition and either set up acute inflammation or perhaps cause acute sepsis itself.

2. The abolition of routine ante-partum and post-partum douching. The three principal solutions used for this purpose are corrosive sublimate, creolin, and carbolic acid. Corrosive sublimate solution has no advantages over creolin solution and has several decided disadvantages. If it is used for ante-partum douching, besides washing away Nature's antiseptic lubricant[3] (the vaginal mucous secretion), owing to its astringent properties it hardens and corrugates the vaginal mucous membrane, predisposing to extensive fissuring of the vaginal wall and a large laceration of the perineum during parturition, thereby considerably increasing the danger of septic infection. When used post-partum it does not act as an antiseptic because the mercury unites with the albuminous constituents with which it comes in contact, forming an insoluble albuminate of mercury, which is inert. This remains adherent to the surface of the parturient canal, being absorbed into the system later, and causes severe diarrhœa or diarrhœa with melæna (symptoms of corrosive sublimate poisoning). Besides, by hardening the surface of the parturient canal it prevents the natural secretions from taking place, predisposing to subinvolution of the uterus and consequent metritis and endometritis. Creolin and carbolic acid solutions (half an ounce to one gallon) are quite free from these disadvantages. In giving a uterine douche it is not a question of the amount of harm you can do to the bacteria inside the uterus, as this must necessarily be associated with serious injury to the patient. It is more a question of washing away the bacteria out of the uterus, without at the same time doing further injury to the patient, consequently it is the quantity and not the quality of the douche which is important. Routine ante-partum and post-partum douchings are not only unnecessary but are often dangerous.

3. All instruments used during an obstetric operation should be aseptic and when not in use should be kept in aseptic cases.

4. The proper conduct of the third stage of labour. This means, briefly, conducting the third stage with the patient on her back, the obstetrician's hand on the fundus, and waiting until the placenta comes naturally into the vagina before expressing it. If the placenta does not come naturally into the vagina within half an hour massage may be used to the fundus and gentle expression. In case the membranes get caught the placenta should be lifted gently and the membranes twisted so as to secure their coming away entire. The placenta and membranes should be now examined and if any large piece of either be retained steps should be taken to remove it. The uterus should be well contracted before the binder is applied.

5. The strict limitation of vaginal examinations. In an ordinary case where there is no unusual delay one vaginal examination is sufficient, made after the rupture of the membranes to ascertain if there is a prolapse of the cord. Any further information, especially as regards the position of the fœtus, can be more easily and more accurately obtained by means of abdominal palpation.

6. The disuse of all so-called "aseptic lubricants." The use of lubricants is only a means of carrying infection into the parturient canal and preventing the infection from being washed away by the liquor amnii. Lubricants are absolutely unnecessary, just as they are unnecessary in performing an abdominal section except where the patient has sores on the vulva or vaginal wall, in which case a practitioner should use them for his own safety. The commonest so-called aseptic lubricant is carbolised vaseline. It has been proved to be a good culture medium for bacteria, the vaseline protecting the micro-organisms from the action of the carbolic acid. I once saw a large puerperal ulcer which I believe was directly due to the use of this lubricant.

7. The immediate suturing of all perineal lacerations, not only for the sake of the patient's comfort in after life, but also to diminish the extent of surface liable to infection.

Newcastle-on-Tyne.

[3] The Bacteria of the Vagina and their Practical Significance, by J Whitridge Williams, American Journal of Obstetrics, October, 1898.

## THE ETIOLOGY OF SCARLET FEVER.

BY WILLIAM J. CLASS, M.D.,
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IN the *Berliner Klinische Wochenschrift* of July 2nd and 9th there appeared an article by Adolph Baginsky and Paul Sommerfeld in which they announce the discovery of a micro-organism whose constant presence in the throat secretions and blood of patients suffering from scarlet fever causes them to believe that it is probably the causative factor of this disease. It is this article that has inspired me to a further communication, as well as a desire to present to the medical profession the evidence that has so far accumulated favouring the view that the diplococcus scarlatinæ, the germ discovered by me, is the cause of scarlet fever. The only notice taken by Baginsky and Sommerfeld of my investigations into the cause of scarlet fever is the statement that I had found a diplococcus resembling a very large gonococcus, which organism was considered by me as being the cause of scarlet fever. As the source on which this statement was based they mentioned a leading article on the subject which appeared in THE LANCET of Nov. 18th, 1899 (p. 1385). This article dealt with a preliminary report made on the subject under consideration. I mention this fact, not because I feel in the least hurt by receiving such scant consideration at the hands of Baginsky and Sommerfeld, but for the reason that if they had taken the trouble to read some of the later contributions by myself and others on the diplococcus scarlatinæ they would not have failed to notice the similarity in many particulars of this germ with the one whose discovery they announce. I do not presume to state positively that these two germs are identical—in fact, this would be almost impossible without having seen their cultures; but I will take the liberty to compare certain parts of the description of their organism with those made of the diplococcus scarlatinæ. The reader may then judge for himself whether there is any similarity or not. In order not to be accused of any inaccuracies or twisting of terms I shall give Baginsky and Sommerfeld's statements in German exactly as they appeared in their article. Before beginning this comparison, however, I will say a few words in regard to the term "streptococcus."

In recent medical literature it is quite common to find an organism described as a streptococcus when a culture shows short chains of three or four cocci mixed with single cocci. I have even seen an organism described as a streptococcus where an examination showed perhaps one or two short chains in a microscopical field filled with single cocci. It

appears to me that the term "streptococcus" should be reserved for an organism the cultures of which show the chain form predominating, the chains being well defined and not simply an accidental arrangement of three or four cocci of perhaps different size and shape. In ordinary life one would hardly call three pieces of iron, each of different size, when joined together a chain. This statement is made because we are about to deal with an organism that has been described as a streptococcus but which does not seem to conform with the proper conception of the term "chain coccus."

Baginsky and Sommerfeld describe the morphology of their germ as follows: "In direkten aus Blut in den Organen entnommenen Trockenpräparat erkennt man zu 2-3 gelagerte runde Keime, also Diplokokken oder kürzeste Ketten, hie und da auch wohl als Tetraden gelagert."[1]

In an article published by me[2] I made the following statement in regard to the diplococcus scarlatinæ under the heading "Morphology": "In young cultures grown from the blood of a scarlet-fever patient the germ is usually seen as a diplococcus, both segments of which are globular. Streptococcus forms are occasionally, though rarely, met with, as are also single cocci." "Tetrads are frequently seen and probably denote the beginning division of the organism." It would be very peculiar if two observers who have each examined over 300 cases of the same disease should find two entirely different germs whose morphology at the same time bore such close resemblance. So much for the primary blood examinations. As we continue our comparison certain discrepancies apparently appear. I shall again quote from the article by Baginsky and Sommerfeld: "Die Morphologie der so dargestellten Mikroben ist folgende; von wechselnder Länge; in solchen von 3-4 Individuen, indess auch in langen geschlängelten Ketten bis zu 50 Gliedern und darüber. Der Keim des Streptococcus ist meist kreisrund, zuweilen allerdings auch abgeplatten und zwar in der Richtung senkrecht zur Kette, so dass zwei mit den breiten Seiten aneinander liegen. Studiert man einzelne Glieder der Ketten genauer in gefärbten Präparaten so erkennt man vielfach Diplokokkenformen, indess nicht immer, andere erscheinen als kleinere oder grössere runde Körner. Die Form war, wie man erkennt, äusserst wechselnd und wandelte sich je nach den Medien, in welchen die Cultur weiter poussirt wurde. In direktem Präparat als Diplokokken aufgetretene oder als kurze Kettchen erscheinende Formen wuchsen in alkalischer Peptonbouillon zu langen Ketten, die z. Th. bei der Umzüchtung auf Agar und bei der Thierpassage sich wieder in kurze Ketten von 3—6 Gliedern umwandeln lassen. Hierbei variirte auch die Grösse des einzelnen Keimes aus demselben ursprünglichen Stamm in mannigfachster Weise."[3] In the article referred to[4] I made the following statement in regard to the morphology of the diplococcus scarlatinæ: "A diplococcus polymorphous in character, but resembling as ordinarily seen in slides made from fresh cultures grown on *my medium* (earth agar), a very large gonococcus. This biscuit-shaped appearance is best seen in specimens that have been but lightly stained. Tetrads are frequently seen, and probably they denote the beginning division of the organism. In very old cultures grown under favourable conditions it shows as an enormous coccus having a slight cupped appearance, the dividing line between the two portions being very indistinct in the more deeply stained specimens. By the division of the large diplococcus a number of smaller organisms are formed which group together and do not appear as diplococci during the very early stages of their growth." This description of the organism was made from cultures grown on earth agar, while that of Baginsky and Sommerfeld showing long chains was made from cultures grown in alkaline peptone bouillon (vide ante). It is of importance to remember this fact, as the morphology of the germ varies according to the medium in which it is grown. ("Die Form war, wie man erkennt, äusserst wechselnd und wandelte sich je nach den Medien, in welchen die Cultur weiter poussirt wurde.") It is this great variability in form when grown on other media than earth agar which caused me to think—as I mentioned in the article in the *New York Record*—during my early experience that the growth upon plain agar, &c., was a contamination. Jaques[5] who studied cultures of the diplococcus scarlatinæ grown on the ordinary media says in regard to its morphology: "This germ has a wide morphology. Sometimes one stage and then another will become accentuated according to the environment and nutrition. Sometimes conditions are favourable to its growth in chains and the culture will show streptococcus form. In another case it will grow as a staphylococcus and still in another as a diplococcus." This variability of form which characterises my germ, as well as that which Baginsky and Sommerfeld claim as a new discovery, is further shown by the description of the diplococcus scarlatinæ by Gradwohl,[6] who states that it shows no permanence of morphologic character, as well as by the following statement made by me in an article[7] on the subject: "This germ varies greatly in size and shape, and although the form usually seen in primary cultures grown on the earth agar is the diplococcus resembling a very large gonococcus, still a primary culture may show it in one of its other forms. In order to prove the identity of the organism it becomes necessary to make successive transplantations of the culture from one tube to another, allowing it to grow for a few days at the least before transferring to a fresh tube. The different forms can be best studied by beginning with a culture of the large diplococcus; by transferring a loop of this culture to another tube of earth agar and allowing it to grow for a few days and then making an examination of the growth it will be found to consist largely of tetrads; by the still further division of the tetrads in the next subculture small diplococci are formed, and through the division of these single cocci," &c. Another point of semblance between these two findings is the variability in virulence which both germs seem to possess in common.

Baginsky and Sommerfeld state: "Bei allen Thieren war die Virulenz eine äusserst variable"[8]; and again, "Die Virulenz der Kokken ist nicht nachhaltig und geht leicht verloren, verminderte sich zumeist schon erheblich nach wenigen Tagen."[9] This is a fact to which I have repeatedly called attention when speaking of the diplococcus scarlatinæ. I will not attempt to draw any comparison from the biologic characters of the two germs, as the following statement by Baginsky and Sommerfeld excludes such a course: "In unseren eigenen Culturen waren wir vergeblich bemüht gewisse Eigenheiten des Wachsthums in den einzelnen Stämmen zu fixiren; immer wieder variirte ebensowohl der einzelne Keim der Ketten in Form und Grösse, wie auch die Virulenz und selbst das biologische Verhalten in den Nährmedien, so dass wir die Differenzirung einzelner Formen schliesslich aufzugeben gezwungen waren."[10] In looking over the comparison made in the preceding remarks I think the reader cannot fail to be impressed with the fact that in all probability the germ found by Baginsky and Sommerfeld in their primary examinations was identical with the diplococcus scarlatinæ, as the description given of it by them and my description of the germ as seen in primary cultures have almost the same wording. Of course, a point of difference is that Sommerfeld and Baginsky, in the description of the growth of their germ on agar, &c., speak of it as a streptococcus, while this term cannot be applied to the diplococcus scarlatinæ as ordinarily seen. However this may be, the germ found by Baginsky and Sommerfeld in their primary blood examinations was certainly not a streptococcus but a

[1] "In a dry preparation taken directly from the blood in the organ micrococci are seen arranged in groups of two or three—that is to say, diplococci or very short chains; here and there also tetrads appear."—ED. L.

[2] New York Medical Record, Sept. 2nd, 1899.

[3] "The morphology of the microbes is as follows: of variable length; generally consisting of three or four units, but sometimes arranged in long twisted chains. The nucleus of the streptococcus is usually circular but sometimes flattened, and lying in a direction perpendicular to the chain, so that two lie with their broad sides together. On observing individual cocci more closely in stained preparations numerous diplococci are seen, which occasionally contain larger or smaller circular nuclei. As will be seen, the form was very diverse and varied according to the medium in which the culture was grown. In fresh preparations containing diplococci or short chains these microbes when inoculated in alkaline pepton-bouillon grow in long chains, which can partly be again changed to short chains when transferred to agar or passed through animals. At the same time the size of the individual cocci, though derived from the same source, vary greatly."—ED. L.

[4] New York Medical Record, Sept. 2nd, 1899.

[5] The Journal, May 26th, 1900, p. 1299.

[6] Philadelphia Medical Journal, March 24th, 1900, p. 682.

[7] New York Medical Record, Oct. 7th, 1899, p. 33.

[8] "In all animals the virulence was extremely variable."—ED. L.

[9] "The virulence of the cocci is not lasting and is easily lost; it is considerably lessened after a few days."—ED. L.

[10] "In our own cultures we endeavoured in vain to establish certain characters of the growth in separate generations; but again the individual units of the chain always varied in form and size as well as in virulence and even in the biological behaviour in the nutrient media, so that finally we were compelled to abandon the differentiation of individual forms."—ED. L.

diplococcus. As they themselves say: "Zu zwei bis drei gelagerte runde Keime, also Diplokokken oder kürzeste Ketten." If a germ which shows such an arrangement is a streptococcus, why, then, every known coccus is a streptococcus. In their further description they speak of chains containing 50 or more cocci being found in the bouillon cultures. Such lengthy chains my diplococcus scarlatinæ never forms, and from an experience based on the examination of hundreds of cases of scarlet fever I feel justified in stating that a long streptococcus, an organism to which the name streptococcus can be properly applied, cannot be found in cultures made from the blood of an uncomplicated case of this disease. If it is present it is a sign either that the case is not an uncomplicated one or that the culture is contaminated. The impression made upon me by the reading of Baginsky and Sommerfeld's paper was that they had in their culture the diplococcus scarlatinæ mixed in some instances with a long streptococcus the presence of which was accidental. Streptococci are present in the pharyngeal mucus of a certain proportion of cases of scarlet fever, but not by any means invariably, nor do they ever compose the bulk of the culture. So much for the present in regard to the discovery of Baginsky and Sommerfeld. Let us now consider the evidence in favour of the view that the diplococcus scarlatinæ is the cause of scarlet fever.

1. *Evidence showing that the diplococcus scarlatinæ is a germ not heretofore described.*—In March, 1899, at a meeting of the Chicago Medical Society, I presented a preliminary report, together with a demonstration of specimens of a germ whose constant presence in a series of about 30 typical cases of scarlet fever had led me to believe that it was probably the cause of this disease. This germ, when grown upon a medium especially devised by me, showed certain peculiarities in its morphology—very large gonococcus form—and growth whereby it could be distinguished from other germs. A very careful and exhaustive search in bacteriological literature made prior to this announcement had failed to show the description of any germ resembling the one described by me. Since this preliminary report was published I and others have further elaborated the matter without finding anything conflicting with it. It is true that the large gonococcus form is not a constant feature of this organism, nor did I ever claim this to be the case; but it is the usual form seen when grown on the earth agar and one which serves to distinguish it from other organisms. This form, if not present in the primary cultures, can always be obtained by successive transplantations on the earth agar.[11] A full description of the different forms of this organism appears in the June issue of *Medicine* and in the *New York Medical Record*, Sept. 2nd, 1899. Numerous findings of diplococci and streptococci in scarlet fever had been recorded before I announced my discovery, and may give rise to the view that I presented nothing new. While it is possible that some of these discoverers really had the diplococcus scarlatinæ in their cultures they at best only described one of its forms, and none prove the constant presence or the relationship of the germ to the disease. Neither did they reproduce the disease or show any way by which the germ could be distinguished from others. Thus Crajkowski[12] in 1895 announced that he found diplococci in the blood of 16 cases of scarlet fever; this organism presented nothing characteristic, nor did Crajkowski follow up his examination as far as can be seen by searching the literature on the subject. That the diplococcus scarlatinæ is a *new* germ is further shown in an article by Gradwohl,[13] who gives a very good description of its biological characters.

2. *Evidence showing that the diplococcus scarlatinæ is constantly present in scarlet fever.*—The presence of this germ in cases of the disease has been well proved. Thus Gradwohl[14] found it in seven consecutive cases and Jaques[15] demonstrated its presence in every one of a large number of cases examined. I myself announced before the Chicago Pediatric Society in December, 1899,[16] that I had found it in 300 successive cases of scarlet fever and scarlatinous sore-throat. Page[17] of Boston announced that he had found a germ corresponding to the description of the diplococcus scarlatinæ in a number of cases. Besides these published findings I have personal knowledge of its having been found in the blood, throat secretions, and scales of scarlet fever patients by a number of other competent observers whose results have not as yet been published. These results have been so uniform that I am absolutely certain of my ability to demonstrate the presence of the diplococcus scarlatinæ in the blood, throat secretions, and scales of every typical case of scarlet fever given me for examination.

3. *Evidence showing that the diplococcus scarlatinæ is a pathogenic micro-organism.*—This germ is pathogenic for mice, swine, and guinea-pigs. Mice are most susceptible, and a small quantity of a virulent culture injected subcutaneously will sometimes kill the animal in an hour's time. As a rule, death takes place within 12 hours of the time of inoculation. Swine, as a rule, show no reaction from the subcutaneous injection unless a very large quantity of a virulent culture is used. Swine are known to be insusceptible to the influence of most pathogenic germs when injected subcutaneously. Even the bacillus of hog cholera produces but little effect when administered in this manner; therefore it is not surprising that the diplococcus scarlatinæ is not very pathogenic when injected subcutaneously. Intra-abdominal injections give rise to grave symptoms, and if a sufficient amount of a virulent culture is used it will cause the death of the animal. The usual method which I have used in order to produce typical symptoms of scarlet fever in swine has been to inject a culture grown on agar and mixed with sterilised water directly into the circulation. For this purpose either the ear veins or the femoral veins were used. The amount of culture used for these experiments varied according to its virulency; usually, however, one cubic centimetre was sufficient, and in some instances caused the death of the animal a few days subsequent to its injection. Guinea-pigs usually succumb to the intra-abdominal injection of 0·1 cubic centimetre of a virulent culture. During the first few days after inoculation these animals usually showed but little signs of sickness; then they began to refuse food, gradually became more and more emaciated, and death occurred as a rule from 10 to 14 days after the injection was made. Subcutaneous injections generally were without result. These observations have to a great extent been verified by the experiments of Gradwohl.[18] Rabbits and white rats appear to be but slightly, if at all, susceptible, while cats and dogs are immune. The diplococcus could, as a rule, be easily obtained from the organs of the susceptible animals after death and from their blood during life. Cultures taken from the blood of the ventricles and from the spleen generally showed a pure growth.

4. *Evidence showing that scarlet fever can be reproduced in animals by the diplococcus scarlatinæ.*—The diplococcus scarlatinæ is the first germ that has ever been discovered through whose agency a disease has repeatedly been produced, which has been recognised by competent men as being apparently identical with scarlet fever as it appears in human beings, so far as the rash and scaling are concerned. The animals used to reproduce the disease were white swine. When such an animal receives an intravenous injection of a virulent culture of the diplococcus scarlatinæ it will usually sicken within a few hours, there will be a rise in temperature, the animal will become restive and refuse food; after three or four days, as a rule, a decided reddening of the skin will appear, which lasts from one to two days, to be followed within a week to two weeks by profuse scaling. Sometimes the eruption is more of a papular character and the reddening not well marked, but usually it can be easily demonstrated, especially if the colour of the animal is compared with that of one in good health. The disease has been reproduced by the writer in a considerable number of swine, the number being large enough to exclude the possibility that it was merely an accidental phenomenon. These results have been further verified by Gradwohl[19] and Jaques.[20]

5. *Evidence showing that the pathologic changes in the organs caused by the diplococcus scarlatinæ resemble those of scarlet fever.*—As an example of the gross changes produced by the diplococcus scarlatinæ I will give a brief statement of the findings in a young pig which was inoculated in the pathological laboratory of Rush College on Feb. 17th, 1900. About one cubic centimetre of agar culture was rubbed up with five cubic centimetres of sterilised water and injected into the femoral vein. On the 24th the animal was found dead and on post-mortem examination the following changes

[11] New York Medical Record, Oct. 7th, 1899, p. 33.
[12] Centralblatt für Bakteriologie, 1895.
[13] Loc. cit.
[14] Loc. cit.
[15] Loc. cit.
[16] The Journal, Feb. 24th, 1900.
[17] Journal of the Boston Society of the Medical Sciences, June, 1899.
[18] Loc. cit.
[19] Loc. cit.
[20] Loc. cit.

were found: "Spleen is enlarged and congested; Malpighian bodies stand out prominently. Kidneys show cortex pale in colour, with a few small hæmorrhages near surface; capsule comes off easily; pelvis of kidney is congested and drips blood on section; pyramids stand out plainly. Liver shows numerous whitish necrotic areas and is congested; blood drips on cutting. Lymphatic glands of neck are enlarged, varying in size from a Lima bean to that of a hickory nut. Slight amount of effusion appears between layers of pericardium. Walls of intestine are congested and show numerous hæmorrhagic spots. Other organs are apparently normal." The mice and guinea-pigs that were examined post mortem also usually showed gross signs of nephritis. In regard to their other organs nothing positive could be stated on a macroscopical examination. The organs of a considerable number of animals were preserved for microscopical examination the results of which will be reported later. Gradwohl has confirmed the occurrence of nephritis in swine and guinea-pigs after inoculation with the diplococcus scarlatinæ.

6. *Evidence showing that the disease produced through the agency of the diplococcus scarlatinæ is of a contagious nature.*—There are a number of facts on record which go to prove that this germ produces a contagious disease. Thus, Jaques[21] stated that when a healthy pig was placed with two pigs that were scaling after having been inoculated with the diplococcus it developed a rise in temperature lasting several days, followed by scaling, thus showing that it had evidently contracted the disease by contact. Gradwohl, in an article previously quoted, states that if a healthy mouse be put in a cage in which another mouse that has been inoculated with the diplococcus scarlatinæ has been kept the healthy mouse will sicken and die and will show the diplococcus scarlatinæ in its organs post mortem. I have seen similar results occur a number of times while carrying on my own experiments, and I think that it must be admitted that the contagious nature of the disease produced is extremely suggestive and speaks strongly in favour of the claim that the diplococcus scarlatinæ is the causative factor of scarlet fever.

7. *Influence on blood of scarlet fever patients on the activity of the germ.*—Under this heading I will quote a few experiments described in a paper[22] by me, to wit: "A loop of pure culture of the diplococcus was diluted with 15 minims of distilled water. One-half of this was poured over a plate of glucose-agar; to the other half were added 10 drops of blood from a patient who had just recovered from an attack of scarlatina, and this mixture was poured over a similar plate. Both were put into an incubator, the temperature of which was kept at about 36° C. At the end of 24 hours the plates were removed. The plate made from the culture without the addition of the blood showed innumerable minute colonies of the diplococcus, while on that to which the blood had been added there were only a very few colonies. Presumably these had grown, because from the tendency to clump some of them had not been exposed to the action of the blood. This experiment was repeated five times with almost identical results. Each time there was a slight growth of the culture to which the blood had been added, but the growth was so much more profuse in the one without this addition that the inhibitory action of the scarlet fever blood on the growth of the germ could be plainly demonstrated. Blood from a child five months old where the possibility of a prior infection with the germ could safely be excluded produced no inhibitory action. The other experiment consisted in inoculating four ordinary grey mice, each of which received five minims of a solution of a virulent culture of the diplococcus scarlatinæ in distilled water. Two of the mice had previously received by subcutaneous injection five minims each of blood serum taken from a patient recently recovered from scarlet fever. The two animals that had not received the blood inoculations died within 18 hours, while of the two that had been injected with the blood one lived about 40 and the other 72 hours." These experiments have since been repeated a number of times with practically the same result. In making the first set of experiments quoted it was also necessary to use a virulent culture, as one that has been grown a long time on artificial media is not so sensitive.

8. *Finding of the diplococcus scarlatinæ in throat secretions of patients with scarlatinous sore-throat, a further proof of its specific character.*—In an article on the etiology of acute tonsillitis[23] I made the following statement regarding the diplococcus scarlatinæ: "It is not only invariably present in the angina of scarlet fever, but during an epidemic of this disease it will frequently give rise to an acute tonsillitis without any eruption, although not infrequently these cases are followed by a nephritis and sometimes by desquamation. It may sound like a bold statement to make, nevertheless I am fully convinced that a person who has had an attack of acute tonsillitis due to the diplococcus scarlatinæ is rendered immune against scarlet fever, or, in other words, that this form of angina is nothing more or less than scarlet fever without the presence of an eruption." And, further, "the contagion from a case of scarlatinous sore-throat is capable of giving rise to typical scarlet fever in another person who has been exposed to it." The occurrence of scarlatina sine eruptione is something that has for a number of years been accepted, more or less generally, but it could not be proved positively, as the causative germ of scarlet fever was not known. Admitting for the present that the diplococcus scarlatinæ is the cause of scarlet fever it will be found that during an epidemic of this disease cases of scarlatina sine eruptione are of far greater frequency than has generally been supposed to be the case. Your sceptic may cry out that the finding of the diplococcus scarlatinæ in so many cases of apparently simple sore-throat speaks strongly against its being a specific micro-organism. On the contrary, it is just this fact which goes a long way to prove its specific nature. If it was only present in typical cases of scarlet fever how could we explain those cases in which one child in a family has scarlet fever while several others at the same time develop only a tonsillitis, followed perhaps by nephritis and desquamation? The contagion must necessarily be the same, for frequently these cases of angina give rise to an attack of typical scarlet fever in another member of the family. Furthermore, if these cases of angina were not scarlatina sine eruptione, how could we account for the fact that so many people escape scarlet fever? The finding of the diplococcus shows that they had in the majority of instances been rendered immune by an attack of angina caused by this germ and that the eruption of scarlet fever is simply one manifestation of the activity of this micro-organism. The presence of an eruption is not absolutely necessary to make a diagnosis of scarlet fever, however inconsistent this may seem when the name of the malady is considered.

9. *Growth in milk without affecting this medium a fact in favour of its being the cause of scarlet fever.*—In speaking of the diplococcus scarlatinæ a leading article in the *Interstate Medical Journal*, March 1st, 1900, states: "It is interesting to note in the description of the biologic characteristics of this diplococcus scarlatinæ that the micro-organism grows in milk, but does not produce any visible change in it, such as coagulation or digestion, &c. This will serve to explain the dissemination of this disease, which has been from time to time traced to the infected milk. It is important from a public health standpoint. And the fact that cows are known to be susceptible to scarlet fever, taken into consideration with the fact that the diplococcus scarlatinæ is probably excreted in the milk of these animals, will explain how this milk which spreads the disease is infected. Of course, it might also be infected by means of contamination with the hands of patients with scarlet fever or from milkers or dairymen in whose families scarlet fever is present."

10. *Finding of the diplococcus scarlatinæ in cases of surgical scarlet fever demonstrates its diagnostic value.*—In the May number of the *Chicago Medical Recorder* for 1900 there appeared a report of a case of double crypto-orchidism complicated by scarlet fever by Dr. Edward Ochsner. The patient 18 hours after the operation for the relief of his trouble suddenly developed a high temperature together with vomiting. On the following morning the patient showed a scarlet rash all over his body. The only things that had come in contact with the patient prior to the appearance of the rash were saturated solutions of boric acid and alcohol dressings, no iodoform being used. The question naturally arose whether the rash was of a simple septic nature or true scarlet fever. I made cultures from the blood, obtaining a pure growth of the diplococcus scarlatinæ. A similar finding was obtained from the patient's urine, which showed traces of albumin. Subsequently the patient scaled. Since the publication of the above report I have again had an opportunity to examine blood and throat cultures taken from a patient

[21] Loc. cit.
[22] The Journal, Feb. 24th, 1900.
[23] Interstate Medical Journal, March, 1900, p. 120.

developing a sudden rise in temperature and scarlet rash after a slight operation upon the heel. The result of the examination of these cultures also showed the case to be one of scarlet fever. I mention these cases because in all probability a large number of cases of so-called septic rashes are nothing more or less than true scarlet fever.

In concluding, I wish to state that all the experiments quoted are open to investigation and that I feel confident that unprejudiced and painstaking investigators will further confirm what has been said. Allowing that these statements are based upon facts, I think it must be admitted that the diplococcus of scarlatinæ fulfils all of Koch's laws and is therefore entitled to some consideration at the hands of those engaged in a search for the solution of the etiology of scarlet fever.

Chicago.

# A LYMPHATIC ANÆMIA MET WITH IN CHILDREN.

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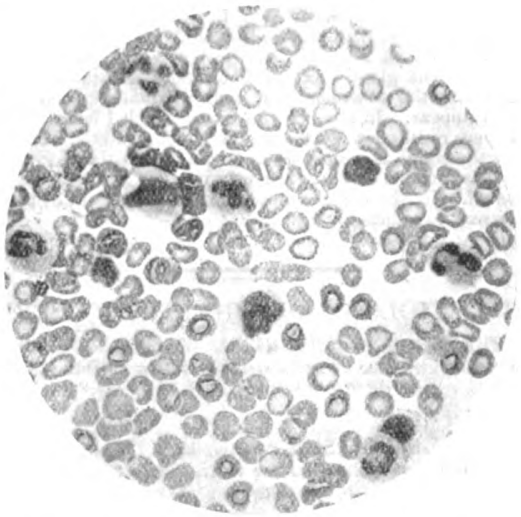
NEITHER in any special work on the diseases of children nor in any work on systematic medicine have I been able to find an account of, or any reference to, a form of anæmia which is not uncommon in children and which, I believe, is never met with in the adult. The following short description of the characteristic signs and symptoms of the disease may therefore be found of sufficient interest to be worthy of a place in the pages of THE LANCET.

The disease is one of childhood and the signs and symptoms are so characteristic that it cannot be mistaken for any other form of anæmia or affection of the lymphatics. Of 23 cases of which I have taken notes during the last few months the ages range from three to 16 years and 18 of these patients were between three and 11 years of age. As to sex, 19 of the patients were boys and four were girls. In no case have I been able to find a history of an acute stage or sudden onset. The disease runs a very chronic course and recovery is the rule. The history of the cases shows that the glandular affection is in no way connected with those enlarged glands which usually become (or are from the first) tuberculous, and the characteristic adenitis and the chronic course mark it sharply off from glandular fever. The anæmia may or may not be very marked, but it is, of course, readily recognised; the adenitis is always marked, but it is easily overlooked because none of the glands are large enough to attract the eye. The form of adenitis and the groups of glands affected are characteristic of the disease. The glands are small and hard, and they are always numerous in the cervical triangles and in the groins. The axillary glands are never affected. That the bronchial glands are frequently, if not always, enlarged one may safely infer from the fact that cough is in many cases a troublesome symptom when there is nothing in the lungs to cause it. The mesenteric glands are probably also affected but abdominal symptoms are rare. In a large proportion of cases the spleen is distinctly increased in size. Catarrhal pneumonia of one or both bases is not uncommon; in one of the cases there was pleural effusion and in another there were well-marked signs of thickened pleura. Examination of the blood shows a decrease of the red and a large increase of the white corpuscles, and of the latter the increase of the large uninucleated corpuscles is very striking. This is well seen in the accompanying illustrations.[1] Normally, it is said, lymphocytes form from 15 to 20 per cent. of the white corpuscles, the large uninucleated from 6 to 8 per cent., the multinucleated from 70 to 80 per cent., and the eosinophilic from 2 to 4 or 7 per cent. I have stained a large number of films of the blood of children suffering from this lymphatic anæmia and on counting the leucocytes have found that the lymphocytes formed from 12 to 13 per cent., the large uninucleated from 20 to 39 per cent., the multinucleated from 41 to 63 per cent., and the eosinophilic from 2 to nearly 7 per cent. The increase of the large uninucleated corpuscles from 6 to 39 per cent. is thus seen to be very marked. In two cases the multinucleated and the large uninucleated corpuscles were present in practically equal numbers, and very few small lymphocytes were seen. The blood films were stained with eosin and hæmatoxylin, and the illustrations show two typical fields.

[1] The Diseases of the Blood. By Alfred C. Coles, M.D.

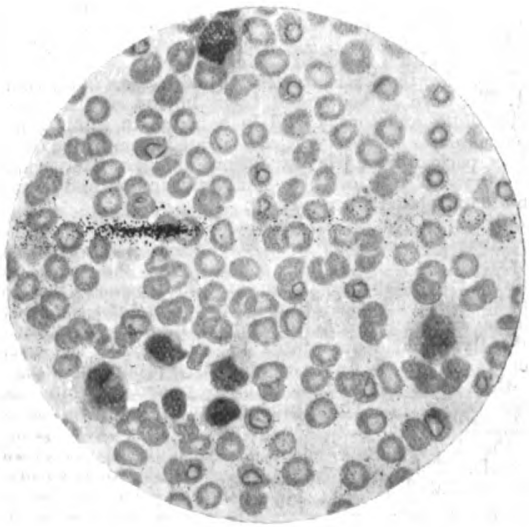
FIG. 1.



Shows five multinucleated, four large uninucleated corpuscles, and one small lymphocyte.

With regard to the family history in five cases a parent or one of the other members of the family suffered from phthisis, and in eight cases phthisis appears in the history of the grandparents, uncles, or aunts. Otherwise nothing of interest was noted in the family histories, and some of the most typical cases showed no trace of any direct or indirect connexion with tuberculosis.

FIG. 2.



Shows five large uninucleated corpuscles and two lymphocytes.

As to the signs and symptoms they are so characteristic that it would be uninteresting and tedious to quote cases in detail. There is always a history of gradually failing health, the child becomes listless and easily fatigued, loses flesh, and becomes anæmic. Cough is frequently a troublesome symptom and it is usually worst at night; occasionally there are night sweats. There is great loss of appetite; the tongue

is as a rule clean, and the bowels are usually constipated. In a typical case the cervical triangles are packed with small, hard glands, and in the groin a chain of similar glands is always found along Poupart's ligament. Then in most cases the spleen is distinctly enlarged.

With regard to treatment, arsenic and iron naturally suggest themselves as the best remedies and on these, with cod-liver oil occasionally given in addition, the patients usually do well. Improvement is slow in all cases, but as a rule the appetite rapidly improves, the child regains his naturally bright spirits, is not so easily fatigued and becomes less anæmic. The glands, except in a few cases, are not readily affected by the treatment but they gradually become softer and disappear. In none of the cases which I have watched has there resulted a local or general tuberculosis. In many cases the cough is a most troublesome and obstinate symptom and it is difficult to convince parents that the lungs are not affected. In those cases a sedative mixture at night may be necessary to secure undisturbed sleep.

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# THE ETIOLOGY OF RHEUMATIC FEVER

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(*Concluded from p. 869.*)

## GENERAL CONCLUSIONS AND REMARKS.

*Concerning the isolation of the diplococci.*—1. We have demonstrated these diplococci in eight successive cases of acute rheumatism. 2. They have been present in five cases in pure culture. 3. We have obtained them (*a*) from the blood of living patients suffering from acute rheumatic pericarditis; (*b*) from the pericardial fluid and from the fragments of granulations removed from the valves after death; and (*c*) from the throat of the living patient suffering from rheumatic tonsillitis.[1] 4. We have isolated them and grown them in an acid medium and also upon blood agar. 5. They have also grown in the pericardial fluid which we proved on those occasions to be acid. 6. They do not thrive on ordinary media. 7. We have isolated them in pure culture from the joint exudation, heart blood, urine from the bladder, and cerebro-spinal fluid of rabbits that have been inoculated with a sufficient dosage.

*Concerning the demonstration of the diplococci in the tissues.*—1. We have demonstrated them in the cardiac valves, pericardium, and tonsils, and in a nodule in fatal cases of rheumatism.[2] 2. We have demonstrated them in the cardiac valves, pericardium, joint exudation, kidneys, liver, connective tissues, pleuræ, cerebro-spinal fluid, lungs, and urine of rabbits inoculated intravenously.

*Concerning the results produced by inoculation of these organisms intravenously into rabbits.*—1. They produce a polyarthritis, bursitis, and tenosynovitis. 2. This polyarthritis may completely disappear. 3. In some of the joints that have been affected for a considerable time the fluid is opaque and contains fibrin, endothelial cells, mononuclear and polynuclear leucocytes. In other joints the exudation is clear. 4. In one case they produced a paresis of the lower extremities which passed off in about three weeks. 5. They produce multiple valvulitis and pericarditis, both non-suppurative. 6. They produce in the liver and kidneys a condition of coagulation necrosis. This in the case of the kidneys chiefly occurs in the convoluted tubules. 7. They produce plastic pleurisy and pneumonia. 8. The urine is acid and loaded with urates. 9. They have not produced suppurative foci in the viscera. 10. They produce in the myocardium a condition of fatty degeneration and destruction of the muscle fibres analogous to that found in the human heart as a result of severe rheumatic carditis. 11. The clinical symptoms are characterised by multiple painful joint swellings, wasting, with (in the less severe cases) a maintenance of the appetite. There is moderate pyrexia. 12. The heart is affected early; tachycardia, dyspnœa, and irregularity of cardiac action, together with valvular murmurs, pericardial and pleural friction, have all been observed. 13. The clinical symptoms are, on the whole, remarkably constant when the organism is passed from animal to animal, though the tendency is for increase in the severity of the cardiac lesions and diminution in the arthritis.

[1] Since the completion of this paper we have twice isolated them from the urine of a patient suffering from acute rheumatic pericarditis and have demonstrated them in the pleural exudate.

[2] Ibid.

## I.—THE MORPHOLOGY AND OTHER CHARACTERISTICS OF THE DIPLOCOCCUS.

We are not as yet in a position to state fully the morphological characteristics of this micro-organism. Our research has been concerned more especially with the elucidation of the symptoms and morbid changes that are the result of their access to the living body. We have, however, ascertained the following details.

1. They are minute cocci associated in pairs, the individual elements of which vary somewhat in size but average 0·5 $\mu$ in diameter, as measured by Zeiss's micrometer eyepiece.

2. In liquid media they grow in chains of varying length. In solid media they grow in masses that resemble the arrangement of staphylococci.

3. They grow both aerobically and anaerobically. They may be cultivated upon ordinary media but do not thrive and rapidly lose both their virulence and characteristic appearances. When isolating them from the tissues we have succeeded best with a medium of milk and bouillon slightly acidified with lactic acid, and, on the whole, the anaerobic tubes have proved more suitable to them than the aerobic. When they have been isolated they grow well upon blood agar aerobically at a temperature of 37° C., at which temperature the milk tubes were also incubated. Upon blood agar they form in 24 hours small, raised, yellowish-white, discrete colonies, the average size of which is 0·456 millimetre. The colonies are more or less circular and have, under a high magnification, a slightly granular appearance. By transmitted light they show a darker centre.

4. They stain with the various aniline dyes, though by Gram's method they are easily decolourised. The stain which we have used for them in the tissues and which has given the best result has been carbol-thionin. The metachromatism that is produced with this stain has assisted us in differentiating them from the tissues in which they were lying, for when deeply stained they appear a deep blue, whereas the tissues are usually a light blue or have a red tinge.

## II.—THE RELATION OF THESE DIPLOCOCCI TO THOSE ISOLATED BY OTHER OBSERVERS.

There can, we think, be but little doubt that these diplococci are identical with those discovered by Triboulet in 1897 and by Wassermann in 1899. Triboulet isolated them from the blood in acute rheumatism and grew them anaerobically. He also produced in one instance a valvular lesion in a rabbit but did not produce polyarthritis. In spite of this absence of joint lesions he thought these diplococci were the cause of rheumatism. Wassermann originally isolated them after death from a case of rheumatism and produced polyarthritis and tenosynovitis in a series of rabbits. He grew them best on a strongly alkaline medium aerobically, but did not apparently obtain any valvular lesions. In addition to the isolated lesion obtained by these observers the entire picture of rheumatic fever resulted in our cases. We have succeeded with acid but failed with strongly alkaline media.

## III.—IS THIS ORGANISM THE CAUSE OF RHEUMATIC FEVER.

In the face of the statements by Achalme, Thiroloix, Bettencourt, Litten, and others, we cannot claim that this diplococcus is the only cause of rheumatic fever. More extended observations will doubtless settle this most important point. That it is one cause we believe to be proved to all practical purposes by this investigation and we believe it highly probable that it will prove to be the cause of all cases of rheumatic fever which conform to the usual type of the disease, for the disease in man, as we have insisted before, is a very definite one and therefore probably caused by a specific micro-organism.

## IV.—THE CLINICAL LIKENESS BETWEEN RHEUMATIC FEVER AND THE DISEASE PRODUCED BY THE DIPLOCOCCUS IN RABBITS.

The resemblance between the disease produced in rabbits and the rheumatic fever of man is, we think, a very striking one. There is moderate pyrexia and wasting, and the

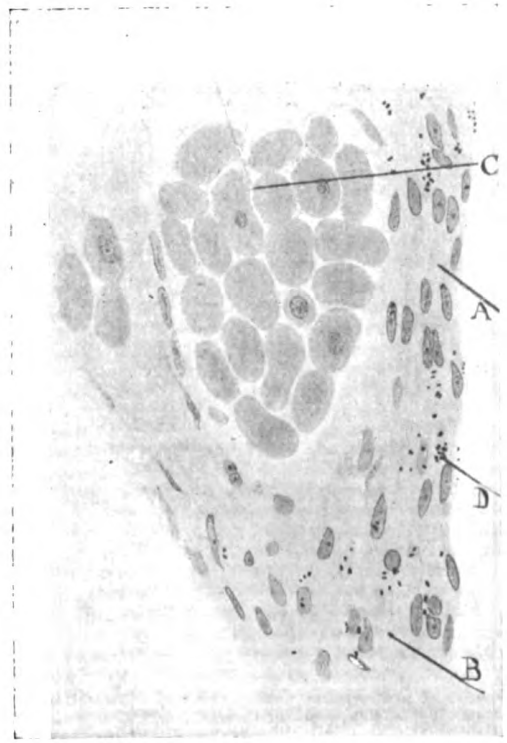
occurrence of a painful polyarthritis, which is metastatic and may entirely disappear. The tissues around the joints, such as the tendons and bursæ, are also affected, and the large joints are especially liable to this arthritis. The heart is affected early, even before the joints or irrespectively of the joint-affection. In the severe cases there occur pericarditis, valvulitis, pleurisy, and pneumonia, and the myocardium suffers as it does in acute rheumatism. The urine is acid and loaded with urates. There is no suppuration in the viscera and the peritoneum escapes as it does, as a rule, in rheumatism. In one case following the arthritis there occurred a passing weakness of the hind limbs. We do not venture to explain this, but think it suggestive of paralytic chorea.

The course of the disease is, as in rheumatic fever, prolonged and inclined to recovery unless the dose is a large one. Finally, there is a tendency to exacerbations of symptoms similar to those so frequently observed in the rheumatism of childhood. In this it is well known that even when progress seems to be satisfactory there may be, without assignable cause, a sudden exacerbation of symptoms which may almost as quickly disappear; in the rabbit also these variations may be noticed.

## V.—THE DEMONSTRATION OF THE DIPLOCOCCUS IN THE TISSUES.

The demonstration of these organisms in the human tissues is not easy. We think that one reason for the difficulty lies in the fact that rheumatic fever is essentially a disease to which there is great resistance. Even in fatal cases the reparative processes are often well advanced at the site of some of the local lesions. Such tissues, too, as the granulations upon valves, the nodules, and the pericardial exudation are among the more difficult of the structures that require investigation under the highest powers of the microscope. The micro-organism, again, is a very minute one and often present in compact masses which are liable to be mistaken for Mastzellen. Their discovery in the rabbit is far easier, for the animal can be killed early in the disease, and it is a point of great interest that numerous diplococci can be demonstrated in the pericardium before any cellular reaction of consequence has had time to develop. The animal tissues have afforded us the very greatest assistance both in localising the diplococcus and in getting a true picture of its appearance in the viscera.

FIG. 6.




A section through the endocardium part of the heart wall and base of the mitral valve of a rabbit. During life there were evidences of pericarditis and valvulitis with well-marked polyarthritis. The necropsy verified the clinical diagnosis. A, The endocardium. B, The base of the valve. C, Transverse section of cardiac muscle. D, The diplococci. Stain, carbol-thionin.

We are not at present in a position to state with confidence the number of diplococci that are present in the human tissues, but have good reason to believe that at some period of the illness they are present in large numbers. Usually they are seen in small clumps, but when they reach a free surface they are sometimes in large masses, although the individual diplococcus is very small. In the short description that is given below of their occurrence in particular regions, such statements as are made are supported by the proof of microscopic demonstration.

1. *Occurrence in the heart.*—The valves of the heart are attacked from within and the diplococci are not at first found upon the surface (Figs. 6 and 7). In both man and rabbits we have examined valves in a very early stage of the local disease and found the diplococci beneath the endocardium in the substance of the valve and at the base in the region of the valve ring. When the connective tissue proliferation they produce in the valve becomes a granulation and breaks down then they may be found on the surface; they may also be found in the connective tissue cells of the valve and chordæ tendineæ. It is especially difficult in our experience to demonstrate them in the necrotic material of an early granulation. They are found in man in the deeper part of the visceral pericardium, in the fibrino-cellular exudation, and in the parietal pericardium. In the rabbit they can be seen in the visceral pericardium and in the parietal pericardium following the course of the blood-vessels. In the heart-wall they are seen sometimes in the areolar tissue near the blood-vessels in the intermuscular septa. In the very earliest stages these organisms can be discovered in these tissues without having apparently caused any reaction, but a proliferation of connective tissue-cells and a free exudation of leucocytes is usually easily recognised as a result of their presence. During the acute phase of rheumatic pericarditis they circulate in the general blood-stream (Figs. 8 and 9).

FIG. 7.

Section showing micro-organisms in the mitral valve from a case of chorea with acute endocarditis. The endothelium is intact and the organisms are invading the substance of the valve from within. × 2100 times.

2. *Occurrence in the nodule.*—The discovery of the diplococci in the rheumatic nodule is, we think, of especial interest, for this lesion above all is looked upon as highly characteristic of rheumatic fever. It is a strong point in favour of the view that these diplococci are the cause of the symptoms of rheumatic fever. Further, it completes the proof of the analogy of this lesion with the valvular and pericardial inflammation—an analogy which has been long suspected by clinicians. In the rabbit the connective tissues near the affected joints are sometimes swollen and gelatinous. In one case a nodule appeared over a vertebral spine and after a month gradually disappeared. Sections of the tissue in this condition show the three zones that are

found in the rheumatic nodule. This series of changes in these tissues is a strong support of the views expressed by Dr. Poynton and Dr. Still in the Transactions of the Pathological Society of London for 1899 upon the Structure of the Rheumatic Nodule.

3. *Occurrence in the kidney.*—This we believe to be one of the most interesting aspects of the subject and we briefly recapitulate here the chief facts that have come to light.

FIG. 8.

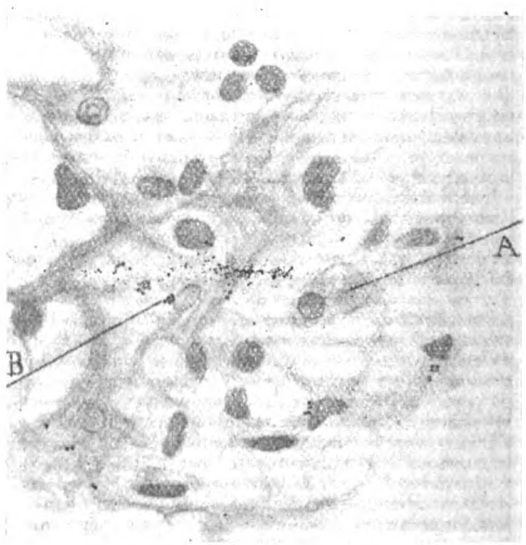
A part of the parietal pericardium of a rabbit stretched out and stained. The diplococci are distinctly seen. A, In the blood-vessel. B, In the wall of the vessel. C, In the pericardial tissues external to the vessel. They are arranged mostly in the small clumps which are so frequently seen both in the human and other animal tissues. Stain, carbol-thionin. The rabbit died from pericarditis and valvulitis.

In the first place, there is the definite proof of their occurrence in the kidneys of rabbits after death. They are found especially in the convoluted tubules lying in the cells and produce coagulation necrosis of the protoplasm. Secondly, their presence is associated with a urine which is acid, contains granular casts, and is loaded with urates. Thirdly, they have been isolated and cultivated from the urine in the bladder of rabbits. Since we ascertained these facts we have had no opportunity of following up the investigation in the human kidney.[3] The indications, however, seem clear. It is highly probable that the kidney takes an important part in the preservation of the organism against the results of this infection. The character of the urine in rheumatic fever, the occasional occurrence of nephritis, possibly, too, the occurrence of infarcts, together with the researches of Chvostek and Singer, all point to an investigation on these lines as likely to produce some valuable facts. Have the relapses that occur so frequently any dependence upon the condition of the kidney? Does the occasional association of gout and rheumatic fever bear any relation to the occurrence of renal lesions? These, among others, are the problems that suggest themselves to us. Finally, the acute nephritis which sometimes occurs in childhood without any apparent cause may possibly find its solution as being in some instances, the result of this infection.

4. *Occurrence in the liver.*—In the rabbit we have found in the liver areas of coagulation necrosis. The liver cells undergo a rapid destruction and the micro-organisms can be demonstrated within them. In this organ they do not stain well and our examination of these sections leads us to suppose that they are destroyed by the agency of the liver cells. As yet we have not found in the liver of the rabbit that extreme vascular engorgement seen in rheumatic fever, but the hepatic venules are more dilated than usual. In one severe case of rheumatic fever (Case 6) we found the condition of the liver cells resembled closely that found in the rabbit, and we believe that in this case also the diplococci, whose presence we had proved by isolating them from the pericardial fluid, were being destroyed in this organ. The small size of the micro-organisms and the fact that they stained with difficulty does not, however, permit as yet a dogmatic statement upon these points.

5. *Occurrence in the joints.*—We have no personal knowledge of their occurrence in the joints in the human being, but Triboulet discovered a diplococcus in the joint exudation. They occur, sometimes in vast numbers, in the exudation in the rabbit. The fluid in the joints of rabbits may be clear or opaque and may even have the consistence of pericardial lymph. This thick fluid is found in the joints that have been affected for some time and such joints remain distended with this fluid. Possibly this may be thought to be an important difference between the condition produced artificially in rabbits and the rheumatic fever of man. In no single case, however, have we found suppuration in any of the viscera associated with this condition of the joints; further, the exudation is definitely fibrino-cellular in character. We lay especial stress upon this point, for we are sure that to jump to the conclusion that this condition found in the rabbit was a suppurative one simply from the macroscopic appearance of the exudation would be an error. The disease must be studied both clinically and pathologically and the affected organs examined microscopically before pronouncing upon the nature of the infection. The bursæ and tendon sheaths are affected in the neighbourhood of the

FIG. 9.




A section of a rheumatic nodule, showing diplococci in the tissue. The patient (Case No. 7), a boy, aged nine years, was admitted for rheumatic pericarditis and arthritis. The course of the disease was characteristic of rheumatic fever in childhood, and death occurred after a prolonged illness. Towards the end active rheumatism reappeared and nodules developed. The section has not passed through the centre of the nodule, but through the connective tissue zone of the formation. The figure shows retiform connective tissue with small clumps of diplococci scattered through it. A, Areolar tissue. B, Diplococci. Fixative, perchloride of mercury.

[3] Ibid.

joints in rabbits as in man. As further evidence upon the question of suppuration the following experiment is of value. A rabbit was inoculated under the skin of the abdomen with the contents of six blood agar tubes of a virulent culture. A large firm swelling resulted, a gigantic nodule, which increased in size for some days and then gradually subsided without any indication of abscess formation. There were no symptoms of a constitutional affection and except for this slightly tender swelling no clinical symptoms followed. Apert, in a similar experiment with the diplococcus, isolated by Triboulet and himself, produced a like result.

6. *Occurrence in the lungs and pleuræ.*—In the lungs and pleuræ of one of the rabbits that had been killed when suffering from pericarditis, valvulitis, pleurisy, and pneumonia we demonstrated diplococci which we believe to be identical with those found in the other viscera. They were present in masses and in vast numbers beneath the visceral pleura and in the alveoli of the lungs. The alveoli were filled with an exudation resembling very closely that seen in lobar pneumonia, though the exudation had a less reticular arrangement. In a case of rheumatic morbus cordis complicated with pneumonia we have also demonstrated diplococci in the alveoli of the lungs in great numbers. More than this we are not prepared to state, for the organisms were not isolated in this case, and it cannot, therefore, be asserted that they were identical with those which we have found in rheumatic fever. When it is called to mind how frequently both pleurisy and pneumonia occur in rheumatism this demonstration of numerous diplococci in the lungs and pleuræ of the rabbit is suggestive.[4]

7. *Occurrence in the throat.*—This, again, is of considerable interest and some of the facts that have come to light have a close bearing upon the treatment of the disease. We briefly recapitulate here the most important of the results. In the first place we have in one case (Case 7) found after death both tonsils large and inflamed and this when the illness had been one of long duration. Before death there had been an exacerbation of rheumatism and this development of tonsillitis is known to occur not only at the commencement but also during the course of a prolonged rheumatic attack. In a film from the deeper part of these tonsils we found diplococci and they were also present in the sections that were made of the tonsils. Secondly, in none of the rabbits, all of which were injected intravenously, was there any inflammation of the tonsils. Lastly, we isolated diplococci from the throat of an adult the subject of rheumatic fever who was suffering from an acute faucial catarrh. These micro-organisms rapidly produced death in a rabbit. After death valvulitis, pericarditis, and cardiac dilatation were found and the organisms once more isolated. It has been already stated that many observers have insisted upon the throat as an important site of infection in rheumatic fever, and these facts strongly support this view. Further, they point to a very watchful regard for the throat in rheumatic patients and to the assiduous treatment of it, not only in the acute stage at the commencement of the illness, but also throughout the period during which active manifestations of rheumatism, other than angina faucium, are present.

8. *Occurrence in the brain and its membranes.*—Our facts with regard to this are scanty, but, coupled with the observations of Dana, Apert, Westphal, Wassermann, and Malkoff, seem worthy of record. In one rabbit after the subsidence of arthritis a paresis of the hind limbs ensued which lasted for three weeks. This was one of our earlier cases and at the time we hardly grasped the significance of the symptom. From another rabbit which died from severe valvulitis we isolated the diplococcus in pure culture from the fluid in the lateral ventricles. In a case of chorea that died in St. Mary's Hospital in 1898 in which the movements were very severe and the heart but little affected we demonstrated numerous diplococci in the perivascular lymph spaces of the pia mater, in its capillaries, and also in some parts of the motor area of the brain. In a case of chorea of similar type we demonstrated them in large number in the mitral valve. In neither case, however, were these micro-organisms isolated. Diplococci have also been discovered in chorea by Dana, Apert, and Wassermann, and in Westphal's case, examined by Wassermann, polyarthritis was produced in rabbits. It is probable, then, that there is a close association between rheumatic chorea and the occurrence of diplococci in the brain and its membranes. It is also probable that the frequency of the occurrence of chorea in childhood depends upon the more extensive dissemination of these micro-organisms in the young, as pointed to by the clinical manifestations of the disease at this age.

[4] Ibid.

### VI.—The Relation of Infective to Rheumatic Endocarditis.

It is clear that the term "infective endocarditis," which has for some time been under suspicion, can now no longer be used in contradistinction to "rheumatic endocarditis," for both are plainly infective. The relation of this type of heart disease to that found in rheumatism has, we believe, been made much clearer by this investigation. That "malignant endocarditis," as we prefer to name it, is due to various causes is beyond doubt, but the frequent association of this type with rheumatism has hardly, we think, received a sufficiently minute investigation. It is indeed thoroughly recognised, but the explanation of its occurrence as due to a mixed infection has possibly been too willingly accepted.

There are cases which have the history and many of the symptoms of rheumatic fever but differ in the progressive nature of the valvulitis and in the occurrence of marked pyrexia, frequent infarction, and nephritis. With such there may be no suppuration. These cases suggest that under certain circumstances rheumatism may depart from its usual type and yet the infection be still rheumatic—a view which is also maintained by Professor Litten of Berlin.

We can offer no complete explanation of this alteration in the type of the disease, but think that a clue may be found in the distribution and behaviour of the diplococci in the cardiac valves. In simple rheumatism they are not found at first upon the surface of the valve, and the disease tending, as it does, to recovery, they are destroyed by phagocytosis, and possibly in other ways, the valve itself undergoing sclerosis. In the malignant type they reach the free surface and then appear to multiply with great rapidity, for they are found in large masses. If then they are detached by the force of the blood-stream they may possibly give rise to a condition of rheumatic septicæmia recognised clinically as malignant endocarditis. Why they should overstep the barrier of the endocardium in this way we do not know, but it is suggestive that the valves have usually been already injured by a previous rheumatic attack and that the patient is usually in feeble health at the time of the final infection.

Finally, we must say that throughout this investigation we have on all sides received the greatest help. To Mr. H. G. Plimmer we are indebted for assistance, criticism, and advice, and we can only express our obligation by claiming to be his pupils. The physicians at St. Mary's Hospital and the Hospital for Sick Children, Great Ormond-street, have placed their clinical cases at our disposal, and to Dr. H. Thursfield, the registrar at the Children's Hospital, we are indebted for leave to make use of any necropsies that might be of service. To Mr. Forbes Tulloch, a student of St. Mary's Hospital, we are indebted for the photo-micrographs. This generous help has greatly lightened the labour of this investigation and has been an additional incentive to pursue the subject.

## THE DETERMINATION OF CHLOROFORM.

### A METHOD OF DETERMINING WITH PRECISION MINUTE QUANTITIES OF CHLOROFORM IN THE BLOOD, SECRETIONS, OR ORGANS OF ANIMALS VARIOUSLY ANÆSTHETISED WITH CHLOROFORM.

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THE determination with rapidity and precision of minute quantities of chloroform is a problem which has hitherto not been accomplished, or only accomplished by processes so elaborate as to be impracticable. Two courses have been taken. In one set of methods the CH group has been measured by oxidimetry, much as diabetic sugar has been measured by means of the alkaline tartrate of copper devised by Fehling. In the other the $Cl_3$ has been measured after various prolonged and troublesome devices for breaking

up the $CHCl_3$ and reducing the chlorine to the saline form, so as to make it amenable to measurement by means of routine methods.

In view of the facts (1) that chloroform ($CHCl_3$) consists of chlorine to the extent of 89 per cent.; (2) that chlorine in the saline form is measurable with an ease and exactitude which rank its determination among the most charming and precise of chemical processes; (3) that the determination of chlorine is free from any sort of fallacy; (4) that the CH form only 11 per cent. of the $CHCl_3$; and (5) that their measurement by oxidation is full of fallacies—it would seem obvious that the true objective at which to aim was the measurement of $CHCl_3$ by means of its chlorine. Yet so difficult have been the methods hitherto in use for the reduction of its chlorine to the saline form that this natural objective has been to a great extent set aside. My object is to describe a method by which the chlorine is promptly and easily reducible to the saline form and made to serve as the measure of its chloroform. The weight of the chlorine being accurately determined, multiplication by the factor 1·12314 gives the weight of the chloroform.

If a solution of permanganic acid and potash in excess be made with 3·137 grammes of the potassium permanganate, 55·71 grammes of potassium hydrate, and water to one litre at 60° F. we get a solution in which nascent oxygen readily oxidises carbon and hydrogen into carbon dioxide and water, while potash potently abstracts and fixes chlorine as KCl. If to this solution we add less than half the permanganate equivalent of chloroform, disruption takes place in the course of a few days at the ordinary temperature of a warm room, and, on heating to 100° C., almost immediately. All that remains, practically, is to introduce the chloroform without loss, and so to secure the flask containing the mixture that it can be exposed in a water-bath which is slowly raised to the boiling-point without any volatilisation of chloroform pending its chemical disruption. The disruption of the $CHCl_3$ having been completed in the presence of the hot solution of potash, its $Cl_3$ is so perfectly fixed as KCl that it is thenceforth absolutely amenable to the everyday measurements of the laboratory. The presence of ether or alcohol, or of other volatile substances free from haloids does not interfere.

For the purpose of controlling the experiments chloroform must be weighed out uniformly and accurately in minute quantities. In aqueous solution chloroform diluted to 1 in 1000 is fairly manageable. In order to get a saturated aqueous solution I put pure chloroform into an all-glass burette with a sediment-end projecting downwards below the glass tap. Chloroform is then poured into the burette in quantity sufficient to fill up this tube below the tap but so that no chloroform can flow out through the tap. On filling the burette up to zero with distilled water and shaking we have a solution of chloroform which can be run off by gravity through the glass tap, while surplus chloroform remains always present at the bottom of the burette. As the chloroform-water is measured off for the purpose of experiment we fill up the burette with fresh water and, from time to time, add further portions of chloroform. A properly constructed glass stopper at the top converts the burette into a well-stoppered bottle in which, on turning the stopper round 90° one way or other, we have a burette which discharges freely, or is a perfect vessel for the storage of our solution of chloroform.

If a good balance, such as will weigh easily to 0·0001 gramme, be available, it is best to weigh out pure chloroform for the control experiments. I use a miniature test-tube having a capacity of about one cubic centimetre and a length of some two inches, standing in a 60-minim measure in the scale pan. The tube and its stand having been carefully cleansed, dried, and weighed, weights amounting to a further 0·1186 gramme are added to the other scale pan. Then by means of a very delicate pipette I drop the pure chloroform into the tube until it somewhat overbalances the weights. By means of filaments of fine filtering paper held in a pair of forceps the surplus chloroform may now be easily absorbed and the exact weight secured. Then by means of the forceps the tube with its contents is lifted out of its stand and dropped bodily into the solution and the bottle is promptly closed. If reliable apparatus be not available for preventing loss of chloroform by volatilisation under the high tension of chloroform vapour at 100° C., it is best to use strong glass bulbs of 100 cubic centimetres capacity and with long tubular necks that, under the blow-pipe flame, may easily be drawn out and sealed hermetically. I have used six-ounce strong Jena bottles, with a flat, wide, ground-down nose and a small aperture. Upon the flat nose there fits a slab of strong glass ground finely to a true flat surface on one side so as, by mere apposition, to make the nose steam-tight if properly held in place. A little flour-and-water luting on the end of the nose perfects the joint and the glass slab is retained solidly *in situ* by a brass frame and a screw-down plate. A hook upon the brass frame allows the bottle to be swung in a water-bath and beneath the gas is lighted so as to raise very slowly the surrounding water to the boiling point. With reasonably good manipulation the installation is free from any sort of risk or uncertainty, and the operation when set going may be left to itself.

In an hour or two the purple colour of the permanganate is seen to have been replaced by the bluish-green colour of the manganate, while the solution is made turbid by a large quantity of out-thrown hydrated dioxide of manganese. The gas is turned out and everything is left till cold. The flask is then unshipped and opened. If the solution be now filtered a brilliant blue-green liquid passes through. But filtration is not necessary. Decinormal solution of sodium sulphide is now dropped cautiously into the solution and the bottle is agitated enough to mix the sulphide uniformly. Decolouration takes place until the blue-green manganate is largely replaced by a colourless liquid in which float brown flocculi of manganese dioxide. Reduction having been effected the solution is poured on a filter, the bottle is washed carefully into the filter, and the filter is finally rinsed through with boiling distilled water. The filtrate is acidified with normal sulphuric acid and then, if any haze of surplus sulphur comes out, the solution is run through a second filter of fine close texture until bright. This second filter is washed through with boiling distilled water and the filtrate is finally made up to 200 cubic centimetres at 60° F. The whole of the chlorine will be found in this filtrate unless the reduction has been mismanaged. 20 cubic centimetres are enough to titrate.

If sulphur comes out on acidifying, the solution has been over-sulphurised and must be treated with fresh permanganate until an enduring rose colour comes. On running this rose-coloured solution once or twice through a fresh filter the last traces of permanganate are reduced by the action of the paper filter and a bright colourless filtrate comes through. But it is better to work the sodium sulphide as a reducer rather than as a sulphuriser of the excess of permanganate and to drop it in so cautiously that the solution yields a filtrate in which residual manganate leaves a distinct blue-green colour. Upon acidifying and running this once or twice through a fresh filter the residual manganate is reduced and a bright colourless filtrate is obtained. This is washed up to 200 cubic centimetres. 20 cubic centimetres are taken for titration.

The 0·1186 gramme $CHCl_3$ taken is an equivalent of chloroform in milligramme atoms. Under the conditions and manipulation described it is easy to weigh out the chloroform to 0·0001 gramme. The charge into which the weighed chloroform is dropped is 50 cubic centmetres of the solution. This solution, as to releasable oxygen, is decinormal; as to potash it is of full normal strength. In oxidising the carbon to carbonic acid and the hydrogen to water one atom of nascent oxygen is obtained by reduction of the permanganate in alkaline solution, and there is also used up the oxygen displaced by the three atoms of chlorine which unite with potassium. The chemical reactions may be represented as follows:—

$$CHCl_3 + 5\,KHO + O = K_2CO_3 + 3\,KCl + 3\,H_2O.$$

The disruption is effected by the double action of the nascent oxygen upon the carbon and hydrogen, while the newly-formed carbonic acid and the released chlorine are greedily absorbed by the potash. It will be noticed that only a small part of the charge is used in breaking up the chloroform. The remainder of the charge is introduced in order to raise the chemical potential and thus secure the complete disruption of the chloroform.

The determination of the chlorine is a routine matter of laboratory work. I much prefer, however, the beautiful process of Volhard to any other. The method of applying Volhard's process for urines, serums, and other such matters in which a quick and accurate method of determining chlorines is desired has been already described by me.[1] But this solution containing the chloroform-chlorine presents

[1] Sutton's Volumetric Analysis, 1896, pp. 379-380.

none of the difficulties which are presented by urines and serums. Therefore any of the processes for determining chlorine may be used.

In applying this process to the determination of traces of chloroform in the blood, urine, organs, &c., of animals variously anæsthetised with chloroform, it is obvious that the saline chlorine in blood, urine, &c., must be kept back. Chloroform is so volatile that this presents no sort of difficulty. Such matters put into a properly fitted distilling flask immersed in water that can be raised to 100° C., and furnished with a good condenser, will yield all their chloroform by slow volatilisation in the course of a few hours, and the distillation may be left to itself. Provision must be made for conveying the condensed liquid into the cold permanganate and potash solution without loss. The separation having been completed the receiving bottle must be unshipped, securely closed, and heated in the water-bath slowly up to 100° C., at which temperature it may be left for a time.

Blank determinations must be made with the identical reagents and apparatus in order to be sure that these minute quantities of chlorine are not mixed up with chlorine pre-existing in the reagents. Any such chlorine must, of course, be deducted from the determinations, or reagents must be used which are so pure as to exclude all traces of extraneous chlorine.

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# ON THE CALORIE-VALUES OF CERTAIN ARTIFICIAL INFANT'S FOODS.

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## I.—THE COMPOSITION OF HUMAN MILK, COW'S MILK, GOAT'S MILK, AND ASS'S MILK.

IN the present paper only those foods are considered which are suitable for the first six months of infantile life. It is obvious that such foods should approximate as nearly as possible to the natural infant's food. The first point of importance, therefore, is to determine the average composition of human milk.

From the period when lactation becomes well established (about three weeks) until the period of weaning (seven months) the composition of human milk under normal conditions remains fairly uniform. According to Biedert[1] it contains 1 per cent. of proteid, 3·2 per cent. of fat, and 6·8 per cent. of lactose. One of the most important rules in artificial feeding, therefore, should be the maintenance, as far as possible, of a uniform composition of the food throughout the first six months or at least after the third week until the end of the above period. The quality, in other words, should be preserved and the quantity increased according to the age and needs of the infant.

By the term "calorie" is understood the amount of heat required to raise the temperature of one kilogramme of water one degree centigrade. One gramme of fat in its combustion generates 9·3 calories; one gramme of sugar and one gramme of proteid (counting urea as the end-product) each liberates 4·1 calories. By an easy calculation it follows that 100 grammes of human milk of average composition correspond to 61 calories. In the case of *poor* human milk, that of starvation, the fat may diminish to 2 per cent. and the sugar to 4 per cent., but the proteid may increase to 2·5 per cent. 100 grammes of such milk represent only 36 calories, whereas in over-rich milk, as in mothers who live luxuriously and take little or no exercise, the fat may reach 5 per cent., the sugar 7·5 per cent., and the proteid 3·5 per cent. Milk of this description is very indigestible, and 100 grammes represent 90 calories.

When we compare the composition of average cow's milk the fat is about the same percentage (3·88), the lactose is diminished to 4·5 per cent., whilst the proteid reaches 3·3 per cent. The proportion of caseinogen to lacto-albumin is as two to one, whereas in human milk it is as one to two. 100 grammes of cow's milk are equivalent to 68 calories. Goat's milk, which contains 4 per cent. of proteid, 4·8 per cent. of fat, and 5 per cent of lactose, has a calorie-value of 80. Ass's milk, which contains less proteid (about 2 per cent.), is more suited for very delicate infants. Its percentage of fat reaches only 1·6 and lactose 6. The calorie-value is nearly 50. The disadvantage lies in the deficiency of fat. Assuming the composition of average cream[2] to be, fat 12 per cent., lactose 2·8 per cent., and proteid 4 per cent., one teaspoonful (four grammes) is equivalent to five calories. Two teaspoonfuls of cream added to each 100 grammes (three and a half ounces) would raise the calorie-value of ass's milk to 59.

[1] Die Kinderernährung im Säuglingsalter, edition iii., p. 93.

## II.—THE MINIMAL REQUIREMENTS IN HAND FEEDING.

The following table is modified from Biedert.[3] It is evident from its results that the calorie-value should not fall below 40 per 100 cubic centimetres of liquid nourishment.

| Lunar month. | Proteid. | Fat. | Sugar. | Volume per kilogramme. | Calorie per kilogramme. | Total calories. | Average weight in kilogrammes. | Calorie-value per 100 grammes of food. | Proportion of N. to Non-N. |
|---|---|---|---|---|---|---|---|---|---|
| | Grms. | Grms. | Grms. | c c. | | | | | |
| First month. | 2·3 | 4·5 | 6·6 | 140 | 74 | 278 | 3·770 | 50 | 1 to 5 |
| Second ,, | 3·1 | 3·6 | 8·0 | 227 | 75 | 246 | 3·285 | 33 | 1 to 3·7 |
| Third ,, | 2·8 | 3·3 | 9·9 | 250 | 79 | 286 | 3·630 | 33 | 1 to 4·7 |
| Fourth ,, | 4·2 | 4·8 | 11·8 | 248 | 104 | 442 | 4·25 | 44 | 1 to 4 |
| Seventh ,, | 3·0 | 5·3 | 7·7 | 266 | 89 | 570 | 6·4 | 33 | 1 to 4·3 |

As the child grows the quantity must be increased *pari passu* with its age and with its weight. For the sake of reference the accompanying table, which indicates the amounts necessary for an average infant at different ages in the 24 hours, is inserted:—

| Age. | No. of bottles. | Quantity in each bottle. | | Total amount. | | Approximate number of calories required per day. |
|---|---|---|---|---|---|---|
| | | Grammes. | Ounces. | Grammes | Ounces. | |
| First week. | 10 | 30 | 1 | 300 | 10 | 180 |
| First month. | 9 | 45 | 1½ | 400 | 13½ | 240 |
| Second ,, | 8 | 85 | 3 | 680 | 24 | 400 |
| Fourth ,, | 7 | 120 | 4 | 840 | 28 | 500 |
| Sixth ,, | 6 | 170 | 6 | 1000 | 36 | 600 |

## III.—RESULTS OF OVERFEEDING.

The quantitative estimation of the income and excretion of nitrogen shows, as, indeed, one would expect, that in hand-fed children the deficit of nitrogen, in spite of the greatest care, is greater than in infants brought up on the breast. In other words, the breast-fed infant deposits a larger proportion of its nitrogen within the tissues and the muscles. Hand-fed children consequently require more nourishment, inasmuch as their food is not so perfectly assimilated. In overfed children, however, brought up by hand as much as 90 per cent. of the nitrogen may pass out in the excreta. This excess leads to a heavy and useless expenditure of energy on the part of the stomach, intestines, and kidneys. The child suffers from colic, flatulence, with diarrhœa at times (the stools containing undigested curd), and becomes exceedingly restless and fretful. Biedert has demonstrated that the stomach of a breast-fed child is usually empty about one and a half hours after a meal, whereas in the hand-fed this is not always the case even after two and a half hours. In children over four months old the residue will be further digested by the action of the pancreatic juice, with the gradual development of an alkaline reaction. In breast-fed infants the reaction of the stools is generally acid, in the healthy hand-fed (on cow's milk) it

[2] If good milk be allowed to stand in a cool atmosphere and in shallow vessels the cream taken after two hours contains from 10 to 15 per cent. of fat. Cream obtained by means of the centrifugal separator is much richer and may even reach 66 per cent. In purchasing cream from the dairy it is necessary to have some idea of its percentage of fat. In this paper the calorie-values have been estimated on the assumption that the cream contains 12 per cent. of fat.

[3] Op. cit., p. 94.

is alkaline. An acid reaction in the latter would indicate imperfect assimilation and future danger.

With regard to the percentage of sugar, this should not exceed 7 per cent. When an excess of sugar is ingested its absorption becomes deficient and diarrhœa may supervene with the formation of green acid stools. Such children are apt to become fat, flabby, and rickety.

When foods very rich in fat are administered the stools may become more frequent, acid, sometimes glistening and soapy-looking, at other times green. If the fat be diminished the motions become normal, but may reappear as before with increase of fat (fat-diarrhœa). In such cases the fat must be eliminated from the food for a time and skimmed milk along with one of the artificial foods, to be mentioned later, as Mellin's or Theinhardt's, should be employed.

### IV.—MILK PREPARATIONS.

1. *Sterilised milk.*—Budin[4] recommended in 1893 the employment of undiluted sterilised cow's milk. If the patient does not thrive on the breast from 50 grammes to 250 grammes of sterilised milk, according to the extent of deficiency, may be given daily, and if the mother is unable to feed the child altogether from 500 grammes to 700 grammes of sterilised milk per diem. The calorie-value is naturally satisfactory, but the amount of proteid is obviously three times the amount required, whilst the lactose is less than what is necessary. Its use has not become general.

2. *Artificial human milk.*—The late Sir E. Frankland suggested a method of imitating human milk, the principle of which was to remove a part of the cream, digest the milk with rennet, filter off the casein, and add the necessary amount of milk-sugar. As the milk becomes acid during the process of curdling it is advisable to add a few grains of bicarbonate of sodium. In a modified method[5] the cream is separated from a pint of milk and the casein of one-half of the skimmed milk is coagulated by rennet and strained off. The whey is then boiled, and to it is added the cream and the remainder of the skimmed milk, and the whole is sterilised in separate bottles. Such a mixture would contain about 2 per cent. of proteid, 4·5 per cent. of fat, and 5 per cent. of sugar, and its calorie-value would be 74. Rotch[6] gives prescriptions for the manufacture of milk of any desired composition. The mixture approximating that of human milk most nearly is 72—viz., cream (10 per cent. fat), five ounces; lime water, one ounce; water, 14 ounces; and milk-sugar, two and a half measures (each measure holds three and three-eighths drachms or 13·5 grammes). The percentage composition of this mixture is proteid, 1; fat, 2·5; and sugar, 6. The calorie-value is 52. Some of Rotch's mixtures can only be employed temporarily and as stop-gaps, useful in feeding premature children or infants suffering from chronic gastro-enteritis, infantile atrophy, and the like. For instance, prescription 69, with 1 per cent. of fat, 5 per cent. of sugar, and 0·75 per cent. of proteid, represents 33 calories only. Biedert[7] recommends mixtures of cream, milk-sugar, and water, with the addition of milk according to the age of the child. For instance, mixture No. 2 corresponds to 49 calories and is to be employed during the second month. It is obtained by the addition of one-eighth of a litre (about four ounces) of cream (10 per cent. fat), one-sixteenth of a litre of milk, 18 grammes of milk-sugar, and three-eighths of a litre of water. Its composition is 1 per cent. of proteid, 2·6 per cent. of fat, and 5 per cent. of sugar. Ashby's[8] mixture of milk-sugar, cream, and milk contains about 1·6 per cent. of proteid, 2·6 per cent. of fat, and 5 per cent. of lactose, and corresponds to 51·5 calories. In certain cases it is advisable to replace the water by means of barley-water which contains 1 per cent. starch. This quantity, however, is very small and not harmful. The cream-conserve of Loeflund might be used in the manufacture of these cream mixtures. It contains 5 per cent. of proteid, 50 per cent. of fat, 1·8 per cent. of carbohydrate, and 20 per cent. of water. Gärtner's "fett-milch" resembles Biedert's fourth mixture. It is obtainable in England from the Friern Manor Dairy. Cow's milk is diluted with an equal quantity of sterilised water and then submitted to centrifugalisation. From the peripheral layer of milk which is rich in fat the "fett-milch" is taken and from three to four grammes of milk-sugar are added to 100 cubic centimetres. It consists of 1·8 per cent. of proteid, 3·3 per cent. of fat, and 6 per cent. of sugar. Its calorie-value is 62. Cautley,[9] by taking equal quantities of cow's milk and lactose (10 per cent. solution) and passing them through the separator with the two out-going streams equal, obtains a cream-milk of the following composition: proteid, 2·0 per cent.; fat, 3·5 per cent.; and lactose, 7·2 per cent.; and a calorie-value of 70. It was found necessary in some cases to diminish the proteid. The milk is supplied in air-tight bottles pasteurised at 160° F. and rendered faintly alkaline. The price is 6*d.* per pint. For newly-born infants or those with dyspepsia, chronic gastro-enteritis, marasmus, and with liquid green curdy stools, whey has been recommended. Ashby[10] adds two or three drachms of milk-sugar to the pint and a few grains of bicarbonate of sodium. Whey has a composition (as made according to his directions) of 2 per cent. of fat, 4·5 per cent. of lactose, and 0·8 per cent. of proteid, and its calorie-value is only 40. If 10 ounces of milk are added to two ounces of sterilised whey and half an ounce of milk-sugar the percentage become 1·75 of proteid, 2·5 of fat, and 6·0 of lactose, whilst the calorie-value becomes 55. Whey may also be used as a diluent instead of sugar or barley-water.

3. *Milk dilutions.*—If cow's milk be diluted with an equal quantity of water or barley-water the calorie-value becomes 34. Heubner and Hoffmann diluted the milk with an equal quantity of lactose of 6 per cent.[11] strength. The calorie-value then increases to 46. Other sugars, as maltose and saccharose, are not to be recommended. If barley water be used as a solvent for the milk-sugar less of the latter must be added. The composition of the mixture would be 1·6 per cent. of proteid, 5 per cent. of lactose, and nearly 2 per cent. of fat. Children with very weak digestive powers or those convalescent after acute illness might be fed with milk diluted with twice the amount of a 4·5 per cent. solution of milk-sugar. The Obstetrical Society in its "Rules for the General Management of Hand-fed Infants" (1893) recommend in the first month cow's milk, boiled and diluted with at least twice as much hot water or barley-water. This mixture represents only 23 calories per 100 cubic centimetres. Proceeding, it is said that "one teaspoonful of cream to each half-bottle of food renders the mixture more nutritious." It would increase the calorie-value to about 28. No directions are given as to the quantity of the food per diem and nothing is said of the quality of the cream.

4. *Predigested milk.*—In certain cases of infantile dyspepsia and diarrhœa Starr[12] recommends a mixture of two ounces of milk, two ounces of water, half an ounce of cream, and one teaspoonful of peptogenic milk powder (Fairchild). The last contains pancreatin, bicarbonate of sodium, and milk-sugar. The mixture is heated to 115° F. and kept at this temperature for six minutes. It has an alkaline reaction and its proteid is in a digestible form. The percentage composition is 4·5 of fat, 7·0 of lactose, 2·0 of proteid, and its calorie-value is 77. Loeflund's peptonised milk contains 5·6 per cent. of albumoses and peptones, 12·2 per cent. of fat, and 5·5 per cent. of carbohydrates (milk-sugar, maltose, and dextrin). At first it is diluted 12 times with water, and the degree of dilution is gradually lessened with increasing age of the infant to six times at the sixth month. In the more diluted forms it is poor in fat and proteid. When diluted 12 times the calorie-value is only 32. Biedert's infants' food is a condensed creamy substance which when diluted 10 times contains 0·75 per cent. of proteid, 3·6 per cent. of sugar, and 1·8 per cent. of fat, and has a calorie-value of 34·5. The proteid is not casein, but alkali albumin produced by the action of potash on egg albumen. The stronger dilutions may be given to weak infants with delicate digestive powers. In Rieth's albumose milk, albumose is prepared by heating egg albumen to 130° C. and is not coagulated by heat or acids. Milk-sugar and cream are added. It is sold in Berlin in sterilised litre flasks. The motions become fœtid, but the results are good. Two

[4] Revue Générale des Sciences, No. 21 and No. 23, 1893.
[5] Vide Fenwick: Disorders of Digestion in Infancy, p. 41.
[6] Hygiene and Medical Treatment of Children, vol. i., p. 280.
[7] Op. cit., p. 190. In Biedert's mixtures the proteid varies from 0·9 per cent. at first up to 2 per cent. at the sixth month, the fat and sugar remaining practically the same. The calorie-value in the first mixture is 47 calories and of the last 56.
[8] Fenwick, op. cit., p. 42.
[9] A Special Milk for Infants, THE LANCET, Jan. 11th, 1896, p. 91.
[10] Ashby: Edinburgh Medical Journal, April, 1899.
[11] To obtain a 6 per cent. solution the proportions are one ounce of milk-sugar to 16½ ounces of water, and for a 5 per cent. solution 20 ounces of water to the ounce of milk-sugar.
[12] Hygiene of the Nursery, fifth edition, p. 191.

mixtures are given, one corresponding to a calorie-value of 54, the other to 60. Voltmer's "mutter-milch" is a yellowish-brown substance resembling honey in appearance. After dilution with 12 times its amount of water the percentage composition is proteid 1·8, fat 2·2, and sugar 6·0, and its calorie-value is 51. The casein is partially peptonised by means of extract of pancreas. Here may be mentioned also "somatose-milk" which contains, as its name implies, a certain percentage of somatose. The latter consists of 85·7 per cent. albumose and 2·4 per cent. peptone. Five grammes are dissolved and added to a litre of cream mixture containing about 0·8 per cent. casein and 3·0 per cent. fat.

In that grave form of acute gastro-enteritis which has received the name of infantile cholera treatment often seems hopeless. There are incessant sickness, purging, and great danger of collapse. In many instances washing out of the stomach and irrigation of the colon are impracticable. A mixture of bovinine (15 per cent. soluble albumin) and brandy may be cautiously tried. One teaspoonful (or more) of bovinine is added to a wineglass[13] of recently boiled and cooled water and then one teaspoonful of the best brandy. The mixture should be surrounded by ice and one teaspoonful may be given every 10 minutes. Assuming the calorie-value of alcohol per gramme is seven and that the brandy contains 50 per cent., the heat value of the mixture becomes 17 per 100 cubic centimetres. After two days thin arrow-root, barley-water, and brandy, or peptonised milk, lime-water, and brandy, one teaspoonful of each to the wineglass, may be substituted for three or four days. Another mixture recommended in infantile atrophy and gastro-enteritis is white wine whey. The quantities are—milk 10 ounces and sherry two and a half ounces. The casein is removed. The composition of the whey would be about 0·8 per cent. of proteid, 0·2 per cent. of fat, and 4·5 per cent. of sugar. The sherry contains 12 per cent. alcohol. Ten ounces of milk equal 300 cubic centimetres, and two and a half ounces of sherry equal 75 cubic centimetres. The calorie-value of the 375 cubic centimetres is about 126, or 34 per 100 cubic centimetres. If two teaspoonfuls of cream are subsequently added to each three and a half ounces (100 cubic centimetres) the calorie-value reaches 44.

5. *Condensed milk.*—In a very large proportion of infants belonging to the poorer classes condensed milk is almost exclusively employed during the first nine months of life. It is easily diluted, it keeps well, and the child apparently thrives. Some of the best sweet brands, as the Anglo-Swiss Milkmaid Brand, contain about 8 per cent. of proteid, 50 per cent. of sugar, and 12 per cent. of fat. The directions issued by the above company are explicit enough. If we take those for the age of three months they are—two teaspoonfuls to 24 teaspoonfuls of water every two hours by day and once in three hours by night. Teaspoons, however, vary very much in size; moreover, in the case of condensed milk so much clings to the spoon in addition that no uniform composition of the mixture can be assured. The directions state that the dilutions should be at least one part in seven. The calorie-value of the pure milk is 342 per 100 grammes, and a dilution of one to seven signifies $\frac{342}{8}$, equal to 43 calories. The addition of two teaspoonfuls of cream to each three and a half ounces of fluid would raise it to 53. As is well known, children fed continuously on condensed milk, even of the best brands, become plump and fat, but they exhibit little resisting power. They succumb easily to acute gastro-enteritis and pneumonia. Moreover, there is a tendency to scurvy and rickets.

### V.—FOODS CONTAINING LITTLE OR NO INSOLUBLE STARCH.

1. *Allen and Hanburys' food No. 1.*—This is recommended for infants up to the age of four months. It contains no insoluble starch. The excess of casein from cow's milk is removed, cream, soluble albumin, and milk-sugar are added, and the mixture is sterilised, evaporated *in vacuo* to a powder, and packed in tins. It contains 13·15 per cent. of fat, 14·25 per cent. of proteid, and 65·48 per cent. of dextrin and sugar.[14] If the directions be followed—that is, if one tablespoonful of the food be dissolved in three ounces of warm sterilised water—the food contains about 2 per cent. of proteid, 2 per cent. of fat, and 10 per cent. of carbohydrate, and has a calorie-value per 100 grammes of 68. Its advantages are—(1) a uniform composition of the food during the four months, and (2) the absence of pathogenic bacteria. The disadvantage lies in the excess of carbohydrate. By taking three-fourths of the amount of food (a measure could be supplied with the food) and adding two teaspoonfuls of cream to each 100 grammes a calorie-value of 60 could be obtained and the mixture would then approximate that of human milk more nearly. In marasmus and after gastro-enteritis the amount of food could be lessened still further.

2. *Allen and Hanburys' No. 2.*—This is recommended for older children (from four to seven months old) and contains, in addition, maltose, dextrin, and soluble phosphates. The calorie-value as prepared according to the directions is 76.

3. *Horlick's malted milk.*—This is prepared by the action of malted barley (diastase) on milk, the result being evaporated to dryness *in vacuo* The casein is no longer coagulable by acids and starch is absent. It contains about 20 per cent. proteid, 6 per cent. fat, and 64 per cent. carbohydrate. The directions given are somewhat ambiguous—e.g., under three months it is recommended to dissolve from *one to two* heaped up teaspoonfuls in from *four to eight* tablespoonfuls of hot water. If we take the smaller proportion, and assuming that a heaped-up teaspoonful contains six grammes, the proteid becomes 2·2 per cent., the carbohydrate 6·6 per cent., the fat 0·75 per cent., and the calorie-value only 42. A tablespoonful of cream to each 100 grammes of food (three and a half ounces) would raise the calorie-value to 60 and the percentage of fat to 2·5. It is a reliable preparation, but the directions should be more definite, the amounts of food at each feeding should be noted, and a six-gramme measure supplied. In these two foods it is to be observed that no milk is added in the preparation.

4. *Mellin's food.*—This is a malted flour in which the starch has been entirely converted into soluble carbohydrate. Its composition is about 6·8 per cent. of proteid and 82 per cent. of carbohydrate. Under three months the quantities given are half a tablespoonful of food and one quarter of a pint each of water and cow's milk. The percentage composition would be 1·2 of proteid, 2·0 of fat, 5·5 of sugar, and its calorie-value 45. Above three months the proportions are—one tablespoonful of Mellin's food to four tablespoonfuls of water and six ounces of cow's milk, and the percentage becomes 4·5 of proteid, 2·5 of fat, and 7·0 of sugar. The calorie-value is 70. In the first the fat is deficient and in the second the proteid is in excess.

5. *Theinhardt's infant's food.*—This consists of milk, the proteid of which has been rendered soluble by a vegetable ferment, and of flour, a portion of which has been partially dextrinised. A further portion of the carbohydrate becomes soluble when heated. It contains 14 per cent. of proteid, about 7 per cent. of fat, and 56 per cent. of carbohydrate. Of the last 94 per cent. is soluble. For a child four months old it is recommended to use one and a half teaspoonfuls of food, five large tablespoonfuls of milk, and five large teaspoonfuls of water. Such a mixture represents 3·3 per cent. of proteid, 3·7 per cent. of fat, and 6·6 per cent. of carbohydrate. Its caloric-value is 73. Careful directions are given for each month as to quantity and quality. Biedert has found it useful in the summer diarrhœa of infants when prepared with water only, and used as a thin soup two teaspoonfuls to two ounces of water.

6. *Benger's food.*—This is a white powder consisting of flour partially dextrinised by cooking and containing pancreatic extract. If the directions for young infants are followed the mixture works out to 2·7 per cent. of proteid, 2·3 per cent. of fat, and 8·0 per cent. of carbohydrate. The food itself contains 10·0 per cent. of proteid, 1·2 per cent. of fat, and 75·0 per cent. of carbohydrate. The calorie-value is 56. With two teaspoonfuls of cream to the 100 grammes it represents 65 calories. Without the added cream there is a deficiency of fat, also there is an excess of proteid and carbohydrate.

I have not discussed other foods, such as those of Neave, Ridge, Mufller, Kufeke, Savory and Moore, and Robinson's patent barley, inasmuch as these are more suitable after the first six months are passed. But it is to be recommended: (1) that all proprietary articles, such as condensed milk, humanised milk, and infant's foods in powder, should bear on the label the average composition of the food and its calorie-value when prepared according to the general directions; (2) that, bearing in mind the ignorance of the principles of infant feeding as exhibited by the laity, each label should contain definite

[13] A wineglass is assumed to contain two and a half fluid ounces.
[14] THE LANCET, March 24th, 1894, p. 748.

rules as to the quantity of food required at each period of the infant's existence and the number of times it should be fed during the 24 hours; (3) that when feeding by these sterilised foods it is essential occasionally to add an anti-scorbutic element such as a dessertspoonful of grape or orange juice between meals three times a week, or if the child be above four months old a dessertspoonful of raw meat juice may be added to the food three times weekly (Allenbury); directions for the preparation of this juice should accompany each tin of food; and (4) that the non-liquid foods should be provided with a wooden or glass measure to prevent inaccuracy and secure some amount of uniformity in the composition of the resulting mixture.

Clacton-on-Sea.

# Clinical Notes:

## MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

### A HALFPENNY IMPACTED IN THE ŒSOPHAGUS.

BY T. COKE SQUANCE, M.D. DURH.,
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A GIRL, aged six and a half years, was brought to my consulting rooms on April 10th, and her mother gave the following history. Five weeks previously the child was playing with a halfpenny when she accidentally swallowed it. She was immediately taken by her mother to a medical man who "pushed it down with an instrument." After this the child complained of pain and of difficulty in swallowing and she could only take liquids or "boily" and was occasionally seized with suffocative attacks of coughing, during which she would become black in the face. She was again taken to a medical man who declared that "there was nothing there." The child began to lose flesh and the attacks of coughing still continued, though they were rather less violent. I examined the chest with the fluoroscope and discovered the halfpenny apparently somewhat tilted and lying behind the first part of the sternum. I then took a radiograph and sent the patient into the infirmary. On the next morning she was placed under chloroform, and as the ordinary instruments were much too short I took a piece of flexible wire covered with gutta percha three feet in length, doubled it, and made a small hook at the end at an angle of about 45°, and measuring the distance from the mouth to the upper part of the sternum, which was roughly 10 inches, I notched the wire at a distance of 12 inches from the hook, and passing it down to this extent "fished" for the halfpenny, and at the second "cast" caught it. It was very firmly wedged and there was considerable difficulty in drawing it up until I could touch it with my finger, when I held it in position, seized it with the œsophageal forceps, and removed it. On the next morning the little patient ate an excellent breakfast, and as the pain and cough had disappeared she was sent home. The severe cough was evidently caused by the pressure of the edge of the coin on the trachea.

Sunderland.

*** Dr. Squance sent with his note a radiograph which showed very clearly the coin lying at the level of the first or second dorsal vertebra.—ED. L.

### A CASE OF PRESUMED RUPTURE OF THE ANTERIOR ANNULAR LIGAMENT OF THE ANKLE-JOINT.

BY GEORGE W. ORD, M.R.C.S. ENG., L.R.C.P. LOND.

I WAS recently called to a case of so-called "sprained ankle." The patient, a muscular boy, aged 13 years, had twisted his right ankle when bowling at cricket. He did not fall down at the time but he was unable to walk. On examination half an hour later I found a slight amount of puffiness just internal to the external malleolus. There was no ecchymosis, but there was great pain on flexing the foot and on pressure over the swelling—in fact, far greater tenderness than would be expected from so slight a sprain. But for the fact that I knew the boy to be plucky and manly I might have diagnosed his apparent hyperæsthesia as a symptom of a neurotic temperament. Noticing impaired movements of the toes I made him stand up with both feet uncovered and then found the following condition. The big toe could be extended fairly well but not so well as its fellow on the sound limb; the second, third, and fourth toes could not be raised from the ground, though he was just able to communicate movement to them; while the little toe was immobile. I applied the battery to exclude the possibility of ruptured tendon and obtained muscular contraction of the extensor longus digitorum, but with diminished extension, especially of the little toe.

The injury seems to me to have been a rupture of the outer portion of the anterior annular ligament, the "giving way" of the fulcrum preventing the extensor tendons from doing their work. I can neither find nor hear of a record of a similar injury and I wonder that it does not occur more frequently. If anyone will take the trouble to put himself in the position of a right-hand fast bowler at the moment of delivering the ball he will notice the sudden jerk which the ligament in question will have to resist, the foot at the time being turned inwards. Of course, too, it follows that the faster the delivery is the greater the jerk.

The treatment in this case consisted of firm strapping and bandaging and after three weeks' rest limited extension was seen in the second, third, and fourth digits, but only slightly in the fifth. The patient then went to the seaside and on his return seven weeks after the injury (still wearing the strapping) I was pleased to find that extension of the toes was performed perfectly and was assured that he never had pain or discomfort during exercise. Running, however, had not been attempted. I told him that he must give up overhand bowling and had better practise "Jephson's lobs," an underhand yet fatal form of delivery.

The interest of the case lies, I think, in the rarity of such an injury and in the prognosis.

Richmond, S.W.

# A Mirror
OF
# HOSPITAL PRACTICE,
## BRITISH AND FOREIGN.

**Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriis collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.**

### ST. THOMAS'S HOSPITAL.

#### A CASE OF TYPHOID SEPTICÆMIA; NECROPSY.

(Under the care of Dr. H. G. TURNEY.)

A GIRL, aged 15 years, was admitted into St. Thomas's Hospital on Jan. 24th, 1900, and died on Feb. 2nd. The family history showed that a maternal grandmother and an uncle were treated in an asylum. The mother and the mother's two sisters suffered much from headache. There was nothing else in the history which pointed to inherited disease. The patient had had the ordinary diseases of childhood, but otherwise her health had been perfect. She was said to be of a nervous disposition. No history was obtained of exposure to infection of any sort. The catamenia were regular. There had never been any discharge from the ear. As regards the present illness, the patient complained of headache on Tuesday, Jan. 16th. This was rather troublesome on the following day, but on the Thursday evening she felt better and went to see a pantomime. On her return she complained of pain in the back and limbs and a medical man was consulted. She was then treated for anæmia and influenza. On the 20th she seemed to be worse; she slept very badly and had distressing dreams. On the 22nd she went to bed as usual, but the mother discovered in the night that she was rambling and unconscious. She had not recovered consciousness since. A friend stated that a fortnight ago the patient complained to her of pains in the

head and abdomen with occasional sweating and a feeling of faintness.

On admission the patient was a pale-faced girl in a state of complete unconsciousness. Her illness was described by the relatives as having begun with an "influenza cold" a week before with unconsciousness for the past two days. For the most part the girl lay without movement quite oblivious of her surroundings. She groaned occasionally and coughed now and then. Interference of the more active sort only, as when the mouth was forcibly opened, met with some resistance of a feeble kind. There was no stertor or puffing out of the cheeks with respiration. There was no obvious paralysis in any of the limbs; they did not fall back limply when dropped from a height, and occasionally they were moved voluntarily. The knee-jerks were present and were normal in degree. The plantar reflexes were obtained with extension of all the toes together and with dorsiflexion of the foot. There was on admission no loss of control over the sphincters. The conjunctival reflex was present and the pupils were of moderate size with retained reaction to light. The left pupil was generally a little larger than the right, though this was not always perceptible. There was no optic neuritis. The ears were normal. The lungs were normal save for the presence of numerous moist sounds which were especially audible at the bases. The respirations were 40. The cardiac apex was in the fifth space in the nipple line. Dulness commenced in the third space and was limited by the left sternal margin. No murmurs were heard. The pulse was 130, regular, and of fair volume. The tongue was very dry and was coated with brown fur. The lips and teeth were covered with sordes. The breath was very offensive. The abdomen was not distended or tender. It moved well with respiration. The spleen was not felt and the liver dulness was normal. There were no signs of fluid. A few rose-coloured papules fading on pressure were seen over the abdomen and the back. The urine was normal. The temperature on admission was 102·4° F.

On the day after admission the blood gave a doubtful Widal's reaction. With a 1 in 20 dilution there were clumping and loss of motility in 20 minutes; with a 1 in 50 dilution only a few loose irregular clumps were seen after half an hour. The urine gave a positive diazo reaction. The temperature was 104·4° in the morning and 104·2° in the evening. On the 26th the blood again gave a doubtful Widal reaction. The temperature was 104·8° in the morning and 105° in the evening. On the 27th the serum reaction was positive. With a 1 in 20 dilution there were clumping and loss of motility in five minutes and with a 1 in 50 dilution the same result occurred in a quarter of an hour. The temperature was 104·2° in the morning and 104·8° in the evening. On the 30th the Widal reaction with a 1 in 20 dilution was instantaneous. The temperature was 104° in the morning and 105·2° in the evening. On Feb. 1st the temperature was 104·8° in the morning and 108° in the evening. On Feb. 2nd it was 103·6° in the morning and 107° in the evening.

It is hardly necessary to give in detail the progress of the case for the nine days during which it was observed in hospital. The salient points were the following. As regards the state of the nervous system there was very little change from the state as described on admission. Unconsciousness persisted to the end, though during the last two days of life there were faint indications of a response to simple requests when made repeatedly. The evacuations were passed into the bed after the first day. At various times it was thought that some signs of local nerve disease had been detected—such as rigidity in one or the other upper extremity—but these signs proved to be of the most transient description and changed from day to day. There was no sign of pain, the patient lying quietly on her back. The only positive indication of enteric fever (apart from the Widal reaction) was the presence of what appeared to be typical typhoid spots on the trunk. These never amounted to more than five or six, but they were quite characteristic and developed in crops which faded in from 24 to 48 hours. None came out, however, after the third day from admission.

On Jan. 27th lumbar puncture was performed in three places between the second and third and third and fourth lumbar vertebræ, but not a drop of fluid was obtained, though there seemed to be no doubt that the needle entered the spinal theca. The bowels were kept open by means of enemata, the stools being in no way abnormal. Nasal feeding was necessary throughout the illness. Treatment was of course symptomatic and consisted mainly of antipyretic measures, tepid sponging in the earlier stage and cold water or ice packs in the later. Any good effects obtained were merely transitory. Besides this hypodermic injections of strychnia were administered and oxygen inhalations were repeated frequently during the last 24 hours of life.

*Diagnosis.*—In spite of the unusual features of the case the presence of the characteristic spots on the abdomen at once raised the question of typhoid fever, and this suspicion soon received confirmation from the positive result of Widal's test. The day before the patient's death still further confirmation was obtained by the admission into the hospital of a brother suffering from typical enteric fever and soon afterwards another member of the family came in with symptoms of the same disease. It was hoped that the lumbar puncture might have thrown light on the nervous symptoms which formed the dominant feature of the case clinically. It will be seen that the necropsy failed to explain why no fluid was obtained at any of the three attempts. An attempt to cultivate the bacilli from the urine also failed owing to the contamination of the specimen. The diagnosis was therefore not placed altogether above doubt till after death.

*Necropsy.*—The post-mortem examination was performed by Dr. C. R. Box 24 hours after death. The condition of the alimentary canal was perfectly normal from the fauces down to the rectum. Peyer's patches were not swollen or even hyperæmic, and there was no trace anywhere of ulceration. The solitary follicles were equally unaffected. The mesenteric glands were enlarged and succulent. The vermiform appendix was normal. The spleen was little above the average size, weighing less than six ounces, and was firm in texture. Under the usual precautions cultures were made from its pulp, the results of which are given in Dr. Jenner's report below. The liver and biliary passages showed no deviation from the normal. In the thoracic organs the only pathological changes visible were a marked enlargement of the bronchial glands and some collapse of the lower lobe of the right lung. The larynx was healthy and there was no sign whatever of old or recent tubercle. The nervous system showed no change. The cerebro-spinal fluid was quite limpid and normal in amount. There was the usual free communication between the cerebral and spinal divisions of the cavity, and no explanation was forthcoming as to why the repeated attempts to withdraw the fluid by puncture failed. One puncture mark was detected in the theca in the lumbar region. Various articulations were examined and found to be healthy.

*Bacteriological examination.*—The following is the report of Dr. Louis Jenner: "Six colonies were selected for investigation. Subcultures were made from these on to agar slopes. Subcultures were made again from these into melted gelatin. These were incubated at 22° C. Growth occurred in all, but there was no production of gas. One of the agar subcultures was selected for further investigation. Microscopically the growth showed a motile rod varying in length. This stained with the usual laboratory stains, but lost the colour by Gram's method. Subcultures were made on various media. On potato a colourless growth resulted. In sugar agar (glucose 2 per cent.) growth took place all along the line of puncture, but no gas was formed. On gelatin slopes a white transparent growth resulted resembling that of bacillus coli communis or bacillus typhosus. The colonies on gelatin were typical. On litmus agar there was a very slight production of acid followed by an alkaline reaction. In peptone water there was no formation of indol, as tested by Kitasato's method. In lactose broth there were no bubbles of gas. In cover-glass preparations stained to show them a larger number of flagella were seen on individual bacilli than ever occur on bacillus coli communis. The organism clumped readily in a dilution of 1 per cent. with serum from a known case of typhoid fever. The organism found is, therefore, bacillus typhosus."

*Remarks by* Dr. TURNEY.—It would be superfluous to insist upon the features, apart from the absence of intestinal lesions, which distinguish the above case from ordinary typhoid fever. But even among cases of typhoid fever without disease of the intestines it presents some features of interest. These cases, of which a fair number are now on record, may be divided into several groups. The first group includes those cases which after running a true clinical course as typhoid fever are found post mortem to lack the local lesion. In the second group, on the other hand, the

clinical course has been unusual and often absolutely unlike that of typhoid fever. The symptoms may be referable to the cerebro-spinal system in one case, to the biliary channels in another, and to the respiratory tract in yet another. Post mortem the findings correspond to the distribution of the symptoms during life; at one time they reveal a suppurative cerebro-spinal meningitis, at another an empyema, and at another a purulent infection of the bile-ducts, but in all cases alike the bacillus typhosus is found in more or less pure culture in the exudations. In the third group the symptoms during life and the findings after death correspond rather to what may be called a typhoid septicæmia—that is to say, to an intense poisoning with the organism but without any localised specific inflammation. To this last class the case just described appears to belong. The predominance of the nervous symptoms is not explained by the presence of any local infection and in all probability is due to an inherited neurotic temperament of which the family history gives strong indications. It is unfortunate that the blood was not examined for bacilli during life.

## SALFORD ROYAL HOSPITAL.

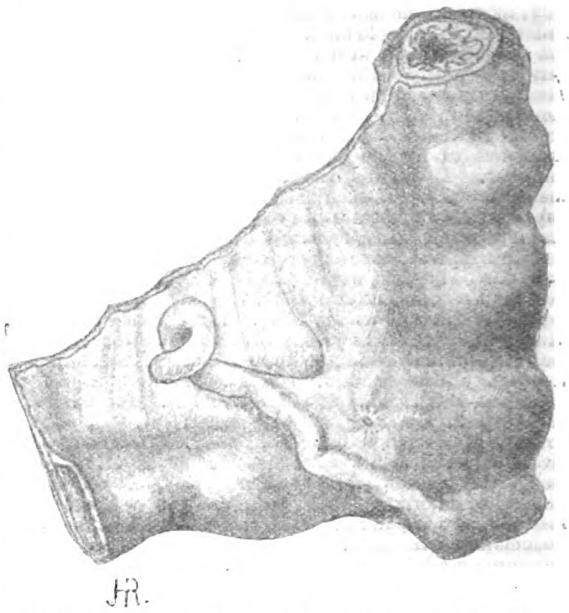
### FOUR CASES OF ACUTE ILEO-CÆCAL INTUSSUSCEPTION; TREATMENT BY LAPAROTOMY WITH REDUCTION OR EXCISION.

(Under the care of Mr. J. HOWSON RAY.)

THE value of primary laparotomy in intussusception is now widely acknowledged, and the results are very fair, though in many cases some days have been allowed to elapse before the patient is brought for treatment. When the operation is performed early the percentage of recoveries is high, but it is difficult to obtain exact statistics, as in so many cases inflation and injection have been attempted previously to operating. When some days have elapsed and adhesions have formed the mortality is much higher, especially if it be found necessary to resect a portion of the bowel. Intussusception is especially dangerous in very young children, as they are prone to suffer severely from shock. In all of the four cases recorded below the patient was under nine months old, and in the two cases which ended fatally the intussusception had existed for several days, and in one of them an enterectomy had to be performed. Within the last few years many cases of laparotomy for intussusception have been recorded, but still more records are required in order to determine the best methods of operating. It has not yet been shown whether it is desirable or not to suture the mesentery after reduction; it must certainly tend to prevent any return, but it prolongs the operation, though only very slightly.

CASE 1.—A strong, well-nourished child, aged eight months, was admitted to the Salford Royal Hospital on July 4th, 1899, with a history of two days' illness, having an acute onset, and marked by vomiting, the passage of blood and mucus per anum, severe abdominal pain causing the child to scream loudly and to draw up the legs, tenesmus, and shock. The abdomen was moderately distended, but it presented a loss of normal resistance over the right iliac fossa, whilst a "tumour" could be palpated extending from the middle line above the umbilicus to the left hypochondrium and then down the left flank to the region of the sigmoid flexure. A finger introduced into the anus at once encountered the apex of the intussusception, which readily came into view when the child strained. The child's condition permitted of no delay and a median laparotomy was performed, the incision extending from the umbilicus to the pubes. Through this incision, after squeezing the intussusception from the rectum and sigmoid to the descending colon, the "tumour" was protruded into hot damp towels, and reduction was rapidly effected to the last couple of inches, where the tucked-in appendix delayed the reduction considerably. After reduction a chromicised catgut suture was passed through the meso-appendix and the left or deep face of the ileo-colic mesentery, so as to draw these together, to excite some adhesion, and to render recurrence unlikely. The position of this suture is shown in Fig. 1, which represents the deep aspect of the ileo-colic union, the appendix, the meso-appendix, and the cæcum. The knot of the suture in Fig. 1 lies under cover of the meso-appendix. The abdomen was next flushed out with warm salt solution, and the abdominal incision was rapidly sutured with one row of silkworm-gut sutures. Dry dressings and strapping having been applied, with a body bandage over all, the child was put to bed, and he rallied fairly quickly from the operation. The temperature rose to 102° F. for two days after the operation and then it fell to normal and remained so throughout. The mother fed her

FIG. 1.



The ileo-cæcal junction and appendix viewed posteriorly and showing the meso-appendix, with loop of suture uniting this to the deep face of the ileo-colic mesentery. The ends of the suture lie under cover of the meso-appendix.

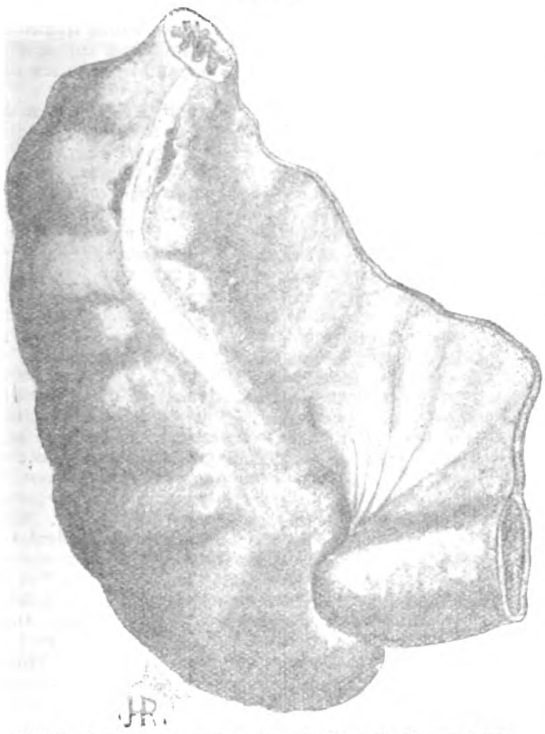
child from the breast by leaning over the cot so as to place the nipple to the infant's mouth, and she repeated this procedure every two and a half hours or three hours by day, and less often by night, for three weeks, when the child was quite well and was able to leave the hospital. (He has remained in good condition since.) The sutures were removed on the tenth day. The bowels acted on the first day after the operation and regularly afterwards. The child had no food beyond the mother's milk.

CASE 2.—The patient, a child, aged seven months, was admitted to the Salford Royal Hospital on July 7th, 1899, with a history of intussusception of 12 hours' duration, marked by sudden onset, with pain, and the discharge of blood and mucus per anum. The boy was puny and a "tumour" could be made out occupying the region of the transverse colon and extending to the left hypochondrium. There was also the *signe de Dance*. Shock, though present, was not pronounced, but an injection having failed to reduce the intussusception median laparotomy was carried out below the umbilicus, and by introducing a finger and thumb it was possible to express the "tumour" from the left hypochondrium to within the right iliac region. The last part of the intussusception was brought into the wound and with some difficulty the appendix was dislodged and reduction was effected. A catgut suture was passed through the meso-appendix and the ileo colic angle of the mesentery as in Case 1. About 18 inches from the cæcum a small double enteric intussusception was found. Here a segment of ileum, about one and a half inches long, contained short ascending and descending intussuscepta which were readily reduced. This enteric intussusception was secondary to the more serious lesion and the intestine at this point did not appear to be damaged or bruised. The abdominal incision was closed as in Case 1. Here also the mother fed the child from the breast soon after the operation and gave most of the nourishment taken in the first week. Later, as her supply was far from abundant, additional nourishment was given from the bottle with diluted cow's milk. The bowels were moved two days after the operation

and thenceforward with more or less regularity. The temperature rose after the operation to 100·2° F. and then fell, rising again on the third day to 103° owing to a superficial abscess. At the end of a week the temperature fell to normal and remained so. The sutures were removed on the tenth day and on the nineteenth day after the operation the child left the hospital soundly healed.

CASE 3.—The patient, a boy, aged seven weeks, was admitted to the hospital on Jan. 15th, 1900, with a history of acute obstruction for five days. The child was suffering from extreme shock, and the greatly distended abdomen permitted with difficulty the diagnosis of a tumour occupying part of the right iliac and lumbar regions. A little blood and mucus were passed per anum shortly after admission, but examination of the rectum revealed no other abnormality. Laparotomy was performed shortly after admission, and the greatly distended coils of small intestine prevented ready access to the intussusception. On opening the abdomen some purulent fluid, having a fæcal odour, escaped, and it was found that the ensheathing layer of the intussusception had given way on the anterior aspect on each side of the lateral band, and near the apex of the tumour (as shown in Fig. 2), setting up a diffused peritonitis. The intussusception was about four inches long and was irreducible. Resection was carried out, the small intestine was drained, and the ileum was anastomosed to the ascending colon by means of a small Murphy's button. The peritoneum having been flushed with warm salt solution and cleansed, the incision in the abdominal wall was rapidly closed by silkworm-gut sutures and the child was sent to bed. Shock was most profound and was never recovered from, death taking place nine hours after operation. An examination of the abdomen after death showed no leakage from the bowel or defect in the anastomosis and practically no free fluid in the peritoneum. The excised intussusception was found to have extensive recent adhesions between the middle and innermost layers.

FIG. 2.



Ileo-cæcal intussusception excised in Case 3. Shown from the anterior aspect. The rent in the ascending colon near the apex of the intussusception is bridged across by the lateral longitudinal band.

CASE 4.—A female infant, aged five months, was admitted to the hospital on June 15th, 1900, with a history of two and a half days' acute obstruction, the passage of blood and mucus per anum, and the presence of a tumour which was obscurely palpated in the lower umbilical and upper hypogastric regions at some distance from the surface. Examination per rectum revealed nothing but a little blood and mucus. The *signe de Dance* was well marked and there was severe peritonism. Laparotomy was performed half an hour after admission and the intussusception was found to occupy a deep position and to extend from the right pelvic brim nearly to the left hypochondrium. The small intestine having been retracted within the limits of the abdomen, the intussusception was reduced, but the last two inches gave very much trouble and required traction as well as expression to effect complete reduction. As the tucked-in appendix was extruded a depressed patch of doubtful vitality was noticed in the ascending colon, evidently due to the pressure of the appendix itself. The child's condition was bad, however, and it was decided to do nothing further except to suture the meso-appendix as in Case 1 and Case 2. The abdomen was rapidly closed as in the other cases. After the operation the temperature rose to 101° F.

TABLE GIVING PARTICULARS OF FOUR CASES OF ACUTE ILEO CÆCAL INTUSSUSCEPTION TREATED BY LAPAROTOMY WITH REDUCTION OR EXCISION.

| Date of admission to hospital. | Sex and age. | Character and extent of intussusception. | Duration of symptoms before admission. | Physical signs noted on admission. | Operation. | Anæsthetic. | Feeding. | Result. |
|---|---|---|---|---|---|---|---|---|
| July 4th, 1899. | M., 8 months. | Ileo-cæcal intussusception reaching to the anal canal. | Two days. | Blood and mucus per anum; vomiting and tenesmus; *signe de Dance*; tumour; shock. | Laparotomy and reduction. Suturing the meso-appendix to the mesentery. | Chloroform and ether. | Entirely by mother's breast. | Bowels acted on day of operation. Recovery. |
| July 7th, 1899. | M., 7 months. | Ileo-cæcal intussusception reaching to the splenic flexure; also a double enteric intussusception. | 12 hours. | Little blood per anum; no vomiting, and little tenesmus; *signe de Dance*; tumour; slight shock. | Laparotomy and reduction; fixation suture. | Chloroform. | Partly by mother's breast; also by bottle. | Bowels acted two days after operation. Recovery. |
| Jan. 15th, 1900. | M., 7 weeks. | Ileo-cæcal intussusception in right flank. Rupture of the colon. Peritonitis. | Five days. | Vomiting; blood per anum; "tumour" in the right flank, which was palpated with difficulty; extreme shock. | Laparotomy; excision of the intussusception; ileo-colic end-to-end anastomosis by Murphy's button. | Chloroform. | Diluted milk from teaspoon. | Death in nine hours. |
| June 15th, 1900. | F., 5 months. | Ileo-cæcal intussusception placed deeply towards the middle line and apparently three and a half inches long. | Two and a half days. | Vomiting; blood and mucus per anum; *signe de Dance*; severe peritonism. | Laparotomy and reduction; fixation suture. | Chloroform and A.C.E. | Four times from mother's breast. | Bowels acted in 14 hours. Death in 30 hours. |

and the child was restless, refusing all nourishment when first offered. About four hours after the operation the child was fed from the breast and subsequently on three occasions. About 14 hours after the operation the bowels were moved fairly well, a natural motion was passed, but the child failed rapidly about 24 hours after laparotomy and died from shock six hours later. Post mortem the peritoneum appeared to be quite normal, there was no recurrence of intussusception, and some adhesions had formed between the meso-appendix and the mesentery. There can be little doubt that earlier operation should have saved this patient.

*Remarks by* Mr. RAY.—The surgical treatment of acute intussusception presents many features of great interest and although the results of treatment by laparotomy and reduction, where this is possible, are not always so good as might be expected, failure is usually due to the fact that operation has been postponed until the involved portion of gut has been most seriously damaged, or that the initial shock and peritonism have caused too deep an impression to be removed by any treatment. In THE LANCET of Nov. 12th, 1898 (p. 1262), I reported a case of acute ileo-cæcal intussusception where laparotomy and reduction revealed a serious lesion in the ascending colon, and where death followed from continued shock in nine hours after operation. Since reporting that case the above cases of acute intussusception have been under my care, all being of the ileo-cæcal type. In three instances laparotomy and reduction were carried out and resulted in two recoveries and one death. In the remaining case the intussusception was irreducible, and, moreover, the ascending colon forming the intussuscipiens had perforated in two places; here the entire intussusception was excised and end-to-end anastomosis was performed by the use of Murphy's button, but this case terminated fatally. The duration of intussusception was 12 hours and two days respectively in the two successful cases, whilst it was two and a half days and five days respectively in the two fatal cases. The irreducible variety occurred in a child, aged seven weeks; the remaining children were aged eight months, seven months, and five months respectively and in each of these the mother fed the child from the breast after operation. In all four cases either a more or less definite tumour or the *signe de Dance* (loss of resistance to palpation over the right iliac fossa) could be made out and in all the cases an acute onset was speedily followed by the passage of blood and mucus per anum. It will be noticed that in three cases the patients were males and in one case the patient was a female. In the accompanying table will be found the leading features of each case.

## STATE HOSPITAL, JAMMU.

### TWO CASES OF RENAL SURGERY.

(Under the care of Lieutenant Colonel JOSHUA DUKE, I.M.S., Resident Surgeon in Kashmir.)

THE difficulty of detection of a renal calculus is often very great and needling has in many cases utterly failed to discover the presence of a stone which has been found later. The Roentgen rays are sometimes of value, especially when the stone is composed of calcium oxalate, for a uric acid stone gives but a very faint shadow. Probably the best procedure to adopt when palpation of the kidney gives no indication of the presence of a stone is to make an incision along the convexity of the kidney, laying open the cavity of its pelvis. In this way the whole of the organ can be very thoroughly explored and the stone can almost certainly be found.

CASE 1. *Nephrolithotomy.*—A sepoy in the Imperial Service troops, Kashmir, came before Lieutenant-Colonel Duke at an annual invaliding board in December, 1898. The patient then complained of severe pain in the right hypochondriac and lumbar regions. He said that this pain rendered his life a burden to him and that he could serve no longer as a soldier. Inquiry proved that he had previously undergone an operation at Gilgit for the relief of the pain and he showed a scar in the right loin. He was therefore admitted to hospital for further examination and operative treatment. A telegram was sent to the agency surgeon at Gilgit (400 miles distant) inquiring whether the man's statement was correct and a reply was received by wire saying that an operation had been performed—the kidney had been manipulated but no stone was found. Owing to the kindness of Major Roberts, I.M.S., Lieutenant-Colonel Duke is able to give the patient's previous history and a note on the primary operation.

The patient, who was 28 years of age, was admitted to the Military Hospital, Gilgit, on Jan. 23rd, 1899. He complained of pain in the right loin. Sometimes this pain was situated in the loin and at other times over the sacro-iliac joint, radiating to the other side. The urine contained albumin. As the case progressed the amount of albumin varied from one-eighth to one-sixth, sometimes almost disappearing. There was no blood. About the middle of April he began to have pain radiating from the loin into the right groin and testicle. As there was no improvement under treatment it was decided to explore the kidney on the supposition of stone, although the amount of albumin in the urine was not in favour of this.

An operation was performed on May 8th, 1899. The usual oblique incision was made in the right loin and the peritoneal fat was exposed. This was stripped off and the anterior surface and the hilum were fully exposed to the touch of the finger. The kidney was judged to be small and no prominence could be made out on any part. The posterior surface and ureter were also explored. It was not judged necessary to try the needle. Deep catgut sutures were placed in the muscles and a drainage-tube was inserted in the wound which healed without any complication. After the operation there was an interval without pain in the loin, but this symptom returned. The patient was sent back to Kashmir and Jammu, leaving Gilgit on June 16th, 1899.

On August 24th, at Jammu, the urine was of specific gravity 1026 and contained one-quarter albumin and lithates in abundance. He was re-admitted into the State Hospital, Jammu, on Dec. 26th, 1899. There was then severe and almost constant pain in the right hypochondriac region and in the right loin. The pain was aggravated by pressure before and behind. The urine was normal in every respect.

The second operation was performed on Jan. 1st, 1900. The right loin was opened for the second time. The incision was now made parallel with, but fully half an inch posterior to, the primary scar. The renal fat was exposed and some was torn out, and the kidney was brought well into view. Careful palpation revealed nothing. Needling was then commenced and six punctures were deeply made in various positions. Nothing could be felt and Lieutenant-Colonel Duke began to despair of finding anything. At the seventh puncture, however, made from below upwards a stone was felt and then struck on audibly. A deep incision was made and a Thompson's sound was passed. This at first entered the ureter, running easily; it was then withdrawn and turned and struck the stone in the upper calyx of the kidney with a metallic noise. The opening was then enlarged, free bleeding ensuing. The finger was now passed into the hilum on to the stone. The calculus, however, was firmly adherent and its pointed apex was imbedded, so that it had to be slowly peeled off and loosened. It was then removed with forceps. The hæmorrhage was controlled by sponge-pressure and after it had ceased a drainage-tube was inserted and the wound was firmly closed. The stone, which was roughly triangular in shape, weighed on removal 36 grains. The patient did well after the operation, though a good deal of blood was passed in the urine, a symptom which continued until the ninth day. On Jan. 15th the drainage-tube, which had been frequently shortened, was taken out and the sutures were removed. There was slight sweet discharge. The urine contained mucus and lithates but no blood or pus. On Feb. 1st the wound was soundly healed and the patient was up and about.

CASE 2. *Nephrotomy.*—A Hindu male, aged 35 years, was admitted into the State Hospital, Jammu, on March 16th, 1900. Ten years ago he had an acute attack of pain in the left lumbar region which lasted for 12 hours and was relieved by taking a warm drink, prescribed by a native physician. The pain was associated with a sensation of something rough passing down from the kidney and the patient thought that his left testicle was drawn up. Three years later he passed some sand and gravel with his urine. Four years subsequently he had another attack of lumbar pain similar to the first. There was no history of hæmaturia or definite pain with drawing up of the testicle. He had never had retention of the urine. His general health had failed since these attacks. On admission there was marked tenderness on pressure over the lower border of the right kidney below the rib, the patient wincing when the thumb was pressed on.

The pain was increased when the hand was placed over the abdomen and pressure was made from behind. He complained of a sensation of something rough moving in the region of the kidney. The above were the only symptoms. The urine was of specific gravity 1029 and was healthy in every way.

An operation was performed on March 21st, 1900. The kidney was exposed in the left lumbar region by an incision four inches in length. About two inches of perirenal fat were removed and the kidney was brought into view, but not outside the loin. On drawing the lower end of the kidney into the wound a small cyst of the size of a pea was seen. This was needled and a little yellow serum was evacuated. On passing the needle in deeper some more of the same serum (almost pus) oozed up. The needle was then passed in deeply at the lower fourth and struck on what felt exactly like a stone or concretion. A cataract knife was passed down over the needle, which was withdrawn, but no stone was felt, although the needle had given the actual sensation of hitting a stone. A free incision was then made in the lower part of the organ and the finger was passed in but nothing could be felt. A sound was then inserted which, however, did not pass down the ureter owing probably to the incision being in the lower third of the organ. The finger was then thrust on the hilum. All the calyces were explored but no stone could be felt with the finger inside and careful palpation outside. Several small nodules or lumps were felt; all these were needled. They were probably small cysts of the same nature as that seen on the surface. The operation had therefore unwillingly to be abandoned, although the operator could have sworn that a stone or concretion had been originally struck on. It may be noted that while exploring with the finger inside the respiration twice stopped. The hæmorrhage in this case was very trifling. A drainage tube having been inserted, the deeper structures were drawn together by catgut sutures and the wound was firmly closed by six silk sutures. One-third of a grain of morphia was injected after the operation, as the kidney had been severely handled.

On March 22nd the patient passed a restless night. The dressings, which were soaked with bloody serum, were changed. The temperature was 102° F. The patient had a cough and there was viscid white expectoration pointing to pneumonia. On the 23rd the temperature was normal, the pain was much less, and the general condition was satisfactory. On the 24th he was doing well. On the 27th the urine was still smoky. There was a discharge from the wound with a uriniferous smell. The cough was still present, with frothy expectoration; the respiratory sounds were clear over both lungs. On April 3rd and 4th there was a rise of temperature in the evening. On the 5th the dressings were still soaked with a uriniferous discharge. The lower two-thirds of the wound had healed but there was no attempt at union in the upper third, which was a fistulous track four inches deep. The urine was now quite clear. There was an erysipelatous blush around the wound and the interscapular region. The patient was removed to a separate room, the ward in which he had been treated being rather overcrowded and occupied by some very foul cases, including famine-stricken patients with sloughing ulcers. To continue briefly, the patient was brought to death's door by this and subsequent erysipelatous attacks from which recovery was slow, and he was not discharged from the hospital until June 3rd. The wound had then completely healed, the process of union being retarded by consecutive attacks of erysipelas. There had been no recurrence of pain in the loin ever since the operation and the deep-seated tenderness over the kidney was no longer complained of.

*Remarks by* Lieutenant-Colonel DUKE.—Considering the enormous preponderance of cases of stone in the bladder in India and the extensive removal of calculi by litholapaxy, it is curious that stone in the kidney is comparatively rarely met with, and surgeons in India do not appear to have the opportunities of exploring the kidney that fall to their *confrères* at home. When Mr. Henry Morris, the great pioneer and exponent of kidney surgery in England, was house surgeon at Guy's Hospital I had the honour of being dresser at that institution; but during my period of studentship I cannot recall seeing a kidney cut down on, nor, unfortunately, have I ever seen this operation performed by a skilled surgeon. In Indian civil and hospital practice, however, one has to take every case that comes to hand. As bearing on this subject since my case in 1895 of nephrotomy for neuralgia of the kidney,[1] though I have performed litholapaxy many times the above two cases are the only ones that have occurred in my practice. The points of interest in Case 1 are (1) the presence of a large though transient quantity of albumin, and (2) the fact that simple manipulation failed to discover the presence of a calculus. In Case 2 the operation only revealed cystic disease of the kidney. No stone was found although the kidney was most freely handled and examined. It is just possible that a small stone was pushed on or slipped into the ureter, which was not carefully catheterised.

# Reviews and Notices of Books.

*Manual of Midwifery.* By W. E. FOTHERGILL, M.A., M.D. Edin. Second edition. With double Coloured Plate and 76 Illustrations in the text. Edinburgh: W. F. Clay. 1900. Pp. 506. 8vo. Price 9*s.* net.

WE are glad to see by the appearance of a second edition that this very excellent little manual has met with some success. Owing to the short time that has elapsed since its first appearance very little alteration has been required to bring it up to date. The author has succeeded in doing this without materially adding to its size, the increase in the number of pages being only about 20. Amongst the additions we notice a short account of Van Tussenbroek's case of ovarian pregnancy. The section devoted to the subject of posture during labour has been largely added to and diagrams have been introduced to show the advantages derived from an adoption of Walcher's position. Dr. Fothergill arrives at the following conclusions with regard to the position of the patient: 1. For labour presenting no difficulty the left lateral posture is best. 2. If the head be arrested at the brim Walcher's posture, legs hanging down. 3. Head arrested at the outlet of the long pelvis, lithotomy posture, legs pressed against the abdomen. 4. Head arrested on the perineum, legs extended at the hips.

In a short account of the organisms most commonly met with in cases of puerperal infection too much is, perhaps, said about the bacillus coli communis. It has yet to be proved with certainty that either the staphylococcus or the bacillus coli communis can give rise to septic infection as opposed to septic intoxication. With the statement that most cases of "fever during the puerperium are not cases of puerperal septicæmia" but are due to the absorption of poisonous substances from the alimentary canal we entirely agree.

In an appendix Dr. Fothergill gives a short account of the so-called hepatic toxæmia of pregnancy. Its relation to the minor and major disorders of pregnancy and its proper treatment are fully discussed.

Several new figures have been added, including the microscopic appearances of the decidua and villi and illustrations of fleshy moles. We would like to suggest to the author that in place of Fig. 9—an inaccurate diagram of the placenta—he should insert in another edition either a new and accurate diagram or one of the very excellent drawings of the placenta to be found in Varnier's "Obstétrique Journalière." The book contains a clear and good account of the facts of midwifery and is well worth reading.

*Essentials of Diagnosis.* By SOLOMON SOLIS-COHEN, M.D., and AUGUSTUS A. ESHNER, M.D. Second edition, revised and enlarged. Illustrated. London: Henry Kimpton. 1900. Pp. 391.

THE first edition of this little work, published in America in 1892, constituted one of the series known as Saunders's Question-compends. Its popularity among medical students in America to-day justifies a second edition and warrants its inclusion in Kimpton's Students' Series. In its present form

[1] Vide THE LANCET, August 17th, 1895, p. 407.

it enters into competition on even terms with our own Aid Series and such students' digests as are intended to assist in the rapid preparation for medical examinations. The new edition is enlarged, revised, and brought up to date. As regards the new subject matter that which deals with those interesting and obscure diseases, or symptoms, known respectively as acromegaly and pulmonary hypertrophic osteo-arthropathy, appears most complete and suitably illustrated.

The method adopted in "Essentials of Diagnosis"—namely, that of question and answer—certainly renders its highly condensed pages lighter and more interesting reading than a mere abstract covering the same ground. It conduces, however, to a style of expression which is dogmatic and not always justifiable even in the formulation of definitions intended solely for consumption by students. For instance, the differential diagnosis between rheumatism and gout and between hæmatemesis and hæmoptysis must strike the reader as singularly inadequate and impracticable. And when the student learns from his "essentials" that measles are only liable to be confounded with typhus fever he may well ask himself whether the conditions of disease in this country and in America are sufficiently identical to justify the adoption of a common guide to diagnosis. The definition of rachitis as a disease practically confined to the perverted development of bone in growing children is hardly one which we should expect to learn from America, the Mecca of pediatrics.

The *lapsus calami* of "chordæ tendinea," an excusable error in a first edition, jars rather unpleasantly when perpetuated in a second and "thoroughly revised version." As a cram book for English students "Essentials of Diagnosis" must stand or fall by its own merits, but we would once again warn students against adopting such books in place of the recognised text-books. A "cram-book" may be employed to *test* a student's knowledge but should never be used to *acquire* that knowledge. Students, moreover, will be well advised to recognise that the nomenclature and orthography of American authors are not always in harmony with English ideas and usages.

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*Lehmann's Medicinische Handatlanten. Band VII.: Atlas und Grundriss der Ophthalmoscopie und Ophthalmoscopische Diagnostik.* Mit 149 farbigen und 7 schwarzen Abbildungen. Von Professor Dr. O. HAAB in Zürich. Dritte stark vermehrte Auflage. (*Lehmann's Medical Hand-Atlases. Vol. VII.: Atlas and Elements of Ophthalmoscopy and Ophthalmoscopic Diagnosis.* With 156 Illustrations (149 coloured). By Professor HAAB of Zürich. Third edition, considerably enlarged). Munich: Lehmann. 1900. Price 10*s.*

THIS volume is one of 30 illustrated manuals published by M. Lehmann, written by specialists and intended to assist students in their studies. Other volumes deal with gynæcological operations, with normal and with pathological histology, with operative surgery, cutaneous diseases, bacteriology, and other branches of medicine. The chromolithographs are very fair representations of the principal forms of disease likely to be met with in practice, and this edition has been considerably enlarged, not only by the introduction of new plates of the fundus oculi in disease, but by others which display the appearances presented in microscopical sections. Thus Fig. 15 shows a section through the optic nerve and disc in a case of papillitis or stauungspapille; Fig. 21 a section through the optic nerve in a case of atrophy of the nerve; Fig. 24 a section of the normal globe close to the margin of the cornea, whilst others exhibit the structures in the vicinity of the ciliary region, as well as the appearances presented by the excavated optic nerve papilla in glaucoma; and Fig. 27 illustrates the retina in Bright's disease. The new coloured drawings of the fundus include one showing air-bubbles in the vitreous after injury, others show retinal arterial disease in syphilis, detachment of the retina at an early stage of its development, senile pigmentation of the retina, and atrophy with the formation of holes in the retina near the macula lutea. There is a short introductory essay of 82 pages on Ophthalmoscopy generally, and a brief but intelligible explanatory note giving an account of the peculiar features accompanies each drawing. The price of this useful volume is remarkably moderate considering the number of coloured plates it contains and the care with which they are drawn, and the student and general practitioner will alike find it a useful help in the diagnosis of ophthalmic disease.

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*Troubles Mentaux de l'Enfance. Précis de Psychiâtrie Infantile.* (*Mental Troubles of Childhood.*) By Dr. MARCEL MANHEIMER. Paris: Société des Éditions Scientifiques. 1899. Crown 8vo. Pp. 188. Price 4 francs.

A SPECIAL study of these diseases on the part of general practitioners is desirable partly because the effects of disturbances, organic or functional, on the child's brain differ from those produced by similar causes on the adult organ, but mainly because in education we have a remedial agent the value of which is unknown to, or underrated by, many of those who are in charge of mentally deficient children. Though no amount of training will remove an organic lesion or altogether repair the faults of heredity, yet, as Professor Joffroy says in his introduction to Dr. Manheimer's book, a properly directed education constitutes the best prophylaxis against insanity in the case of children hereditarily disposed to it. This little book epitomises in plain language, for the benefit of teachers and practitioners, the views held by most alienists on the subject of the mental diseases of childhood. While his object is a laudable one it is doubtful if the author gets far on his way to achieve it. He succumbs too often to the besetting sin of the *précis* writer and gives us a catalogue instead of an epitome. The reader who has studied larger works and is familiar with the subject to some extent will find this volume useful as a convenient way of refreshing his memory, but we fear that it will prove somewhat too concentrated a food for the digestive powers of a beginner. The book is divided into five parts. The first discusses shortly the etiology of mental affections. Here heredity plays an all-important rôle; it is, as the author puts it, "the cause of causes." Whether one parent exercises a greater influence on the child than the other has not been determined yet, but it is certain that where both parents are mentally affected or are alcoholic the chances of the child escaping some hereditary taint are small. Part II. deals with disturbances of emotion, intelligence, and consciousness. In the third part the author touches on pure psychoses, mental degeneration, neuroses such as epilepsy, &c. The medico-legal aspect of the subject occupies Part IV. French law, we are told, does not recognise full civil responsibility till the age of 21 years is reached. Full criminal responsibility is attained at 16 years of age. Below that age the accused is presumed to be innocent, although culpability may be proved. In the case of infants who are mentally deficient the degree of responsibility appears to be estimated by the general condition of the individual. In Part V. the author leaves himself but little space for his views on treatment except as regards "suggestion." He is of opinion, rightly as we think, that recourse should be had to hypnotic suggestion but rarely and only where other methods are unsuccessful—e.g., in cases of obsession by ideas of terror or anxiety. In most other cases general treatment, with or without "simple suggestion," will be found sufficient.

The book is written very lucidly and it conveniently

summarises the more important points in our knowledge of this interesting subject.

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*Grundriss der Klinischen Bakteriologie.* (*Outlines of Clinical Bacteriology.*) By Dr. E. LEVY and Dr. F. KLEMPERER. Second edition, improved and enlarged. Berlin: A. Hirschwald. 1898. Medium broad 8vo. Pp. 450. Price 10 marks.

THIS book is intended primarily for students and practitioners. It regards the subject of bacteriology from the point of view of clinical medicine and therefore only those bacteria which are associated with the diseases to which human beings are liable are described in the text. An appendix gives a short account of some of the bacteria commonly found in earth, air, and water and ends with a chapter on Disinfection. The authors have divided their work into four parts. The first deals with the morphology and biology of bacteria in general, with immunity and infection, and with the different methods of culture and investigation; the second with the pyogenic and inflammatory bacteria; the third with the diseases caused by specific bacteria; and the fourth with infection by hypho- and blasto-mycetes and animal organisms such as the parasite of malaria, &c.

The first part is the best in the book. The chapters on Infection and Immunity give a lucid description of a difficult subject, while the section on the preparation of culture media and staining reagents is detailed and accurate. In the rest of the book the authors are somewhat hampered by the difficulty of treating a large matter shortly, and sometimes in the effort to make things plain for the beginner they yield to the classifier's peculiar temptation and indicate as distinct boundaries which are at present ill-defined—e.g., in the matter of croupous and broncho-pneumonias. The difficulty, again, of determining in a hospital whether a case of nasal discharge or sore-throat in which the Klebs-Loeffler bacillus has been found is to be regarded as one of diphtheria or not is often much greater than the book would lead the student to suppose. We have become so accustomed nowadays to associate malaria with mosquitoes that it is curious to find a writer only two years ago saying that "the conveyance [of malaria] by insects is theoretically possible and is even assumed by certain authors, but has not been demonstrated yet."

The authors have compressed a great deal of information into a little space, and their book forms an admirable introduction to the study of clinical bacteriology.

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*An Introduction to Pathology and Morbid Anatomy.* By T. HENRY GREEN, M.D., F.R.C.P. Lond., Physician and Special Lecturer on Clinical Medicine at Charing-cross Hospital and Senior Physician to the Hospital for Consumption and Diseases of the Chest, Brompton. Ninth edition, revised and enlarged by H. MONTAGUE MURRAY, M.D., F.R.C.P. Lond., Physician to Out-patients and Lecturer on Pathology and Morbid Anatomy at Charing-cross Hospital. With Coloured Plate and 337 Illustrations. London: Henry Renshaw. 1900. Pp. 596. Price 21*s.*

A REVIEW of a ninth edition of such a well-known text-book as that of Dr. T. Henry Green's "Introduction to Pathology and Morbid Anatomy" needs no remarks as to the general scope and nature of the work. Dr. Montague Murray, who has ably edited the new edition, informs us in the preface that nearly half of the subject matter has been re-written and that several new sections have been added. The introduction of no less than 180 new illustrations has resulted in some increase in the size of the book; most of these have been drawn by Mr. Collings from photographs. The artist, the editor, and the original author of the book may all be congratulated on the result. The details of the various illustrations are most clearly portrayed and beautifully reproduced.

In a large book of this nature it is difficult to select any particular portion for criticism. The chapter on Tumours occupies 72 pages and will be found to contain an immense amount of information. The principal theories which have been advanced as regards the etiology of morbid growths are carefully discussed, but it is admitted that nothing certain is at present known. The various hypotheses that have been propounded appear to embody at least portions of the truth; they point to subordinate causes which are at work in individual instances and which need a central principle to unite them into a coherent whole. Perhaps by the time the next edition of this work appears some of the institutions or observers who are conducting investigations on the causes of "cancer" will have issued their reports and some more definite knowledge will have been arrived at.

Another interesting chapter is that on Disturbances of the Circulation, and we would especially draw attention to the sections on Thrombosis and Embolism. The causation and characters of these pathological conditions are very well described. All the latest knowledge obtained by experimental research appears to have been incorporated. The pathology of infarction is somewhat obscure. In connexion with this subject the investigations of Mall and Welch as to red infarction are noted. These observers ligatured all the vascular communications of the intestine, with the exception of the main artery and vein, and then tied the bowel above and below so that the included portion was supplied by the main artery and the blood returned by the main vein. Under these circumstances no infarction resulted. They then gradually constricted the main artery, and found that when it was sufficiently compressed to stop the lateral pulsations in its branches—or, in other words, to reduce the pressure in them to about one-fifth of the normal—hæmorrhagic infarction appeared, thus proving that the diapedesis of the red corpuscles depends on marked slowing of the arterial current, by which all distinction between the axial and peri-axial streams is lost, combined with marked increase in the capillary and venous pressure. The red corpuscles are thus brought into contact with the capillary walls and possibly pass along with the lymph between the endothelial cells.

The pathology of the nervous system is so complex and so many advances have recently been made as regards its structure and functions that it has been almost impossible for anyone, except those constantly engaged in neurological studies, to keep pace with the original observations now so frequently recorded. Dr. Murray, therefore, was fortunate in securing Dr. F. W. Mott to write the chapter on the Pathology of the Nervous System. The morphology of the nervous system is first fully described and then the various morbid conditions are described *seriatim*. The section on Degeneration and Regeneration is well worthy of study, and the account of the effects of degeneration upon function is a triumph of minute and exact description. The illustrations in this chapter are excellent, many of them being borrowed from the Archives of Neurology of the London County Council.

Dr. Green's book will continue to take a first place amongst the text-books of pathology and Dr. Murray has brought the present edition fully up to date in every respect.

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*Agricultural Botany, Theoretical and Practical.* By JOHN PERCIVAL, M.A. Cantab., F.L.S., Professor of Botany at the South-Eastern Agricultural College, Wye. London: Duckworth and Co. 1900. Pp. xii.-798. Price 7*s.* 6*d.*

"ALTHOUGH the book has been primarily written for the benefit of students of agriculture, the greater portion of it

is equally well adapted to meet the requirements of gardeners and all who desire to obtain an insight into the general structure and life-processes of plants." So writes Professor Percival in his preface. We should like to go a step further and say that students of pure botany would do well to read this work, for in it will be found much information which they should possess. This is the more desirable, since many students of botany are strangely ignorant of the agricultural aspects of their subject, although the fault is not wholly theirs.

The first three parts constitute what is practically an elementary text-book of botany, the morphology, anatomy, and physiology of plants being considered. One of the chief difficulties in writing this portion of the work was, we imagine, in deciding what was necessary for the readers for whom the work is primarily intended. The author has succeeded on the whole in writing sufficient; no unnecessary details are to be found. On the other hand, there are a few points which might have been included and some facts which might have been described a little more fully. For example, on p. 18 the perisperm is not mentioned in the section dealing with the food stores of the seed. Again, on p. 141 the characteristics of the endodermis of the root might have been more fully described and less diagrammatically figured; also no mention is made of the exodermis, a layer characteristic of many roots. In the portion dealing with the embryo-sac the number of antipodal cells in this structure is given as three; this is not the case invariably. Directly following is an account of fertilisation, but no mention is made of the recent and important work of Nawaschin, Guignard, and Miss Thomas on the fertilisation of the endosperm nucleus in certain Dicotyledons and Monocotyledons. These and similar unmentioned points are not, however, vital ones, and it is perhaps only a matter of opinion as to whether they should be included or not.

On page 237 is an account of intra-molecular respiration. As Professor Reynolds Green remarks in a recent work, "The term is rather an unfortunate one, for as we have seen the study of the ordinary respiratory processes has shown that the molecule of the living substance is the seat of the changes they involve, and hence that all respiration is intra-molecular." The term "anaerobic respiration" is a much better one and is to be recommended.

It is pleasurable to see Professor Percival using the terms "wind-pollinated" and "insect-pollinated," for, as he very truly remarks, there is a certain amount of looseness in describing a plant as being insect-*fertilised* when it is intended to state that the organism is *pollinated* by insects.

Parts IV.—VI. are devoted chiefly to purely agricultural botany. They enter into the consideration of the chief plants grown on a farm, describing them and their varieties, besides entering into various facts the knowledge of which is more or less essential to their successful cultivation. The common farm weeds are also described as are the methods to be used in exterminating them.

Part VI. consists of a very valuable account of farm seeds. The remaining portions of the work are occupied by an account of the fungi, considered chiefly in relation to some common diseases of plants, and the morphology, physiology, and the reproduction of the bacteria.

The arrangement of the book leaves nothing to be desired. The method of intercalating experimental work throughout the text is an excellent one. Practical work is all-essential; and the exercises and experiments given, all of which may be easily carried out, will not fail to make the student thoroughly understand the principles and facts laid down. The illustrations, of which there are 265, are, with very few exceptions, really excellent.

Sufficient has been said to show that this work is extremely good; when properly used it will give the reader a correct and valuable insight into agricultural botany. The author is to be congratulated upon its publication.

## LIBRARY TABLE.

*The Pocket Formulary for the Treatment of Disease in Children.* By LUDWIG FREYBERGER, M.D. Vienna, M.R.C.P. Lond., Clinical Assistant, Hospital for Sick Children, Great Ormond-street; Curator of the Museum, Pathologist and Registrar, Great Northern Central Hospital. Second revised and enlarged edition. London: Rebman, Limited. 1900. Pp. 239. Price 7*s.* 6*d.*—The fact that a second edition of this little volume was called for in less than 18 months after the first publication of the book is sufficient to show that the efforts of the author have been rewarded and that there was a need for such a publication. The new British Pharmacopœia caused so many alterations in the nomenclature and composition of the various officinal preparations included in it that the "Formulary" had nearly to be re-written throughout, so that we have practically to deal with a new book. Numerous additions have been made and recipes for medicated baths have been included in the appendix. The book is conveniently arranged for purposes of reference. The drugs have been placed in alphabetical order. The text devoted to the consideration of the drugs gives successively a brief account of their properties, use, therapeutics, incompatibles, dose, correction of their taste, examples of formulæ, their antagonists and antidotes—in short, a large amount of information is given in a minimum of space. The greater number of the drugs and pharmaceutical preparations considered are included in the British Pharmacopœia. In addition will be found a considerable number of drugs which are not officinal, but which are more or less frequently employed in this country for the treatment of diseases of children. Special attention has been paid to the correction of the taste of the drugs; the minimum quantity of the flavouring agent which suffices to disguise the disagreeable taste or smell of a given drug has been fixed by experiment. At the end of the book is a therapeutic index which contains the names of the most common diseases of childhood and of the drugs which are best suited for their treatment. It also gives lists of the various classes of drugs, antipyretics, carminatives, emetics, expectorants, &c. The author has spared no pains to make his work as complete as possible and the busy practitioner will find in it most valuable aids in the treatment of his little patients. To those whose practice involves the care of a large number of children we can cordially recommend Dr. Freyberger's "Formulary."

## JOURNALS.

*Birmingham Medical Review.*—One of the original articles in the September number is a description by Dr. W. A. Potts of a case of Extreme Anasarca Complicating Pregnancy and Labour. The patient was a primipara, 32 years of age. In the ninth month of pregnancy she was "able to get about, but only with great difficulty; she suffered severe pain in the legs and thighs, which were so swollen while the skin was so coarse and dry that they suggested to the touch the trunks of trees." Labour commenced spontaneously and after it had continued for four days twins were extracted under chloroform by drawing down the feet; they were both in a condition of white asphyxia, but were resuscitated. Three days later the œdema was almost gone; the woman, however, kept her bed for a little more than a month.

*Dublin Journal of Medical Science.*—The original articles in the September number are as follows: Maternal Mortality in Childbed, by Dr. W. J. Smyly; the Teaching of Materia

Medica, by Dr. W. G. Smith; Portrush from a Medical Point of View, by Dr. J. C. Martin; and the Accentuation of the Second Sound in the Pulmonary Area, by Dr. J. F. O'Carroll.

*Mercy and Truth.*—In the September number Mr. Arthur Neve writes on Surgery (chiefly eye operations) at Mission Stations in the Punjab and Mr. Arthur E. Clayton describes his hospital and dispensary work at Onitsha in West Africa.

*Gazette Médicale d'Orient.*—This fortnightly periodical, published in French, is the journal of the Imperial Medical Society of Constantinople. The number dated Sept. 1st possesses features of exceptional interest, its 60 pages being devoted to an address delivered by Dr. B. Ritzo at an extraordinary meeting of the society held on August 31st. The occasion was the twenty-fifth anniversary of the accession of the present Sultan, and Dr. Ritzo, who is a member of the editorial staff of the *Gazette*, took for his theme the medical and hygienic work accomplished under that ruler (L'Œuvre Médicale et Hygiénique de S.M.I. le Sultan Abd-ul-Hamid Khan II., 1876 1900). The address, which must have occupied more than two hours in delivery, is full of information compactly arranged, and, representing as it does a pleasing chapter in the modern history of Turkey, it deserves to be known to writers on the affairs of that country and to those who are interested in the spread of medical education and in questions affecting hospitals. Dr. Ritzo pays a loyal tribute to the work of the Imperial Medical Society, which, as he mentions, was founded in 1854 and has a monthly grant of 5000 piastres (£45 3s.). Among the numerous military hospitals he first directs attention to the Ambulances Militaires de Yildiz, which were commenced in 1892 and now consist of 13 pavilions—three for the staff and stores and 10 for the patients, of whom at least 200 can be accommodated. The whole of the buildings, furniture, &c., were ordered in Germany. Among the civilian hospitals most space is devoted to the Hôpital Hasséki for Women, the Hôpital Hamidié for Children, the Lunatic Asylum at Top-Tachi, the Greek, Armenian-Gregorian, and French Hospitals, and the Institute for the Care of Foundlings originated and superintended by Dr. Zavitziano. A somewhat brief reference is made to the British hospitals in Constantinople, Smyrna, Jerusalem, and Jaffa. Dr. Ritzo ascribes all medical and sanitary progress in Turkey to the direct initiative of the Sultan, and on almost every page alludes to him with an Oriental fervour of admiration which is seldom if ever met with in Western writings and may be estimated from the concluding words of the address: "J'ai donc hâte de finir, afin de laisser libre cours à l'épanchement de votre cœur, qui ne peut plus se retenir de crier: Gloire à notre Auguste Souverain le Sultan Abd-ul-Hamid Khan II., le Ghazi,

"Gloire! Gloire! Gloire!"

PAUPERISM IN BARNSTAPLE.—At the meeting of the Barnstaple Board of Guardians held on Sept. 21st the Local Government Board inspector (Mr. Preston Thomas) stated that in the Barnstaple Union the pauperism was 44 per 1000, as compared with 25 per 1000 of the population generally.

LITERARY INTELLIGENCE.—Mr. Young J. Pentland will publish the following books in the autumn:—"Text-book of Physiology by British Teachers," edited by E. A. Schäfer, Professor of Physiology in the University of Edinburgh, volume II., completing the work; "Text book of Medicine by British Teachers," edited by G. A. Gibson, M.D. Edin., physician to the Royal Infirmary and Lecturer on the Principles and Practice of Medicine at the School of Medicine, Edinburgh; "Text-book of Pharmacology and Therapeutics," edited by W. Hale White, M.D., F.R.C.P. Lond., physician and Lecturer on Medicine, Guy's Hospital; "Gynæcological Operations," by Skene Keith, F.R.C.S. Edin.; and "Diseases of the Throat, Nose and Ear," by P. McBride, M.D. Edin., physician to the Ear and Throat Department, Royal Infirmary, Edinburgh.

# Analytical Records

FROM

# THE LANCET LABORATORY.

## AUSTRALIAN WINES.

(P. B. BURGOYNE AND CO., 5, DOWGATE-HILL, LONDON, E.C.)

WE have examined a number of wines submitted to us by the above firm and the following are the results of analysis. Harvest Burgundy (red): extractives, 3·15 per cent.; mineral matter, 0·32 per cent.; fixed acids reckoned as tartaric acid, 0·277 per cent.; volatile acidity reckoned as acetic acid, 0·14 per cent.; alcohol, by weight 12·85 per cent., by volume 15·86 per cent., equal to proof spirit 27·81 per cent. Harvest Burgundy (white): extractives, 1·66 per cent.; mineral matter, 0·17 per cent.; fixed acids reckoned as tartaric acid, 0·375 per cent.; volatile acids reckoned as acetic acid, 0·132 per cent.; alcohol, by weight 11·46 per cent., by volume 14·18 per cent., equal to proof spirit 24·85 per cent. Ophir red wine: extractives, 5·53 per cent.; mineral matter, 0·41 per cent.; fixed acids reckoned as tartaric acid, 0·30 per cent.; volatile acids reckoned as acetic acid, 0·096 per cent.; alcohol, by weight 13·69 per cent., by volume 16·89 per cent., equal to proof spirit 29·60 per cent. Tintara (red): extractives, 3·28 per cent.; mineral matter, 0·28 per cent.; fixed acids reckoned as tartaric acid, 0·345 per cent.; volatile acids calculated as acetic acid, 0·15 per cent.; alcohol, by weight 12·46 per cent., by volume 15·40 per cent., equal to proof spirit 26·99 per cent. There is not much variation in the foregoing figures, except in the case of the white Burgundy. The harvest red Burgundy, Ophir, and Tintara wines are decidedly heavy in character and for consumption better diluted with water. Apart from the high proportion of spirit these contain also a somewhat large amount of extractive matters. The wines, in fact, are somewhat crude in character; they do not possess delicacy. The amount of spirit considerably exceeds the normal amount in the corresponding French wines. It is possible that spirit is added as a necessity for keeping the wine in sound condition during transport. The amount exceeds, at any rate, the maximum contained as a normal product of fermentation in French wines. We consider the white Burgundy more promising than the rest. It is in general lighter in character, containing a small quantity of extractives and relatively a small quantity of spirit. It approaches nearer to the delicacy of French wines than do the other specimens. We do not doubt that the quality of these colonial wines will improve in time in the important respects of delicacy of flavour and lightness of alcoholic strength. At present they are too "generous" and "rough." It is claimed that the Ophir and Tintara wines being grown on ferruginous soil take up a notable quantity of iron. We do not regard the quantity of iron so taken up as at all important. Iron occurs in nearly all wines in much the same amount, which is generally a negligible quantity. There would be much more iron in the average daily diet of an individual than is contained in a pint of so-called ferruginous wine. We may add that we have purchased samples of these Australian wines in the open market with the view of ascertaining whether they show a constancy of composition. The following are the results. Harvest burgundy (red): extractives, 3·015 per cent.; mineral matter, 0·315 per cent.; fixed acids calculated as tartaric acid, 0·277 per cent.; volatile acids calculated as acetic acid, 0·15 per cent.; alcohol, by weight 13·46 per cent., by volume 16·61 per cent., equal to proof spirit 29·11 per cent. Harvest burgundy (white):

extractives, 1·89 per cent.; mineral matter, 0·20 per cent.; fixed acids calculated as tartaric acid, 0·367 per cent.; volatile acids calculated as acetic acid, 0·114 per cent.; alcohol, by weight 13·08 per cent., by volume 16·15 per cent., equal to proof spirit 23·29 per cent. Tintara: extractives, 2·97 per cent.; mineral matter, 0·305 per cent.; fixed acids calculated as tartaric acid, 0·36 per cent.; volatile acids calculated as acetic acid, 0·12 per cent.; alcohol, by weight 12·00 per cent., by volume 14·84 per cent., equal to proof spirit 26·00 per cent. It is pleasing to record that the results obtained with the wines purchased by ourselves are in accord with the wines submitted to us directly by the wine-merchants. The purchased wines still show a heavy alcoholic strength, a full amount of extractives, and possess generally the "stout" character of these brands. The Harvest burgundy (white) is again the exception in regard to extractives, though in the case of the purchased specimen the percentage of alcohol was distinctly higher. This variation in the amount of alcohol suggests that what is present was not entirely developed in the wine itself. Iron was found in the ash in all cases but the quantity was unimportant and hardly to be considered as a feature in spite of the fact of being grown on ferruginous soil.

### BARNANGEN'S ANTISEPTIC VADE-MECUM.

(BARNANGEN'S TECHNICAL FACTORY, STOCKHOLM; MYRSTEDT AND CO., CAMOMILE-STREET, LONDON, E.C.)

The name of this preparation is unfortunate, implying a panacea for all complaints. And this sums up practically what is claimed for it. It is said to be suitable both externally and internally, and its application is recommended, amongst many other things, for the care and preservation of the mouth, the teeth, and the skin, for various skin complaints, and internally for indigestion and sickness. According to our analysis it is a spirituous solution containing chiefly menthol and oil of cloves.

### KELPION.

(THE KELPION CO., NORGROVE-BUILDINGS, 59A, BISHOPSGATE-STREET WITHIN, LONDON, E.C.)

Kelpion is described as a stainless iodine ointment yet containing the iodine for the purpose of administration in a free state. We are able to confirm this statement, for on inunction iodine soon appears in the saliva and in the urine while the skin is not stained. Kelpion contains 5 per cent. of iodine. It is a greasy, dark-olive-coloured substance which refuses to saponify with strong soda solution. It may be concluded, therefore, that the fatty vehicle does not contain a fatty acid. On heating kelpion well above its melting point iodine is liberated. Kelpion is a marked advance upon ordinary iodine unguents and is especially suitable in painful affections of the joints and for sprains and inflammations.

### KÜGLOIDS.

(CHAS. KÜGLER, PARIS; LONDON AGENCY, MR. H. H. MASON, 7, BROADWAY, NORWOOD-ROAD, S.E.)

We failed to find any special novelty about these capsules, for in reality that is what "kügloids" are. They contain a pink-coloured oil smelling strongly of creasote, and very little further examination sufficed to show that the creasote is associated with quinine in the form of glycero-phosphate, and eucalyptol and benzoic acid are also constituents. In short, the kügloid contains those antiseptics which are of service in the treatment of respiratory ailments. The combination is said to be well borne and, in addition to acting locally, to possess tonic qualities referable to the glycero-phosphate of quinine.

### MARVIS.

(THE PATENT FISH FOOD SYNDICATE, LIMITED, BERRY-YARDS, GREENOCK, N.B.)

Marvis is a clean yellowish-white powder with a fishy odour. It is not appreciably soluble in cold water, but in hot water it forms a mucilaginous mixture due partly to the normal gelatinous constituents of the fish from which it is prepared and partly to a small proportion of carbohydrates. Marvis, in short, consists practically of desiccated fish powder mixed with a little starch. Our analysis gave the following results: moisture, 11·77 per cent.; mineral matter, 3·06 per cent.; and organic matter, 85·17 per cent. The organic matters contained no less than 62·81 per cent. proteids besides fat. The latter amounted to 2·82 per cent. of the organic matters. With marvis, therefore, a very nutritious dish may be prepared. It makes, in particular, an excellent *purée*. The flavour is that of fresh fish without any suspicion of staleness. The mineral matters contained a slight amount of iodide, but consisted chiefly of phosphate of potassium and common salt. We found a small quantity of starch present which is probably added for the purpose of making the powder homogeneous. We regard marvis as a good fish food and an introduction of distinct importance in the daily dietary.

## ASYLUM REPORTS.

*County and City of Worcester Lunatic Asylum* (*Annual Report for 1899*).—The average population of the asylum during the year was 1137 and comprised 500 males and 637 females. The admissions during the year amounted to 225 and comprised 105 males and 120 females. 15 of these—viz., 7 males and 8 females—were not first admissions. Mr. George M. P. Braine-Hartnell, the medical superintendent, states in his report that of the admissions 40 were in bad health and exhausted condition and 164 in indifferent health and reduced condition. 86 patients were discharged recovered during the year, or 7·5 per cent. of the average number resident. The deaths during the year amounted to 91 or 8·0 per cent. as calculated on the same basis. Of the deaths two were due to cardiac disease, three to epilepsy, three to chronic Bright's disease, six to colitis, 11 to pneumonia, 14 to general paralysis of the insane, 20 to senile decay, and 21 to pulmonary phthisis. Post-mortem examinations were made in 76 out of 91 deaths. A married woman on admission was in a pregnant condition and was delivered of a son. "The mother, father, and brother of the patient are or have been insane, and here is this infant with such a bad 'family history' growing up and will in all probability end by marrying." "Can anyone wonder," asks Mr. Braine-Hartnell, "at the increase of insanity when people like the above marry and are given in marriage?" One inquest was held during the year on a male patient who at the post-mortem examination was found to have had three fractured ribs. No cause could be assigned, and the jury in their verdict expressed the opinion that no blame attached to anyone on the staff. One male patient on the way to recovery was one night seized with a suicidal impulse. "He smashed the window and precipitated himself to the ground. He sustained compound comminuted fractures of both legs. The left leg has since been amputated." Two male patients were attacked with scarlet fever, one female patient with typhoid fever, and there was one case of erysipelas. Colitis was the cause of death in one male and five female patients. "Phthisis accounted for 23 per cent. of the deaths. This percentage is excessive and demands serious attention. The overcrowded state of the wards is no doubt responsible in a great measure, but not entirely, for this high mortality. ..... We require separate wards in which patients showing signs of phthisis can be isolated and treated in accordance with the latest ideas." The medical superintendent suggests that in the new asylum for the county of Worcester about to be built provision should be made for an isolation block for the housing and open-air treatment of such cases. The Lunacy Commissioners in their report refer to the overcrowding in the wards, especially on the female side, and also point out that a separate ward and day-room should be set apart for the idiot children, of whom there are 17 in the asylum and who continue to be associated with the adult insane; they express the hope that the plans of the new asylum will include separate accommodation for this class of patients. They are "glad to record that advantage is taken of the means provided by the committee for the prosecution of pathological work."

# THE LANCET.

*LONDON: SATURDAY, SEPTEMBER 29, 1900.*


WE are once more on the eve of a great and important election. According to an old theory the duty of medical men was to exhibit during the time of an election a masterly neutrality and to stand aloof as if in a superior atmosphere from the raging strife of parties. We have often of late years expressed our dissent from that view. It would be strange, indeed, if the descendants of the Founder of THE LANCET should feel themselves bound to absolute silence at an election time when great issues have to be decided which must deeply affect the welfare of the nation and of the profession which is responsible for the nation's health as well as for the health of those services on the efficiency of which the very existence of the Empire at critical moments, such as we have just passed through, may depend. If such silence would be unseemly in us it would equally be inconsistent in the members of the profession which we have the honour to represent. We have no intention in thus writing of whetting the edge of mere party spirit, but we do distinctly mean to give expression to the conviction that at a time like this the quiet, ordered influence of the medical profession should make itself felt on candidates of all parties. It does not seem as if either party had done much yet to gain the confidence and the respect of the profession. There have been lamentable exhibitions of weakness in both the great parties of the State in regard to the greatest questions of medical science. Lord ROSEBERY has recently declared the late Government to be the weakest Government he remembers—except in votes; and he takes as the first and crowning example of its weakness its action in what is essentially a medical question—its dealings with vaccination. We confess that we are not altogether sorry to see this reproach levelled at the Government. Not only did it introduce into the Vaccination Acts an unprecedented individual "the conscientious objector," but it deliberately refused to carry out its distinct promise that in the session following that in which the Vaccination Act, 1898, was passed it would bring forward legislation to secure revaccination. Medical experience has amply shown this to be little less necessary than primary vaccination. On revaccination, as we know, all officials dealing with small-pox, including those of Leicester, rely as the only security against taking the disease and spreading it. But Lord ROSEBERY should remember in turning to party use this extraordinary action and inaction of the Ministry that it was the pressure of his own party that led the Government into such aberration from the lines of its projected course. At any rate the medical profession will remember this and will not too hastily assume that the tendency to fail at critical moments in legislation based on high scientific grounds is confined to one party. Rather will they trace this tendency to a vice of our political system which gives undue weight to the most prejudiced and the least enlightened section of voters.

There are other failures in legislation which illustrate this vice. In a recent leading article we alluded to several of these. For instance, the Government deliberately threw away an opportunity of guarding the public from gross injury at the hands of Companies posing as medical practitioners; the clause might easily have been passed if Mr. RITCHIE had chosen to assert his strength as a Minister with a majority of 120 or 130 at his back. Moreover, other Bills for amending the lunacy laws, for improving the position of medical officers of health and sanitary inspectors, and a very uncontentious Bill for amending the Medical Acts, failed to pass for want of a little more interest on the part of the Government in non-political questions. There is also another measure in regard to which the medical profession has a right to feel some dissatisfaction with all recent Governments, and that is the Midwives Bill, which appears as a sort of hardy annual session after session. The Medical Acts must not be tampered with. Midwives should either be left severely alone and be employed on the sole responsibility of those who seek their services or they should be strictly subordinated to the medical profession, and a Bill should be brought in, as Sir WALTER FOSTER suggested, on the responsibility of the Government. It is not fair to lying-in women among the poor or to the medical profession that the subject should be dangled incessantly before Parliament with the risk that in the last hours of an expiring session a new class of semi-medical practitioners may be created and all the old "Gamps" left unmolested to prosecute their dirty and deadly business.

It goes without saying that we make no suggestion to our readers as to the party which they should support, but we venture to impress upon them the duty of using the election as a means of asserting the due influence of the profession in regard to questions having medical bearings and of great public moment. If "a wise physician skilled our wounds to heal is more than armies to the public weal," what may not be the value of the judgment of the whole profession at a time like this when the reorganisation of the medical services is contemplated, when the profession itself is pressed with new problems, and when public bodies are charged with ever-multiplying duties of a semi-medical kind? He must be an obtuse observer who does not perceive that questions of mere medical politics are little liked in Parliament and are severely evaded by Ministers. There is the more reason for medical men to assert themselves in general politics. It may be said that this will be unsafe as regards their professional prospects, that their *clientèle* will include men of various shades of political opinion, some of whom will be sure to be offended with their action. We very much doubt the risk and, if we admitted it, we cannot allow that it should be regarded by any self-respecting member of the profession. The election strife carried on in the manner satirised by LOVER, THACKERAY, and DICKENS may be left to the uneducated, but true politics—i.e., the science of what is best for the State, and the use of

knowledge, knowledge of health and illness, of disease and its prevention—are for the educated, and so long as this knowledge is used with dignity and discrimination so long will its exponents be respected by the men of all shades of political opinion. It is for men of liberal professions to use elections so as to raise the whole spirit and standard of political discussion.

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A PARLIAMENTARY paper dated July 9th, 1900, has been published by the India Office containing the correspondence which has taken place between that office and the Government of India on inoculation against cholera and typhoid fever. There is no need on this occasion to touch upon the first-named part of the subject, and we may confine our attention exclusively to that part which concerns preventive inoculation against typhoid fever in India. Everybody at all acquainted with the medical history of India knows the terrible drain on the young manhood of this country caused year after year by the ravages of that disease. The matter is one which gravely concerns the health and efficiency of the British army and civil service of India, but more especially the young officers and soldiers serving in that country. The aggregate loss of life caused by enteric fever is simply deplorable, to say nothing of the serious illness it always, and of the wrecked health and invaliding which it so often, occasions. In spite of all the efforts that have been made to prevent or limit the extent of its prevalence it cannot, unhappily, be said that up to the present time they have been attended with success. Under such circumstances it is not easy to exaggerate the importance of experimentally testing the value of any prophylactic method of treatment which is based upon approved scientific principles and bacteriological investigations and which promises to be of real value. Major RONALD ROSS, I.M.S., of whose scientific investigations in connexion with malaria and the malarial parasite it would be difficult to speak too highly, has brought a serious indictment against the India Office in a letter published in the *Times* of Sept. 24th, wherein he severely criticises its action in this matter of inoculation against typhoid fever. Major RONALD ROSS, in his comments on the published correspondence on the subject of inoculation against typhoid fever, says:—

"The paper contains a statement which appears to be of the most serious nature—that the Secretary of State for India refused in 1898 to permit officers and soldiers to undergo this inoculation even voluntarily. It was not merely a refusal to give the inoculation Government assistance, but a refusal to allow it to be practised on Government servants at all, even if they wished it. This ruling was made in opposition to the advice and wish of the Government of India, and seems to be still in force—though it appears to be equally opposed to the private liberty of the soldiers, the health of the army, and the progress of science."

We confess that a cursory perusal of the printed official correspondence in question did not convey to us the impression that the Government had, under the circumstances stated, once and for all expressly prohibited the practice of inoculation against typhoid fever, otherwise we should have felt compelled to concur entirely with the view taken by Major ROSS. Neither does a subsequent reference on our part to the paper containing the official correspondence make out so bad a case against the India Office as stated. It is not quite plain to us that the Government had any intention of issuing any peremptory and prohibitive order against voluntary inoculation, and we can only conclude that there has been some misapprehension in the matter. The facts set forth in the published correspondence according to our reading are somewhat as follows:—

The Government of India in November, 1897, proposed that the services of the professor of pathology at the Army Medical School, Netley, should be lent to them for four months to carry out his system of inoculation against typhoid fever. The Secretary of State for War was unable to assent to such proposals for certain alleged reasons, which might have been right or wrong, but need not concern us now. His decision was conveyed without comment to the Indian Government in a military despatch dated March 3rd, 1898, and was communicated in the usual manner for the information of the Commander-in-Chief and Principal Medical Officer of Her Majesty's Forces in India. But as it was understood that Lord LANSDOWNE'S objection to the introduction of the treatment applied to the formal authorisation of inoculation at the public expense rather than to voluntary operations at private cost, advantage was taken, under that supposition, of the presence in India of Professor WRIGHT as a member of the Plague Commission, and the practice was carried out at certain stations though without the sanction of the Indian Government or of the Commander-in-Chief. Over 2000 soldiers were voluntarily inoculated. On the facts being known orders were issued to stop further inoculations. But in conveying this information to the India Office the authorities in India—including the Government, the Commander-in-Chief, and the Principal Medical Officer—strongly urged that Her Majesty's Government should reconsider its objection. This was apparently done, for in a letter from the Government of India to the Secretary of State for India, dated March 8th, 1900, it is stated that "since receiving your approval of the resumption of inoculation at the public expense in August last the measure has been largely resorted to, and we have hopes that the results will be satisfactory in securing some considerable degree of immunity, especially to young soldiers during their first year of service." In a despatch from the Secretary of State for India, dated May 10th, 1900, the receipt of the interesting report of the Principal Medical Officer of Her Majesty's Forces in India, with the remarks of the Indian Government on the subject, are acknowledged and returns are called for as soon as sufficient data are available.

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THIS is an age of congresses. During this year especially a large number of assemblies of scientific and other bodies are being held to read papers on and discuss many matters connected with the bodily or mental welfare of mankind. It is, however, with congresses on subjects connected with the science of medicine that we are more closely interested. It is a natural question to ask whether according to the manner in which they are now conducted

the greatest good results from them or whether certain modifications might be made in their arrangements by which more material results might be obtained. We are afraid that one fact cannot be disguised, and that is that a "congress" of any kind is often an excuse for a number of men to flock together in order to take part in various social festivities and excursions under the self-deception that they are adding to the success of the meeting by swelling the number of names placed in the attendance list. A large number, no doubt, "look in" for a short time at one or more of the "sections," but it is only a minority who enter into the serious work of the congress. Not a few attend and read papers on their own particular subjects, but no discussion ensues and little good results. The "opening addresses" by the presidents of the various sections or by some eminent physician or surgeon are listened to by large audiences, are of general interest, and are frequently some of the most valuable contributions to the literature published in the shape of "proceedings" of the congress. A certain number of subjects for discussion are also chosen by the officials of each section. Recognised authorities are selected to open the debates, and several other well-known observers are invited to take part. Such discussions are generally a success and much useful information is thereby obtained. But the same cannot be said of some of the other, of those which may be termed private, contributions already alluded to. Many of these seem simply framed to air some theory or grievance of the author and much useful time is lost in listening to the reading of such dissertations.

It is difficult to suggest means by which the above defects might be remedied. The main objection to the social arrangements is that the crowding thereby caused is a source of discomfort to those who are entirely bent on the scientific aspects of the meetings which, of course, should have first place. Another objection is that the necessary amount of entertainment involved, and the expense thus incurred, cause certain communities to hesitate before sending an invitation to a congress to assemble in the town. A certain amount of hospitality, of course, is to be expected, but the extreme to which this has been carried is to be deplored. A public reception of the officials and delegates is a graceful recognition of the importance of the meeting, but to expect numerous banquets and large garden parties to be given by private individuals is to place too great a tax upon hospitality. The vast majority who will accept such invitations take but very little, if any, part in the real business of the congress, whilst the secretaries of sections and others who have given much labour to the organising and management of the discussions have no time to attend. We would suggest, therefore, that the system of inviting public bodies and societies to send delegates to represent them at congresses might be extended and that as far as may be public receptions only should be given, special invitations being sent to such delegates, and that when possible the expense of such receptions should be in a great measure defrayed by the funds at the disposal of the organising committee. Such a procedure would certainly lessen the total number of members attending a congress, but we believe that the actual scientific work accomplished would be increased rather than diminished. Another suggestion we would make is that longer notice should be given of the subjects chosen by the committees of the various sections for discussion. Papers contributed by other members on their own initiative need not be discouraged, but it should be clearly intimated to the authors that an opportunity for reading them would only be afforded if time permitted after the official discussions had concluded. A further point for consideration might be whether it would be advisable to appoint a committee to consider the contributions sent in and only to accept a certain number for publication in the proceedings. By giving longer notice, as above suggested, ample time would be given for those who intended to take part in the discussion to undertake fresh observations or corroborate those already made. At the sittings of the congress much valuable material would thus be produced and full opportunity would be afforded for analysing and criticising the work accomplished. If only a few subjects were chosen the discussions would not have to be closed prematurely as is now so frequently the case.

Congresses in the past have done good and valuable work. Lasting and deep-reaching results have been obtained from such gatherings and they have been the means by which legislation in many countries has been effected. The resolutions adopted have been forwarded to the proper authorities, with the result that action has been taken which has been of the greatest benefit to the community at large. It is, of course, open to argument as to how far the social element should be modified. There are certain international advantages to be obtained from men of science from all parts of the world meeting together in friendly concourse apart from the essential scientific purposes of the meeting; but such assemblies have not been free from disadvantages of which, perhaps, overcrowding has been the greatest. We offer the above suggestions, not as reflecting mismanagement on the part of the organising committees of past congresses, but in the hope that in the future modifications on the lines we have hinted at may increase the value of discussions which are the result of much thought and labour.

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WHILE public attention is still occupied with intelligence from the theatre of war everything about the wounded in war is read with interest. At the present time a number of soldiers may be found in our military hospitals who have been invalided from South Africa suffering from the effects of bullet wounds and other injuries received during the campaign. A state of lowered health and nervous depression which seems altogether out of proportion to their local injuries is unhappily very often present in such cases. It is perhaps only natural under the circumstances to seek for some explanation of the causes of this nervous condition outside those of a physical kind. In an article which appeared in THE LANCET of Sept. 15th (p. 807) Mr. MORGAN I. FINUCANE, civil surgeon attached to the Connaught Hospital, Aldershot, seems disposed to ascribe the state of such patients to the immediate or remote result of general nervous shock. He states that if the gunshot injuries of modern arms have apparently lost much of their seriousness, it would, nevertheless, appear that the resulting nerve-shock and injury to

the nervous system form some of their most permanent sequelæ, and he states that it is most difficult to treat such cases. He apparently suggests that some of the causes which are largely responsible for the development of such nervous phenomena may be of a moral rather than of a physical kind; that, quite apart from the surgical injuries sustained in such cases, they may be traceable possibly to the panic and disaster arising out of badly conceived projects. We think, however, that a perusal of the cases which he describes will lead to the conclusion that in some of them at least the conditions have arisen from the presence of physical causes. But, be this as it may, we doubt very much if this view is a tenable one. While it is easy to have recourse to speculative hypotheses of this kind, it would, we think, be very hard to prove them. And, what is more, the facts connected with the present war (if it is intended to imply that any widespread degeneration of the *morale* of our troops has taken place) all tend to point, and very decidedly so in our opinion, in the opposite direction.

It must be admitted that this war has been of an unprecedented character. It is not easy to conceive circumstances of a more trying description—an enemy who could not be seen and refused to be drawn, entrenched or occupying almost impregnable natural positions, frequent ambushes, smokeless powder, and the opposing Boers only disclosing themselves by firing when our attacking troops were in sufficient numbers and at the most favourable distances. But our troops boldly faced these conditions again and again with the most unmistakeable courage, their only regret being that they could not get at their foe face to face in the open. Men who know what war is and who have previously seen our troops fighting in the Indian mutiny and elsewhere have declared that there has been no falling off in their fighting qualities in South Africa, and officers from foreign armies—from Russia, Germany, Sweden, and America—one and all, have extolled their bravery, cheerfulness, and tenacity. The soldiers who have accompanied and fought under General BULLER in his hardest fights on the heights of Natal and the remnant of the besieged army of Ladysmith have been transformed into veterans and have since been following him, storming heights and capturing positions with undaunted vigour and confidence in a mountainous country like that of the Tyrol. They, to say nothing of the troops with General FRENCH and other generals, have passed through terrible ordeals. They must have gone through states of nerve tension again and again, but apparently only to become seasoned to danger instead of degenerating. It is simply a platitude, of course, to assert that men are not all constituted alike as regards courage and fortitude, and even the bravest men are well known to differ greatly in the way in which they bear pain; but the history of this war has served to bring out the fact that the courage of the wounded has been undaunted and that their thoughts while in hospital have not been concentrated on themselves but rather on their comrades in the fighting ranks at the front. In the possession and display of this quality, too, there has been no difference between the veterans of the regular army and the colonials and volunteers who had never previously seen a shot fired in actual warfare. While we may readily allow that the terrible stress and strain of battle may make an indelible impression on the nervous system and prejudicially affect the health and retard the recovery of the wounded, it nevertheless seems astonishing that such an occurrence is not more frequent than it is. Where the nerve-centres or nerve-trunks are injured the case is different of course.

The soldier's "nerve" is, we know, not everything. Great strategical and tactical ability and skill and other qualities of mind and character are likewise necessary for the successful conduct of war, but the empire has nevertheless reason to be profoundly grateful to Providence that our race is not lacking in that splendid physical courage which, after all, is, and must always be, the foremost characteristic of the soldier.

# Annotations.

**"Ne quid nimis."**

## EXPERIMENTAL PROOF OF THE MOSQUITO-MALARIA THEORY.

WE publish an interesting article by Dr. Patrick Manson on the Experimental Proof of the Mosquito-Malaria Theory. A large amount of literature has recently appeared on the subject and the results of the various expeditions which have been despatched to malarious districts to investigate the causal relationship of mosquitoes and malaria are well known. Dr. Manson points out that it is of supreme importance that the public generally, more particularly those who reside in regions where malaria is endemic, should be convinced that certain species of mosquitoes can convey the disease to man. There is no proof so telling as experimental proof. Consequently Dr. Manson cast about for means by which the conversion and coöperation of the public might be secured. The tertian variety is the least harmful, and for obvious reasons the experimental insects were fed on persons suffering from this form. Mr. P. Thurburn Manson offered to submit himself to be bitten by these insects which had been forwarded to England, with the result that he became infected with an attack of tertian fever. Full details of the experiment will be found in Dr. Manson's paper, and the thanks of all are due to his son for thus having practically demonstrated the truth of what had hitherto been theory. Experiments equally important were carried out by Dr. Sambon and Dr. Low, Signor Terzi, and two Italian servants, in the Roman Campagna at a spot known to be intensely malarial. By taking every precaution against the bite of the mosquitoes they remained entirely free from infection, in marked contrast to their neighbours, who were either ill with fever or had suffered malarial attacks. Dr. Manson's remarks on these experiments are to the point and should lead to the adoption of precautions whereby a terrible and widespread evil may be prevented.

## THE GENERAL ELECTION.

IN less than a week from the time when we go to press the general election will have commenced and our readers will, no doubt, find interesting a list of the members of their profession who have decided to contest seats. The following members of the late Parliament have, we understand, decided to appeal again to their constituencies. R. Ambrose, L.R.C.P. & S. Edin. (Mayo West); G. B. Clark, F.R.C.S. Edin. (Caithness-shire); John Dillon, L.R.C.S. Irel. (Mayo East); R. Farquharson, M.D. Edin. (Aberdeenshire

West); Sir B. W. Foster, M.D. Erlang., F.R.C.P. Lond. (Derbyshire, Ilkeston); Sir M. Foster, M.D. Lond., K.C.B. (London University); J. F. Fox, M.D. Univ. Cincinnati, F.R.C.P. Kingston, Canada (King's County, Tullamore); M. A. MacDonnell, M.D. R.U.I. (Queen's County, Leix); Sir George Pilkington, M.R.C.S. Eng., L.S.A. (Southport Division of Lancashire); C. K. D. Tanner, M.D., M.Ch. R.U.I. (Mid Cork); and Sir J. Batty Tuke, M.D. Edin. (Edinburgh and St. Andrews Universities). The following are the new candidates so far as we have at present ascertained: Conan Doyle, M.D. Edin. (Edinburgh Central); A. P. Hillier, M.D. Edin. (Stockport), V. H. Rutherford, M.B. Cantab., L.R.C.P. & S. Edin. (Yorkshire, Osgoldcross). Sir Charles Cameron has, we regret to hear, decided not to seek re-election at the hands of his Glasgow constituents. It should be noted that Sir R. B. Finlay, the Attorney-General, who seeks re-election for Inverness Burghs, is an M.D. of Edinburgh, and was at one time a medical practitioner, while, as many of our readers are aware, Sir W. Cameron Gull, Bart., Q.C., who is seeking re-election for the Barnstaple Division of Devonshire, is the son of the late Sir William Gull, M.D.

## WORKHOUSE NURSING.

AT a recent meeting of the Hampstead Board of Guardians some dissatisfaction was expressed because the medical officer of the workhouse, Dr. E. C. Taylor, had directed that a trained nurse should be engaged to attend on a child in the workhouse who happened to be suffering from measles. The chairman of the board was reported in the local press of Sept. 15th to have said that the child could have been attended to by any of the women engaged to look after the children and that it was a monstrous thing to go to the expense of having a trained nurse. Unless "the women engaged to look after the children" are accustomed to nurse severe cases of illness, we are decidedly of opinion that the chairman's views are retrograde and in every way unfortunate. In home nursing the ties of affection among relatives serve in some degree to make up for want of proficiency in the duties, but long experience has demonstrated that amateur nursing in Poor-law institutions is only too apt to be conspicuous for its shortcomings.

## POISONING BY COAL GAS.

IN THE LANCET of Sept. 15th, p. 820, we had occasion to condemn the water-slide gas pendant as a most dangerous fitting, prone indeed to such a number of defects as to warrant its exclusion altogether from household appliances. This conclusion was based upon a case of coal-gas poisoning at Birmingham in which it was shown that one life was lost (and nearly two) through the defects of this clumsy gas accessory, but there is quite a historical record of the dangers of the chandelier. Another remarkable case of coal-gas poisoning has since occurred, but this time it was due to a defective shilling-in-the-slot meter. It would appear that the meter was fixed without being tested by the gas-fitter of the company for the reason that he had not got a shilling for making the test, nor did the company instruct him to inaugurate the working of the meter unless the shilling was supplied by the consumer. According to the evidence brought forward at the inquest, however, the meter leaked in spite of the fact that no shilling was put in the slot, and this leakage cost two lives, those of a father and son. We are surprised at the extraordinary method of the company and trust that such a procedure is not the universal rule. Clearly it was the duty of the company's official to have tested the meter and to have ascertained that it was fixed properly. The meter, it should be remembered, is the property of the company. The jury, however, found "that the deceased died from suffocation by coal gas the result of an escape at the meter and that such deaths were due to accidental causes." In our opinion it should be impossible for such an "accidental" cause as this to arise and the gas companies should be compelled to test a meter after it has been placed in position and should be made responsible for any consequences that may arise from its defective attachment. In the *Journal of Gas Lighting* of Sept. 18th appears an article on questions of gas poisoning in which an appreciative and complimentary reference is made to our attitude which was defined in an annotation in THE LANCET of Sept. 15th on the question of the danger of water-slide gas pendants and the subject of coal-gas poisoning in general. But in view of the recent case of coal-gas poisoning through a defective meter we cannot refrain from quoting two sentences in this article and placing them side by side with the evidence which was given by the gas-fitter in the employment of the Tottenham and Edmonton Gas Light and Coke Company at the inquest held on Sept. 22nd:—

| *Morning Leader*, Sept. 24th, 1900. | *Journal of Gas Lighting*, Sept. 18th, 1900. |
|---|---|
| William Shields, of the Tottenham and Edmonton Gas Light and Coke Company, who fixed the meter stated that he asked Mrs. Sanders for a shilling to test the meter, but was several times refused. He left the meter untested. Had he been given the shilling he would have discovered the leak at once. When he tested the meter in the presence of the coroner's officer he found a leakage in the outlet pipe to the extent of one foot in 20 minutes. | The use of town's gas is increasing so fast, and spreading so widely among the poorer and less educated grades of the community, that accidents must be expected now and again. The circumstance that the users of prepayment gas-meters have their fittings put in by the gas company is an effectual protection against any mishap attributable to flimsiness of material, unsafe design, or fraudulent workmanship on the part of some local fitter. |

We take it that the writer was referring to the ordinary gas-meter, but surely the same "effectual protection" should be afforded (if such is the case) when slot-meters are fixed. If not the company should be held responsible for any accidents which arise through the defective fitting of the meter which they supply.

## ALLEGED HOSPITAL MISMANAGEMENT.

NOT infrequently reports of inquests and other inquiries appear in the daily press which tend to throw considerable discredit upon hospital management. Fortunately, in the great majority of cases investigation shows that the facts have been grossly perverted or are entirely devoid of truth. Quite recently an inquest was held on the body of a man, aged 46 years, who had suffered from "paralysis" for some years. Whilst walking along the street he stumbled and fell, striking his arm violently on the kerb. He gradually became very ill and was taken to the Camberwell Infirmary, where he died. It was then ascertained that he had sustained a comminuted fracture of the right arm near the shoulder, the cause of death being "pneumonia consequent upon the injury." It was stated in evidence that he had said that he had been attending St. Thomas's Hospital for the injury, and Mr. W. J. C. Keats, the medical superintendent at the Camberwell Infirmary, drew attention to the fact that the arm was simply bandaged and not put in splints, as it should have been, and naturally added that whoever examined the arm could not have done so thoroughly. The second case which came before the same coroner was that of a man who was thrown from a hearse and was taken to St. Thomas's Hospital, where his side was strapped and he was allowed to go home. He subsequently died from bronchitis. It was alleged that the strapping was only applied at the request of a friend of the injured man. The coroner on each occasion allowed remarks from the jury which threw all the blame on the medical officers of the hospital and intimated that he should write to the hospital

authorities on the subject. In doing this he was acting perfectly within his duty, but it would have been well if he had requested the jury not to have censured the hospital officials without further proofs of the alleged neglect. We have made inquiries at the hospital which place a very different complexion on the two cases and entirely exonerate the house surgeons. The man with the fractured arm does not appear to have been treated at the hospital; his name does not appear in the casualty book and none of the officials on duty have any recollection of such a case. The patient erred, therefore, in stating that he had been to St. Thomas's Hospital. With regard to the case of fractured ribs, the house surgeon strapped the chest as the best method of treatment and not at the suggestion of the patient's friend. Unless there is some complication such cases are not admitted as in-patients, and when the man was examined there was no bronchitis. It is to be regretted that reports such as those to which we have alluded above are so widely published in the lay press; full inquiries should be made before responsible bodies such as coroners' juries are allowed to make remarks which unjustly tend to damage the reputation of our large hospitals by alleging carelessness in examination and want of proper treatment on the part of the medical officers.

## INTOXICATION BY CANNABIS INDICA.

IN the September number of the *Edinburgh Medical Journal* Dr. James Foulis of Edinburgh gives a lengthy account of two cases of poisoning by cannabis Indica. The patients were brothers, A and B. A was 22 years of age and was a medical student in his third year; B was 20 years of age, an art student, and of a highly strung and sensitive nature. Both of them were tall and powerful, being nearly six feet in height. When Dr. Foulis, who had been hurriedly sent for, arrived at their house he found them in the dining-room, alone and only partially dressed. A was hanging tightly on to B who was rushing round the table in a very excited state, wildly throwing his arms about and singing in a most jovial manner. A was evidently doing his best to control B; he looked pale and depressed as if overweighted by some sense of heavy responsibility. Both in mind and body B was in a state of extraordinary excitement. He appeared as if he could not talk fast enough and as if his arms and legs were acting automatically. B threw his arms round Dr. Foulis in a loving embrace and spoke most kindly and even tenderly to him, then all of a sudden he began to quote poetry and in an excited manner asked which poet Dr. Foulis liked best, naming several one after another. As the other inmates of the house were unable to control the young men they were removed to the Edinburgh Royal Infirmary where they arrived about 1 A.M., two and a half hours after having taken the drug, and at 9.30 A.M. they were sufficiently recovered to return home. A, the medical student, afterwards wrote a description of the occurrence, in which he stated that with a view of experiencing the wonderful dreams said to be produced by haschish or cannabis Indica his brother and he on three successive occasions took doses of the drug. On the first occasion they took 25 minims of the tincture, on the second occasion (a week later) they took over 40 minims, and on the third occasion (three weeks later) they took over 90 minims, with the results above described. In about 20 minutes they both began to feel exhilarated. A felt decidedly pleased with himself and versatile. Then one of the figures in a drawing at which he was looking began to nod and whirl round. Suddenly he felt himself carried away as it were by a whirlwind and finally lost consciousness. The next thing he remembered after regaining consciousness was the room heaving up and down. When Dr. Foulis arrived on the scene a most vivid picture presented itself to A's mind. He seemed to see Virgil and Dante standing on a rocky ridge overhanging a deep abyss whence were issuing multitudes of lost souls on their way to Hades. A imagined himself standing on that ridge watching the unending and ever-moving throng passing out of sight. The effect of the drug lasted to some extent for three or four days, during which they were in an extremely unstable state of mind and had to keep a constant guard over their actions. On the afternoon of the following day B had another attack. B's account of his dreams on falling asleep at the Infirmary was as follows: "Upon falling to sleep I experienced the most exquisite dreams. The sky was scintillating with delicate colours rapidly succeeding one another. Then came shifting landscapes of unimaginable beauty, following fast upon each other, and all too quickly disappearing." It is of some interest to compare the foregoing account with Mr. Havelock Ellis's description of the intoxication produced in himself by mescal buttons (the fruit of the Anhalonium Lewinii) as recorded in THE LANCET of June 5th, 1897, p. 1540.

## MASONIC HONOUR TO SIR GEORGE HARE PHILIPSON.

SIR GEORGE HARE PHILIPSON, M.A., M.D. Cantab., D.C.L. Durh., F.R.C.P. Lond., was recently entertained at dinner by his brother Freemasons of Northumberland and Durham to celebrate his knighthood at the hands of Her Majesty and to testify to the esteem in which he is held by Freemasons and by the medical profession. Quite a large gathering of Freemasons, among them being many medical man, assembled at the County Hotel, Newcastle, where the dinner was held under the chairmanship of R.W. Bro. the Right Hon. Sir Matthew White Ridley, Provincial Grand Master of Northumberland. The toast of "Our Guest" was most enthusiastically received and drunk with musical honours. The Chairman, in proposing it, said it was an open secret that the medical profession intended to do honour to their guest in their own way, but he was certain that the Freemasons of the two counties were not less anxious to show Sir George Philipson the honour which he deserved than was the medical profession. For 28 years Sir George Philipson was acting physician at the Newcastle Infirmary and was never a day absent from duty. That in itself was an honourable career, and they all knew how much the infirmary owed to him. He was at the head of the medical profession in the North of England, and no man deserved better all the honours which had been conferred upon him than did their guest. In every walk of life Sir George Philipson had endeared himself to every section of the community.

## IDIOPATHIC TRANSITORY CLOUDING OF CONSCIOUSNESS.

UNDER the above title Dr. Placzek of Berlin reports some interesting cases in an article recently published in the *Berliner Klinische Wochenschrift*, No. 32, 1900. Two of the cases were examples of temporary loss or disturbance of consciousness amounting to mental aberration and therefore important from a medico-legal point of view. The first case was that of a woman, aged 40 years, who suddenly one afternoon and without any warning became irrational in language and behaviour, gesticulating wildly and talking unintelligibly. This condition lasted for six hours (till 8 P.M.), when she recovered. She, however, had no recollection of her state or conduct during these six hours. It was found that she was menstruating at the time of this attack, but no connexion could be traced between menstruation and her illness. The following day she had a typical attack of migraine with muscæ volitantes, scotomata, and other visual disturbances. She was said to have suffered at times from headache, but she was free from any stigmata, hysterical

or epileptic, and her previous history was good. The second case was that of a man, by occupation an engine-stoker, who suffered from an attack of clouding of consciousness. During this condition he failed to recognise his friends and relatives and was very irritable and rough in manner. This condition lasted only a short time and then in the course of an hour he suddenly recovered. He was stated to have been a sufferer from trigeminal facial neuralgia and painful cramps of the muscles of mastication. In discussing the causation of these seizures Dr. Placzek thinks that there occurs in these cases a marked disturbance of the cerebral circulation, and refers to somewhat similar symptoms which are met with in those who have been resuscitated from strangulation by hanging—a condition in which one of the most marked features is the constriction of the carotid arteries in the neck. It is of importance to recognise that such occurrences as temporary clouding of consciousness and loss of emotional control may occur, apart from epilepsy, hysteria, or insanity, and in persons free from grave neurotic or traumatic taint. Dr. Placzek refers to a few such cases which have been recorded in literature by Azam, Krafft-Ebing, Möbius, Charcot, and Féré, and which possess a practical and medico-legal bearing.

## ROYAL ARMY MEDICAL CORPS SOUTH AFRICA FUND.

SUBSCRIBERS to this fund will recollect that the committee sent £200 to the principal medical officer in India to be expended on warm clothing for the Indian dhoolie-bearers and hospital servants. No formal acknowledgment having been received Surgeon-General H. S. Muir wrote on August 10th to the principal medical officer asking if he could give any information. Surgeon-General W. Taylor, in reply, mentions having duly sent a copy of the subjoined letter soon after he received it but it never reached its destination.

Copy of a letter dated June 23rd, 1900, from the Secretary to the Government of India Military Department to the address of the principal medical officer, Her Majesty's Forces in India.

"1. I am directed to acknowledge the receipt of your letter No. 2491, dated June 14th, 1900, reporting that a consignment of warm clothing—namely, khaki serge blouses and knickerbockers, puttees, and puggarees provided from funds placed at your disposal by the committee of the Royal Army Medical Corps South Africa Fund—has been despatched by the Royal Indian Marine ship *Clive* to the General Officer Commanding Line of Communications, Natal, for distribution among Indian hospital followers in Natal. 2. With reference thereto I am to request that the thanks of the Government of India may be conveyed to the committee for their generous gift."

## EX ORIENTE SEMPER ALIQUID NOVI.

A PAPER on the Reorganisation of the British Medical Association was read before the Hong-Kong and China branch of the association by Surgeon-General G. J. H. Evatt on April 29th, 1898, and has just been published as a pamphlet of 31 pages by Messrs. Hoyten and Cole, Russell-street, Plymouth. To carry out his proposals would involve great changes in existing methods. Commencing with the branch organisation he recommends that the county should be the "unit" and the Parliamentary electoral division the "primary unit." There is no objection, he says, to several counties uniting in a branch, but each county ought to have its own separate and complete organisation for county purposes, to advise and to watch the proceedings of the county council of the county, "a source of constant anxiety as to its action regarding medical men." There should, therefore, be in every county within the branch a district or county council of the British Medical Association under its own chairman (not president) and with its own secretary for the county. When election time comes round the "primary units" can by letter or interview make known their opinions to the local competing candidates and obtain replies. For scientific work he would create an academy of medicine for the county or branch, having as its *ex-officio* principal the chairman of the British Medical Association district or county council. With regard to the central organisation of the association, he would have the president elected by "the universal suffrage of every member, attached or unattached," of the association, voting papers being used, as in the election of Direct Representatives on the General Medical Council. This president would have a good salary, at least 1*s.* per member per year, would wear a badge and chain of office, and would hold office for three, four, or five years. Surgeon-General Evatt has a good deal to say with respect to the *British Medical Journal*, but perhaps his most startling recommendation is that the sections of the annual meetings should be raised into faculties with professors and deans of faculties, that these faculties should be grouped into post-graduate colleges established in different parts of the United Kingdom, and that these colleges should in time be combined "into a post-graduate university conferring a Doctorate in Medicine, a higher degree in surgery like the F.R.C.S., and finally a D.P.H. diploma."

## TWISTING OF THE PEDICLE OF A PAROVARIAN CYST DURING PREGNANCY.

IN the *Boston Medical and Surgical Journal* of August 30th Dr. F. B. Lund has published a case of this condition. Torsion of the pedicle of parovarian cysts is rare because their pedicles are short or even absent, and because the tumours are regular in form. On July 13th, 1899, at about 4 P.M., a married woman, aged 27 years, while reaching over a table was seized with severe pain in the right inguinal region accompanied by vomiting. She was seen at 8 P.M. when she was in bed and complained of severe pain in the right inguinal region, which recurred every 10 or 15 minutes. Her second and youngest child was born 10 months before. Menstruation had returned seven months before and been regular until three months before, when it ceased. She had morning sickness, vaginal discharge, and increased frequency of micturition, and believed herself to be three months pregnant. Examination revealed a fluctuating abdominal tumour larger than a three-months pregnant uterus, which extended upward to the umbilicus, occupied the hypogastric region, and extended more into the right than the left inguinal region. On bimanual examination the cervix was found to be soft and patulous and an extremely tender mass was felt in the right fornix. Owing to the spasm present the epigastric tumour could not be distinguished from the uterus. The temperature was 100° F. and the pulse was 90. The pains continued during the night. In the morning a small tender mass was felt in the right iliac region suggesting a swollen appendix. Appendicitis with pregnancy of longer than three months' duration (to account for the large size of the supposed uterine tumour) were thought probable. A short incision through the outer part of the right rectus muscle revealed a twisted pedicle which was composed of broad ligament and enormously dilated veins, some of which must have been ruptured, as there were extensive sub-peritoneal ecchymoses. A cyst with thin translucent walls and dark from dilatation of its vessels was seen behind and above the uterus, which was of the size of a three months pregnancy. The rectus incision was sewn up and a longer one was made in the linea alba. The cyst was tapped and about a quart of thin smoky fluid was removed. The pedicle, which was twisted about three times on itself, was untwisted and tied in sections with silk. Recovery was uneventful. Examination of the specimen showed it to be a parovarian cyst with a

capacity of 700 cubic centimetres. In January, 1900, the patient was delivered of a son.

## THE LATE SIR JAMES PAGET.

SIR JAMES PAGET'S memoirs and letters, with selected essays and addresses, are being prepared for publication. We are asked by Mr. Stephen Paget (70, Harley-street, W.) to say that he will very gladly receive any letters, or copies of letters, that may be sent to him for this purpose.

## FACTORS IN LIFE ASSURANCE.

IN his presidential address delivered before the Life Assurance Medical Officers' Association Dr. C. Theodore Williams dealt with the question of Race in Relation to Life Assurance and gave some interesting details as to the mortality and expectation of life in various European States. Taking an average of 25 recent consecutive years the deaths per 1000 of the population in the several countries were found to be as follows:—United Kingdom, 19·6; England and Wales, 19·8; Scotland, 20; Ireland, 18·1; Denmark, 18·8; Norway, 16·8; Sweden, 17·3; Austria, 29·9; Hungary, 35·4; Switzerland, 21·7; German Empire, 25·2; Prussia, 24·9; Netherlands, 21·8; Belgium, 21; France, 22·6; Italy, 27·8. The figures for 1897 in every case show a reduction on the 25 years' average except in Ireland, where the rate rose from the 25 years' average of 18·1 to 18·4 in 1897. Norway appears to possess the lowest death-rate in Europe, the figures for 1897 being only 15·4. With regard to complete expectation of life in different countries, the British figures are at all ages slightly less than the American and slightly greater than the German and French. At 20 years of age the figures are: American, 42·199 years; British, 42 101 years; German, 39 683 years; French, 41·839 years. At 60 years of age the figures are: American, 14·098 years; British, 13·808 years; German, 12 848 years; French, 13 287 years. In a paper on Locality and Occupation in relation to Life Assurance, read before the same Association by Dr. G. V. Poore, attention was drawn to the exceptionally high mortality of inn and hotel servants in London and to the prevalence of phthisis among them, their mortality from this disease being four and a half times that of occupied males in agricultural districts. Dr. Poore considered that the liability of this class of workers to phthisis and respiratory disease was largely attributable to the design of the houses in which they live.

## ABNORMAL NERVE-SIGNS AND OTHER DEFECTS IN CHILDREN.

A COMMITTEE of the British Association presented a report at the last annual meeting summarising an extended series of observations on the face, hands, and eye-movements of children, as signs of their brain condition indicated by attitude and movement. The facts upon which this report was based are "all the cases with any abnormal nerve-signs, occurring in the records of the Childhood Society among the 50,000 children examined." The cases are grouped as presenting signs in (1) the face, in its expression, frowning, grinning, &c.; (2) the hand, in its balance or finger-twitchings; (3) the eye-movements, as wandering or not under control; (4) in balance of the head, spine, or other parts, &c. The report says, in making a rapid observation of children it is sometimes convenient to examine and classify cases according to the part of the body in which irregular action is seen, in place of indicating the detailed points observed, though 21 signs in all have been defined. It appears that the hands when held out free on direction to do so were in 1520 boys and 1138 girls dropped, slouching, held asymmetrically, or showed finger-twitching and over-action. The face in 1133 boys and 570 girls was lacking in expression and tone or showed twitches and other irregular action, while "eye-movements" were not well under control in 351 boys and 259 girls. It is thus obvious that much may be learned from the hand-balance and steadiness of the fingers as signs of a well-trained brain or its disorderliness; these points, as well as good control of the eyes to attention under direction and good expression in the face, are objects that deserve careful notice both in diagnosis and in school training. This is the eighth annual report of the committee. Among results of their work evidence has been advanced on many interesting problems. With certain constitutional conditions of congenital deficiency and acquired defects as found among boys and girls respectively, the status varies in the age-groups. The main classes of defect are more frequent with boys, while the girls with defective constitution tend in larger proportion than the boys to ill-health. The heavy mortality of infancy falls principally on the boys and is largely due to developmental defects, while the children with such congenital defect who survive add largely to the number of dull and delicate persons in after-years. It has been shown that good effects follow the employment of physical training at school in diminishing the proportion of dull pupils. An important mathematical paper on Association of Attributes in Statistics, with Illustrations from the Material of the Childhood Society, &c., by Mr. G. Udny Yule, has been published in the Philosophical Transactions of the Royal Society, affording confirmation of some of the deductions made in this report, while giving valuable suggestions for improved methods of statistical research on these lines.

## TYPHOID FEVER IN MERTHYR.

WHENEVER there is an outbreak of typhoid fever in the mining districts of the midlands or of the north of England it is nearly always found to be more or less associated with the method of disposal of excrement that prevails in the particular locality affected, and it is even sometimes suggested that the substitution of water carriage for conservancy would put an end to these epidemics of enteric fever. That this view is not altogether borne out by experience elsewhere is shown by the only too frequent outbreaks of typhoid fever in the densely populated colliery districts of South Wales where water carriage is all but universal. During the whole of the present year Merthyr, which has a population of about 75,000 persons, has never been free from the disease and up to the middle of September there were as many as 214 cases notified. In the first half of the year the death-rate was equal to 0·5 per 1000 per annum or double the rate that was recorded in the adjoining districts of Aberdare and Rhondda and two and a half times more than the typhoid fever death-rate recorded in England and Wales in 1899. It is now more than 30 years since a sewage farm was established at Merthyr and the filthy privies and middens so common in the north of England are noticeably absent from the town; there are two fever hospitals and an abundant supply of water has been provided by the council who are even now enlarging their gathering grounds. But the Merthyr Council, like so many other sanitary authorities, appears to imagine that having completed such large undertakings as these their responsibility ends, forgetting that one of the most important duties imposed upon them by the Public Health Acts is to seek out and remedy by constant inspection of their district any insanitary conditions that may exist. The neglect of this duty has probably much to do with the present outbreak of typhoid fever in the town. The newly-appointed medical officer of health, Dr. C. E. G. Simons, will find himself altogether handicapped unless he is thoroughly supported by the members of the council in taking necessary action against individual property owners

and unless he is provided with a sufficient staff of competent inspectors to carry out frequent house-to-house visitations.

## THE SMOKE NUISANCE.

THE Metropolitan vestries must be fast asleep again judging from the undoubted recrudescence of the smoke nuisance during the past few weeks. We beg to stir them up once more. We have observed several chimneys in the immediate neighbourhood of THE LANCET Offices emitting dense volumes of black smoke and the nuisance proceeds on all sides with the most consummate disregard of the Public Health Act. We will point out the exact sites where the offence is committed if desired. Nor is the offence intermittently committed but continuously for days and weeks. What has become of that excellent movement, the Coal Smoke Abatement Society, so ably backed by Sir William Richmond with the view of stirring up the vestries to their sense of duty in this matter? Several chimneys in the Strand district and "over the water" have been pouring forth black smoke during the whole of the lovely weather which we have fortunately been experiencing this September. The days have been delightfully bright and the atmosphere particularly clear, only to be besmirched by persons who impudently commit this offence and in brazen defiance of the law. It is monstrous. Perhaps the vestry officials are away on a holiday. If so, the sooner they return the better, that they may chasten their deputies for what they have neglected to do and take action themselves immediately to suppress the evil.

## LOCAL AUTHORITIES AND ISOLATION HOSPITAL ACCOMMODATION.

A MEMORANDUM has just been issued by the Local Government Board on the provision of isolation hospitals by local authorities. In the main it follows the lines of the memoranda on this subject which have been issued by this department in past years and which have already done much to aid the satisfactory construction of isolation hospitals throughout the country. The advantages to every sanitary district of possessing a properly equipped hospital in readiness to meet emergencies are first set out. When isolation hospitals were novelties to the public more was no doubt claimed for them by some of their advocates than would now be admitted in view of the large practical experience since gained, and also of the better knowledge which we now possess of the multifarious ways in which infectious diseases may spread otherwise than by direct human intercourse. Nevertheless, the arguments in favour of these hospitals are very strong. That which perhaps appeals most to the public is touched upon in the memorandum, namely—the insurance which an isolation hospital affords against troublesome and prolonged interference with the business occupations of persons in whose households infectious sickness occurs and who are unable in most cases to arrange for adequate isolation in their own homes. There is no need, however, at this date to labour any points such as this. The isolation hospital has in this country come to be looked upon as essential to the satisfactory sanitary equipment of a local authority. No district that has set up an isolation hospital has ever, so far as we know, dreamt of abandoning it. The memorandum in question sets out the various points which the Local Government Board require to be complied with if the hospital is to be a permanent building erected out of money raised by loan. No definite proportion of beds to population is laid down, although one bed per 1000 is hinted at, where ward blocks are sufficient in number. A site of sufficient area to permit of future extension is advised; it should not, "of course," be in a very populous neighbourhood. In the case of small-pox hospitals the Local Government Board refuse to sanction a site which has within a quarter of a mile of it "either a hospital or a workhouse, asylum, or any similar establishment, or a population of as many as 200 persons," or within half a mile of it "a population of as many as 600 persons, whether in one or more institutions, or in dwelling-houses." These limits are the same which have been insisted upon by the Local Government Board for some years past in view of the demonstrated ability of small-pox to spread round small-pox hospitals. Precautions against aerial spread of this disease are clearly desirable. But rigid application of the above limits, as, for instance, if a suitable site has to be rejected because it happens to be 420 yards and not 440 yards from a cottage hospital, seemingly might in some cases involve considerable hardship. A plan is given showing a typical arrangement of blocks on a small site—an administration block, a ward pavilion, an isolation ward block, and a laundry and mortuary block. The administration block "should contain quarters for the matron or caretaker, and a sufficient number of bedrooms for the nurses and servants who will be required to work the hospital when in full operation"—a most desirable requirement seeing how administrative quarters of hospitals are apt to become overcrowded during epidemics. It is advised that ward blocks should be one-storey buildings save in large hospitals or in exceptional cases. Day rooms for convalescent patients are not suggested. The minimum requirement of air space per bed is 2000 cubic feet and of floor space 144 square feet. The hospital is required to be surrounded by a wall or close fence at least six feet six inches in height. This regulation applies to hospitals in isolated country places as well as to those situated near to centres of population. In isolation hospitals of the former character in Scotland these high walls, which on account of their expense and somewhat forbidding appearance have drawbacks as well as advantages, are, we believe, generally dispensed with.

## THE NOTIFICATION OF PLAGUE.

THE sanitary authorities of London have issued a circular, in accordance with an Order of the Local Government Board, informing all legally qualified medical practitioners that henceforth Section 55 of the Public Health (London) Act, 1891, under which small-pox, cholera, diphtheria, membranous croup, erysipelas, scarlet fever, and the fevers known as typhus, typhoid, enteric, relapsing, continued, and puerperal are notified, will include the disease known as plague and that it will be the duty of practitioners as soon as they become aware that a patient is suffering from this disease to send notice thereof to the medical officer of health at his office. It is sincerely to be hoped that no occasion will arise for testing the diagnostic powers of the medical practitioners of the country in regard to this disease. It is undoubtedly difficult for a practitioner to diagnose a disease which he has never seen. The best advice which we can give to our readers on this point is to recommend them to read carefully the reports of the Glasgow cases which we have been able to publish in recent weeks. Even if there be no further extension of the disease the perusal of them will still prove highly instructive and interesting, and if unhappily cases should arise they will be more quickly discerned by those who have thus studied the chief points of actual cases.

## A RARE MONSTROSITY.

IN the September number of the *Maryland Medical Journal* Dr. H. G. Beck of Baltimore gives a description, with two illustrations, of a fœtus which was born on Feb. 3rd, 1900, at the end of the seventh month of the mother's third pregnancy. Her first labour (May 13th, 1898) was strictly normal and at full term: the child is still living and every

feature is perfect. The second was a miscarriage in the fourth month, the fœtus showing no signs of malformation. There was positively no evidence of maternal impression during the third pregnancy. The child was still-born: the presentation was not ascertained on account of hydramnios and sudden spontaneous delivery. The specimen, which has been placed in the museum of the College of Physicians and Surgeons in Baltimore, presented all the combined features of harelip, cleft palate, acrania, hydrencephalocele, and spina bifida. It was a female, it weighed 219 grammes (seven and three-quarter ounces), and measured 27 centimetres (10¾ inches) in length and 24 centimetres (9½ inches) in circumference of the body. The most striking condition was the absence of the cranial portion of the frontal and parietal bones. The eyes formed the uppermost part of the head and stood out prominently. The nose was broad and distinctly flattened. The neck, it might be said, was entirely absent, the head being attached directly to the body. The hydrocephalic brain and the cord and their membranes were exposed and unprotected by osseous structure. The brain had two distinct hemispheres separated by the longitudinal fissure, and its general contour and outlines very nearly approached the normal. The foramen magnum was entirely absent. The vertebral arches were deficient from above downwards as far as the lower dorsal region. The rest of the body and the extremities were apparently normally developed.

## OPEN CABS.

WHY is it that London is not supplied with open cabs? Every provincial seaside town has its "fly," a conveyance which is a fairly respectable kind of well-upholstered landau very comfortable to ride in and certainly more commodious than that not particularly smart vehicle the London four-wheeler or "growler." From the point of view of health there can be no doubt also of the advantage of the "fly" and more especially, of course, when the weather permits the "fare" to ride in the open. The fact that the "fly" is more often open than not renders it also a more wholesome vehicle to ride in. Closed cabs are undoubted sources of infection, microbes infest the cushions and the mats on the floor, and the air might easily contain pathogenic organisms left by a previous "fare." On the contrary, the fresh air to which the "fly" is exposed renders its equipments fresh and wholesome, while infected air could not possibly linger. The closed cab, be it hansom or four-wheeler, is frequently "smelly" and "stuffy," for the simple reason that Nature's powerful cleansing agents, light and air, are excluded from purifying the interior. Again, persons of a decidedly nervous temperament would invariably choose the "fly" to ride in rather than the hansom. As to the latter vehicle, it is a sort of death-trap in wet weather when the "fare" is completely inclosed, as it were, in a shut-up box owing to the window fitting closely on the apron, which makes it nearly impossible for him to release himself in emergency, to say nothing of the possibility of being guillotined by the down-coming window. Even when the hansom is not closed it is a risky vehicle from the fact of the "fare" having to get in and out between the wheel and the horse's hind legs. On the other hand, the "fly" is a much more safe and commodious vehicle, offering every comfort, being easy to get into and out of, and if need be it can be closed, as in wet or cold weather, without much trouble. The "growler" is, of course, practically always closed—a fact, we think, which is hygienically objectionable. We urge the claims in favour of the "fly" over the hansom and four-wheeler, not only, however, on distinct hygienic grounds, but because we consider it to be a more acceptable vehicle than the London cab, be it hansom or four-wheeler, from every point of view. Why, then, again we ask, is it that London is the only town where such vehicles are never in evidence? At seaside and provincial towns, and some suburban places, the "fly" plies for hire both in summer and winter. We should welcome heartily any movement to bring about this very desirable reform in the manner of metropolitan travelling.

THE one hundred and twenty-eighth session of the Medical Society of London will commence on Monday, Oct. 8th, when an address, entitled, "The Romance of Surgery," will be delivered by the incoming President, Mr. John H. Morgan. The Lettsomian Lectures will be delivered in March and April by Dr. Mitchell Bruce, and the Oration in May by Mr. F. Richardson Cross.

THE death is announced of Miss Margaret Stokes, the distinguished Irish antiquary. She was a daughter of the late Dr. William Stokes, and consequently a sister of the late Sir William Stokes, who died in South Africa on August 18th. Miss Stokes was well known for her valuable work upon Celtic Christian Antiquities.

THE Old and Present Students' Dinner, Faculty of Medicine, University College, London, will be held at the Hotel Cecil on Monday, Oct. 1st, at 6.30 P.M. for 7. Dr. G. Vivian Poore will occupy the chair.

THE introductory lecture at the Royal Veterinary College will be delivered by Professor McFadyean, M.B., B.Sc. Edin., M.R.C.V.S., on Tuesday, Oct. 2nd, at 12 noon.

Mr. A. A. Bowlby and Mr. Cuthbert Wallace have returned to town after nine months' service in South Africa with the Portland Hospital.

# THE EXTEMPORANEOUS AERATION OF LIQUIDS.

APART from the question as to why it is that effervescing liquids prove so attractive, it is a fact that the demand for carbonated waters or mineral waters has increased enormously of late years. The mineral-water industry is comparatively a recent creation and it is one of great importance when it is considered that aerated waters form a very large proportion of the water used for drinking purposes by the community. Effervescence is a quality in beverages that is much sought after and undoubtedly the presence of an excess of carbonic acid in a beverage modifies the taste of that beverage in a very important way which is not altogether easy of explanation. The fact that there is movement in a liquid, or briskness, or, as it is sometimes termed, "life," may account for the attractiveness of effervescing fluids. But the attraction does not rest with the bubbling appearance of the aerated drink. An effervescing liquid seems also more attractive to the palate and more acceptable to the stomach than a still liquid. Carbonic acid gas in solution is a well-known sedative to the gastric nerves and soda-water and champagne (especially iced) are known aids in obstinate sickness. The importance of the rôle, whatever it may be, that carbonic acid fulfils in an aerated beverage can hardly be exaggerated when it is generally accepted that champagne without its gas loses for the most part its exhilarating qualities and soda-water loses its palatability and refreshing qualities when it has become flat.

The idea of artificially charging water with an excess of carbonic acid gas owed its origin probably to the fact that when sugary solutions or grape juice were allowed to ferment in closed vessels a sparkling liquid resulted. The operation, of course, required time. It was soon discovered that water could be made sparkling almost instantaneously by placing

it under carbonic acid gas at a considerable pressure and then bottling the liquid without removing this pressure. Nature herself has provided in many parts of the world waters supercharged with carbonic acid gas, but obviously the quantity of gas contained in these natural waters at the surface does not exceed more than their own volume, since under one-atmosphere pressure one volume of water takes up its own volume of gas, the volume retained in solution depending exactly upon the pressure under which the water is placed. The law on this point, stated briefly, is that the volume of carbonic acid gas contained in a water varies directly with the pressure to which it is exposed. Thus under one-atmosphere pressure water would contain its own volume of gas, under two-atmospheres pressure it would contain twice its own volume of gas, and so on. Accordingly by measuring the pressure of the gas in a bottle of soda-water it is easy to ascertain what quantity of gas is present in the liquid. The average pressure of most aerated waters is about four atmospheres, so that the water contains four times its volume of carbonic acid gas, three of which would be gradually discharged, producing effervescence on releasing the cork and exposing the liquid to the pressure of the air, and one of which would remain.

Several methods have been suggested for producing aerated water and many ingenious bottles have been contrived for preserving the water so prepared. As a rule most people are content to leave the preparation of aerated waters in the hands of the aerated water factor. Attempts, however, have been made from time to time to provide a small apparatus which would suffice to keep any ordinary household supplied with a quantity of aerated water made on the spot. The "seltzogene," for example, is a closed apparatus in which several pints of water may be aerated by placing in an upper chamber situated over the reservoir containing the water a mixture of tartaric acid and carbonate of soda which when moistened evolves carbonic acid gas, which slowly impregnates the water below and renders it effervescing. The simplest of all methods, however, of obtaining an effervescing water is to dissolve first an acid in the water and then to add a soluble carbonate such as carbonate of soda or *vice versâ*. But this method, of course, leaves a salt in solution which is a product of the interaction of carbonate of soda and tartaric acid and which renders the water unsuitable and unpleasant. Both methods of the extemporaneous aeration of water have recently been superseded by a much more ingenious arrangement.

We refer to the system known as Sparklets. This system has been before the public for some time, but its history has been progressive and the sparklets of to-day are a great advance upon the sparklets of some years ago. We remember when this system was shown as a novelty at a conversazione of the Royal Society. It then consisted of dropping a recently-pierced steel bomb containing liquid carbonic acid into a bottle of water of suitable size.[1] As we anticipated, there were obvious objections to this method, since the carbonic acid which impregnated the water soon attacked the steel bomb and produced an unsightly liquid due to the unstable nature of the carbonate of iron formed by the action of the gas upon the steel bomb. This defect of what promised to be an interesting system of aerating waters was, however, soon removed, and in view of the great improvements that have since been effected and of the fact that this method is being adopted very largely in the household for the extemporaneous preparation of aerated liquids we have deemed it a subject which from the public health point of view is worthy of independent investigation. The need for independent investigation of this comparatively new system becomes more apparent when we consider the question of impurities which such a system might possibly entail. We have therefore turned our attention chiefly to the following points in regard to the method of aerating waters by the extemporaneous means so easily afforded by sparklets: (1) the safety of the method arising from (*a*) the sparklet or bomb containing liquid carbonic acid gas or (*b*) of pressure in the charging bottle; (2) the purity of the gas; and (3) the purity of the finished product and its chances of contamination.

The elucidation of these important questions amounts in reality to a hygienic inquiry, and any investigation on these heads would not be complete without a reference, which must be brief, to the interesting methods by which "sparklets" are made and to the manufacture of the liquid gas which they contain. The raw material for the preparation of carbonic acid gas used in the sparklet is coke, which, from the productive point of view, is carbon. Coke, however, contains other things besides carbon, which produce on combustion gases which are not wanted for the purpose and which are objectionable in character. A process of complete purification is therefore adopted. The coke is first burnt in a furnace in the ordinary way with a good supply of air. The gases resulting on combustion, containing chiefly carbonic acid gas, are thoroughly washed or scrubbed before passing into a strong solution of carbonate of potash. Here the carbonic acid is absorbed and inert gases are excluded. The process is carried on until the carbonate of potash liquor is saturated. At this point it consists of bicarbonate of potassium or potassium carbonate with, so to speak, a loose molecule of carbonic acid gas. This super-carbonated liquor is then boiled and the excess of perfectly pure carbonic acid is thus expelled, any sulphurous or sulphuric acid that may have been absorbed from the coke gases being retained. The pure carbonic acid gas thus evolved passes into powerful compressing pumps which drive the gas into steel tubes in a liquid state where it may be kept until required. Or the gas direct from the bicarbonate of potash may be forced into gas-holders to be afterwards liquefied previously to the charging of the sparklets. The purity of the gas may be gathered from the following analysis which we made of the gas contained in a sparklet:—

| | | |
|---|---|---|
| $CO_2$ | ... ... ... ... | 99·75 per cent. |
| O | ... ... ... ... | 0·05 ,, |
| N | ... ... ... ... | 0·20 ,, |

We very thoroughly tested the gas for traces of impurities such as sulphur dioxide or carbon monoxide, but we did not obtain the slightest experimental evidence that even in infinitesimal quantity such gases were present. As the above analysis shows the carbonic acid gas amounted to 99·75 per cent., while the difference from 100 is accounted for by the presence of traces of air.

The sparklet originally consists of a steel disc which is beaten into small shallow cups and finally into a small steel bottle provided with a somewhat wide neck, to which, after the liquid has been forced into the bomb, a steel cap is attached and made tight by means of a washer at the same operation of filling. The liquid carbonic acid is forced into the sparklets under a pressure of 60 atmospheres. The sparklets are, however, tested to stand the pressure of 500 atmospheres. They are further tested by being immersed when fully charged in water at 60° F., which is afterwards raised to 150° F. The precautions taken to secure sparklets of absolute uniformity in regard to capacity and weight are very remarkable and commendable, and such, indeed, as ensure the sparklet being quite safe. The sparklets, in fact, are every one of them standardised by means of a most ingenious apparatus before they pass into the hands of the person who fills them with liquid carbonic acid. The sparklets are again weighed after the filling process so that the exact amount of carbonic acid which they contain is known and controlled. In this way both an excess of gas which would be dangerous is avoided and an insufficiency is prevented which would fail for the purpose of complete aeration. We have taken several sparklets of the No. 2 size at random and we have found a remarkable uniformity in the weight of carbonic acid gas contained in them. The variation was so slight as to be quite negligible and unimportant. The maximum weight of carbonic acid in one bomb was found to be 4·417 grammes and the minimum weight 4·402 grammes. These quantities approximate to four and one-fifth pints of carbonic acid gas when measured at the average temperature of 15° C. The capacity of the bottle for which this sparklet is made we found to be exactly one pint. Thus the aerated water would be under four atmospheres pressure and contain four volumes of gas. This is approximately the pressure of ordinary machine-made soda-water, which suffices for all practical purposes. We have further examined sparklets containing a mixture of oxygen and carbonic acid gases so that the water, if desired, may be aerated with some amount of oxygen as well as carbonic acid. These sparklets are suitable for the 12-ounce bottle. On analysis the gas contained in them showed the following composition:—

| | No. 1. | No. 2. |
|---|---|---|
| Carbonic acid | ... 73·54 per cent. | ... 77·60 per cent. |
| Oxygen | ... ... 7·46 ,, | ... 7·00 ,, |
| Nitrogen | ... ... 19·00 ,, | ... 15·40 ,, |

[1] THE LANCET, May 9th, 1896, p. 1307.

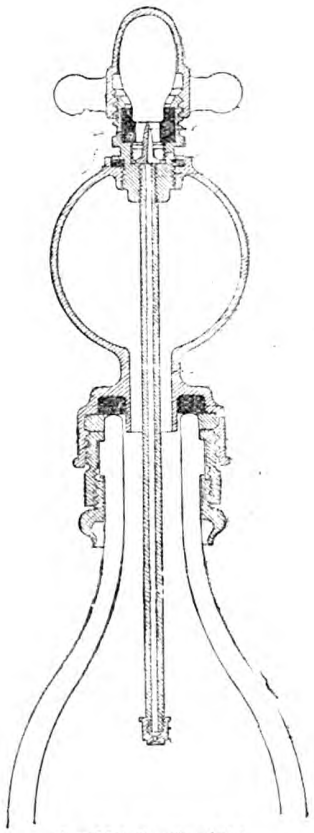
The presence of oxygen seems, however, to interfere with the complete aeration of the water by carbonic acid gas, although oxygen does undoubtedly soften the "sharpness" of taste of artificial carbonated water in general. It will be seen that the gases contain an important amount of nitrogen which is very sparingly soluble in water even under high pressure. Doubtless if the nitrogen were quite eliminated the aeration with the mixed gases would be more satisfactory.

FIG. 1.

Sparklet bottle with lever stopper.

Having described in some detail the accurate manner in which the sparklet is made and filled, and having recorded also the facts that the amount of gas in the same-sized sparklet varies within quite negligible limits and that the carbonic acid gas is as pure as it is possible to be, we may next consider the manner in which the extemporaneous aeration of water is effected by the sparklet. The aeration may be performed in a simple bottle as shown in Fig. 1 or in a bottle provided with a syphon tube (Fig. 3). The construction of the bottle and the charging tube is best explained in Fig. 2. The sparklet is placed in position just above the metal globe and just over a fine steel point. The neck of the sparklet placed downwards fits into a rubber washer. The bottle is then nearly filled with water and the charging apparatus attached by means of a screw so that the

FIG. 2.



Sparklet charging tube.

tube which delivers the gas just dips under the surface of the water. The screw cap at the extreme top of the apparatus is then screwed on, just covering the sparklet. The sparklet is thus brought to press upon the steel point, and carbonic acid gas escapes gently and uniformly and passes down the dip-tube through the water. A little shaking in order to facilitate the assimilation of the gas by the water completes the operation. It may be done in a few minutes and still water may be converted into aerated water within this time. Of course the result is better if time is allowed for the gas to dissolve in the water. We have noticed no evidence of risk attending this operation. It will be seen that the top of the charging tube contains a metal sphere which renders the carbonating process quite safe, this space sufficing to act as a cushion for the released gas, resistance being equal in all directions. As a further precaution the bottles are enclosed in a wicker cage. As a matter of fact, however, there is practically no record of bursting having occurred with the new form of sparklet bottle. Further, very great care is taken—and we have satisfied ourselves of this by inspection at the factories—to submit all bottles to a very severe pressure test which largely exceeds that which could ever obtain in practice even in the tropics. In these severe tests the proportion of bottles that fail to satisfy the examiner is exceedingly small and bursting is very rare indeed. The sparklet bottle is provided with a lever stopper attached to the neck of the bottle, so that if only a part of the contents is used the rest may be tightly corked and secured against getting flat or insipid by thus locking in the gas.

The sparklet syphon is a very ingenious arrangement. It holds about twice the quantity of water that the large-sized bottle does—that is, about two pints. Two sparklets of large size are used for the aerating operation. The construction of the sparklet syphon will be clear from a glance at Fig. 3. To obtain a syphon of soda-water aerated by the sparklet system the following is the procedure. First the bottle is nearly filled with water through a stopper at the side, and the stopper is replaced. There is a red mark on the shoulder of the bottle which defines the quantity that may be put in. Next a large sparklet is placed in position over the central tube and screwed gently down by means of the lever key. As with the ordinary sparklet bottle gas is discharged into the syphon, and by regulating the screw one way or the other the charging may be conducted with perfect uniformity and regularity. It is better to shake the syphon as the successive additions of gas are made. The quantity of gas discharged is under complete control and the operation can be done easily, as it should be, in instalments. As soon as the first sparklet ceases to discharge any further gas it is taken out by releasing the screw and a second sparklet is put in position in its stead and the same operation is repeated. There is no escape to speak of on the removal of the first sparklet since the valve opens inwards. The second sparklet is not removed until the syphon is empty. On the exhaustion of the second sparklet the lever key is made to take several turns until it rests on the edge of a metal gallery. At this point it becomes the lever of the syphon lifting the valve on depressing the key. The aerated water then escapes as with the ordinary well-known soda-water syphon. We have experienced no difficulty in producing in this way a syphon full of pure bright sparkling water. The convenience of the sparklet method of aerating waters is particularly manifest in the case of the sparklet syphon. We may add that the sparklet syphons are submitted to the same severe tests in regard to the pressure which they will stand as are the ordinary sparklet bottles.

FIG. 3.

Sparklet syphon.

The question of possible metallic contamination is one, of course, which must not be overlooked and we have made some definite experimental investigation upon this important point. To begin with, assuming that there is any prolonged contact of the carbonated water with any of the metallic fittings of the sparklet, these fittings are throughout coated with tin so that there is not at any part of the apparatus any metal which would form an injurious salt with the carbonated water or which would contaminate the water. While on this subject we may instructively refer to the experimental work of THE LANCET Special Analytical Commission on Mineral Water Machinery and Metallic Contamination. In this report, which was published in THE LANCET of Jan. 7th, 1893 (p. 43), it was shown that water saturated with carbonic acid gas under pressure easily dissolved lead, copper, zinc, and iron, but not tin. Since, then, the metallic fittings of the sparklet apparatus are effectively tin-lined it is difficult to see how any objectionable metallic

contamination of the water could take place. The only point of the sparklet apparatus likely to be attacked would be the dip tube which, however, is also tin-coated, but if stout capillary glass tubing could be substituted it would undoubtedly be an advantage, for the strain put upon metallic fittings by carbonated water is severe, especially when the metal is immersed for a long time. This question requires, however, very careful inquiry and we have made a series of experiments with the view of ascertaining whether in the sparklet any metallic contamination of the water took place. The results obtained leave little doubt that the water aerated by the sparklet method is free from metallic impurity. Occasionally slight traces of iron, however, were found in the water, due probably to the steel bomb, but never any poisonous metal. The presence of iron in small amount in carbonated water, though not objectionable from a hygienic point of view, makes the water unsuitable for admixture with wines or spirits or any beverage containing traces of tannin. Iron was never found in aerated water freshly made by the sparklet system or in water which was several days old, but only in aerated waters which were left to stand for weeks in the sparklet apparatus in order to make the test as severe as possible.

Obviously the easy extemporaneous aeration of liquids as afforded by the Sparklet system introduces a very wide field of application. By means of this system the aeration of all liquids may be easily effected and without any dilution. Milk, for example, can be charged straight away with carbonic acid gas without any addition of water at all, and undiluted aerated milk has been found to be an excellent beverage and food for invalids, especially where an irritable condition of the digestive functions exist. The sparklet, too, may be used for aerating wines without dilution or for making wine brisk which has become flat. To some extent the system of aeration by sparklets ensures the purity of the sparkling beverage, for the consumer can choose a special supply of water or other liquid of ascertained purity of character for the purpose. For transport purposes and for people in isolated parts of the world the sparklet system has proved invaluable, since it obviates the carriage of the water in aerated form; the water on the spot can be readily aerated by means of the sparklet apparatus. Lastly, the system of sparklets affords a ready means of preparing alkaline waters or waters containing mineral ingredients corresponding in character with those present in medicinal springs. Thus tablets are supplied for use with sparklets which when dissolved in the water subsequently aerated produce potash-, lithia-, or soda-water, or liquids approximating to the composition of Seltzer, Carlsbad, Vichy, and Malvern waters. As is well known an effervescent water affords a very agreeable way of administering these medicaments. Another interesting application of the sparklet system, and an important one for hospital purposes or for the sick room, is that iced carbonated water may easily be obtained by placing powdered ice in the bottle before charging. This method obviates the placing of the ice in the water after it has been aerated, which generally displaces a good deal of dissolved gas and tends, therefore, to render the liquid flat and insipid. Similarly syrups may be readily aerated; lime juice, lemon juice, &c., and a number of "fruit drinks" are prepared for the purpose.

The following are the conclusions to which we are led in regard to the sparklet system of aerating liquids by the experiments already cited:—1. The system is safe in view of the great care that is taken to test every essential part of the apparatus and carefully to gauge the amount of gas in the steel bombs before they are sent out of the factory.[2] The liability of bursting of the sparklet apparatus is no greater than in the case of the ordinary bottle or syphon of carbonated water. 2. The carbonic acid gas is very pure. 3. There was no evidence obtained that the system introduces any element of risk in regard to metallic contamination. 4. The system is easily understood and affords a simplicity of procedure in order to obtain a satisfactorily aerated beverage. 5. The system is applicable to the aeration of special liquids containing a standard quantity of drugs, in which case the suitability of the medicated water should be referred to the medical man. 6. Since the choice of water or liquid is left to the consumer some security can be obtained by this system as to the purity of the aerated drinks so prepared.

[2] Should a sparklet be exposed to excessive pressure either the washer would give way or the little cup be blown out, permitting the gas to escape in a comparatively harmless way. The safety of the sparklets for carriage and storage has been demonstrated by Professor Boys, F.R.S., and others.

## ANNUAL REPORT FOR 1899 ON BIRTHS, DEATHS, AND MARRIAGES IN IRELAND.

BY the courtesy of the Registrar-General for Ireland we have been favoured with the thirty-sixth annual report for the year 1899. This is the first report that has been issued from the Irish Register Office since the untimely death of Dr. T. W. Grimshaw, C.B., who for very many years discharged, with great distinction to himself and to the entire satisfaction of his medical brethren, the duties of the office which have since fallen to Mr. Robert Matheson. The report for 1899, which, like previous issues, appears within a reasonable period of the close of the year to which it relates, is drawn up mainly on the same lines as those of the late Registrar-General. There are, however, certain additions and improvements in the present volume which have been introduced apparently for the first time, and to these we shall draw attention presently. According to the table on the first page the birth-rate in Ireland has scarcely changed since 1889; it was 22·9 last year, and differed from the average in the previous 10 years by only 0·1 per 1000. The marriage-rate was also very low, being only 4·9 per 1000 in 1899, but this is a trifle higher than the average rate in 1889–98. The report shows that the proportion of emigrants stated to have left one or other of the Irish ports was greater last year than in any year since 1895. The mortality from all causes last year was so low as 17·6 per 1000 living; it was the same in both sexes, and was slightly lower than the average rate in the previous 10 years. It appears to be customary in Ireland that a relatively large number of the population should die in union workhouses; this is especially noteworthy in Leinster and in Munster, where the proportion of the total deaths that are registered in workhouses is as high as 14·2 and 16·1 per cent. respectively. In this report we notice a new diagram (No. 2) which shows graphically the proportion of the total mortality that is due to the chief causes. This diagram is very instructive; it indicates at a glance the commoner causes of death that were most fatal and those that were least so in Ireland in the year 1899. We would fain see a similar diagram in the reports of the English Register Office. Among the ordinary infectious diseases, both typhus fever and typhoid fever seem to retain their hold very persistently on the Irish people: 117 deaths from the former disease and 890 from the latter having been registered in the year 1899; both these numbers, however, are considerably below the average. Influenza again became epidemic towards the close of 1899, and although not so fatal as in the year 1893 it nevertheless caused 1716 deaths in 1899, which is considerably in excess of the average. In passing from a consideration of the general and zymotic mortality to that of the mortality from tuberculous disease we notice an irregularity which might readily lead to misconception and which therefore we hope to see remedied in future reports from the Sister Isle. Whilst the general and the zymotic death-rates are stated in proportion to 1000 persons living we find that the mortality from tuberculous disease is stated in one paragraph as so many per 1000 and in the next paragraph as so many per 10,000 of the population. Rates are frequently calculated per 1,000,000 or per 100,000 of the population with the object of avoiding decimals, but there surely can be no object in giving the rates per 10,000 living, for in that case fractions would still be required, and they are actually given in the report before us. In England the rates are calculated either per 1,000,000 or per 1000 of the population. The plan is to be commended on many grounds, and we should be glad to see it adopted elsewhere. Opposite page 16 is given a map which shows by means of different colours the variations in the mortality from tuberculous disease in each of the Poor-law unions of Ireland. From this map it appears that in three only of the unions were the deaths from this cause less than 1 per 1000 of the population. In 83 unions the rate was under 2 per 1000, in 17 it was under 4 per 1000, in two it was under 5 per 1000, and in two it was over 5 per 1000. As is the case in England,

tuberculosis is more prevalent in the urban than in the rural districts of Ireland. Thus we find that although in the latter the mortality was considerably less than 1 per 1000, it was as high as 4·6 in Cork and Belfast and amounted to 5·7 per 1000 in the south and to 6 per 1000 in the north of Dublin city. Of the total deaths from tuberculous disease about five-sixths were caused by phthisis, the residue being referred to tuberculous meningitis, tabes mesenterica, or to "scrofula," with other forms of tuberculosis. The deaths from malignant disease in 1899 were in the proportion of 0·59 per 1000 living; they were considerably more numerous among females than among males. During the 10 years 1889–98, with one exception, there was a continuous increase in the mortality from these diseases. An instructive table will be found at page 19, showing the parts of the body invaded by cancer and also the rates of mortality at the various groups of ages. From this table we see that of the 2654 deaths from malignant disease registered in 1899, 497 were referred to disease of parts of the head and neck and that of these more than two-thirds occurred in males. 636 of the classified cases were deaths from cancer of the stomach: 283 females died from cancer of the breast, and 174 from cancer of the uterus. As is the case in England also the mortality from cancer is low during the first 20 years of life, but from the twenty-fifth year onwards it increases steadily until at the age-period of from 65 to 75 years it kills as many as 364 in each 1000 living at that period. A noticeable feature in the Irish registration reports is the record of meteorological observations in Dublin for each month in the year. The observations are taken by Sir John W. Moore, president of the Royal College of Physicians of Ireland, at his house in Fitzwilliam-square West. For more than 20 years these observations have been recorded daily and the results have been published in the *Dublin Journal of Medical Science*. But in Ireland the close relation of meteorological conditions to public health was recognised at an early date and Dr. Grimshaw was not slow in obtaining Sir John Moore's permission to print his returns as an appendix to his own earlier reports as Registrar General of Ireland. In recent years the scientific value of these returns has been increased for comparative purposes by the addition of corresponding observations taken by Sir John Moore at his country residence in county Wicklow. The detailed observations and remarks of this distinguished meteorologist, continued as they have been for a long series of years, form an instructive and valuable appendix to the reports of the Irish Registrar-General.

## THE PLAGUE IN GLASGOW.

THERE is but little to add concerning the plague in Glasgow except that the number of cases has risen to 27.

In consequence of the appearance of plague in Glasgow and in view of the possible occurrence of cases in England and Wales the Local Government Board have issued an Order to sanitary authorities in "England and Wales (including London)." The Order applies as well to all vessels within the jurisdiction of a port sanitary authority or a riparian authority. The chief points of the Order are that plague is constituted a notifiable disease under the Notification of Infectious Diseases Act of 1899 and that sanitary authorities shall have the same powers and duties in relation to the notification of plague as they would have under Section 55 of the Public Health (London) Act, 1891, if plague were an infectious disease to which that section applied. Further, it shall be the duty of every medical officer of health to report to the Local Government Board any case of plague which may be notified to him or which may otherwise come or be brought to his knowledge and which may occur in the district or area assigned to his charge.

### CLINICAL ASPECTS OF THE CASES OF PLAGUE.

The following are some notes from Dr. A. K. Chalmers upon cases of plague occurring since Sept. 13th, and are explanatory of their association, so far as is known, with previous cases. Some of the cases were, it will be seen, also mentioned in our issue of Sept. 22nd:—

1. Mrs. B., aged 29 years, of 81, Cubie-street, who sickened on Sept. 13th, is the wife of a man employed in the sanitary wash-house, whose work consists in the disinfection of and removal of clothing from houses in which cases of plague have occurred. The result has been that we now insist on a bath and change of clothing after using clothing from infected houses. The use of overalls has been a matter of custom for some time, but these evidently do not afford complete protection.

2. A family named M. resided at 57, South Coburg-street. Mrs. M., aged 40 years, sickened on Sept. 16th: Mary M., aged 14 years, on the 13th; Robert M., aged 11 years, on the 15th; and Mrs. Margaret M., a daughter of Mrs. M., aged 20 years, who lived with her mother, on the 14th. All these persons formed one household, in which, as we were informed by neighbours, cases of illness had occurred. We find that these persons had an indirect association with the family T., of 23, Oxford-lane, and that on August 22nd a daughter of the family named Kate, aged 14 years, sickened, and died on the 28th, the cause of her death being certified as "pneumonia." The friends describe her illness as having been accompanied by painful swellings about the neck and arms.

In addition to the above, George H., aged 46 years, a boot top fitter, residing at 248, Mathieson-street, was admitted to the Belvidere Hospital on Sept. 14th, and died on the following day. He had been in association with a case provisionally regarded as ill-defined typhus fever, as explained below, which case, as the result of a post-mortem examination, has now been recognised as due to plague. George H. sickened on Sept. 7th. His illness was associated with sickness in a family named G., living at the same address. Mrs. G. was removed to hospital on Sept. 1st., and died on the 4th of suspected typhus fever, whilst her daughter at the time of her removal was discovered dead in their house. In Mrs. G.'s case the question of plague was considered, and the diagnosis was held in suspense until a post-mortem examination had been made, the result of which was inconclusive.

Since Sept. 19th no case of plague is known to have occurred among the population of Glasgow, the admission to the hospital on the 20th being that of a male patient from Govan who had been sent to one of the general hospitals for treatment for what was regarded as an affection calling for surgical care, and who was thence transferred to the Belvidere Hospital.

The following table continues the record of admissions into the hospital:—

| Name. | Address. | Sickened. | Removed to hospital. | Where exposed to infection. |
|---|---|---|---|---|
| (1) Charles McM. | 52, Dale-street. | Sept. 8th | Sept. 9th | Slept on a bed on which a neighbour had died from "pneumonia" on August 28th. Was buried on Sept. 1st. |
| (2) Rosina M. ... | 23, Florence-street. | August 23rd | ,, 10th | Worker in a hair factory; no known association with other cases. |
| (3) Mrs. B. ... ... | 81, Cubie-street. | Sept. 13th | ,, 14th | Wife of a clothes-collector in sanitary washhouse. |
| (4) Ellen R. ... ... | Belvidere Hospital. | ,, 13th | ,, 14th | Cleaner in plague ward. |
| (5) George H. ... | 248, Mathieson-street. | ,, 7th | ,, 14th | See note in text. |
| (6) Mrs. M. ... ... | 57, South Coburg-street. | ,, 14th | ,, 15th | A married daughter of Mrs. M. (No. 9), admitted Sept. 16th. |
| (7) Mary M. ... | ,, | ,, 14th | ,, 15th | See details in text. |
| (8) Robert M. ... | ,, | ,, 14th | ,, 16th | ,, ,, |
| (9) Mrs. M. ... ... | ,, | ,, 13th | ,, 16th | ,, ,, |
| (10) Mrs. G. ... ... | 52, Dale-street. | ,, 18th | ,, 19th | Sister and niece of C. McM. (No. 1). See note below. |
| (11) Mary G. ... ... | ,, | ,, 18th | ,, 19th | |
| *(12) William W. ... | 21, Robert-street, Govan. | ,, 1st | ,, 20th | — |

* Admitted through one of the general hospitals.

In addition to the above five persons were removed to the Belvidere Hospital during the fortnight, presenting symptoms which at the time of their admission gave rise to a suggestion of plague. In three of these cases the further development of the symptoms enabled them to be set aside as definitely not cases of plague, while two cases still remain under observation.

RELATIONSHIP OF CASES.

(1) Charles McM. has no association which can be traced with earlier known cases. A neighbour had died on August 28th from "pneumonia" and was buried on Sept. 1st. After the death the bed on which he had laid was transferred to McM.'s house and was used by McM. and his wife.

(2) Rosina M. sickened on August 23rd, a swelling in the groin being observed by herself on the 26th. She had no regular medical attendance and the nature of her illness was not recognised till Sept. 10th.

Cases in the above table numbered 3 and 6-9 are described on p. 964 (cases 1 and 2).

(4) Ellen R. is a ward-cleaner employed in the plague ward, who, like all the others whose work brings them into contact with these cases, received an injection of 10 cubic centimetres of Yersin's serum. This was on Sept. 3rd, and she sickened on the 13th, her illness being of the mildest possible description. The micro-organism has, however, been recovered from an affected gland.

(5) George H., aged 46 years, is a boot top fitter, residing at 248, Mathieson street. He was admitted into the hospital on Sept. 14th and died on the following day. At the necropsy his death was found to have resulted from plague. He sickened on the 7th. His illness was associated with earlier illnesses in a family (G.) living at the same address. Mrs. G. was removed to hospital on Sept. 1st and died on the 4th from suspected typhus fever, whilst her daughter at the time of her removal was discovered dead in their house. In Mrs G.'s case the question of plague was considered because she was known to have been a visitor at the house of the family B. where the earlier cases occurred, but the diagnosis was held in suspense. At the necropsy the evidence was still held as inconclusive.

(10) Mrs. G. is a sister of patient No. 1 and sickened under observation on Sept. 18th. On the 10th she had been given subcutaneously 10 cubic centimetres of Yersin's serum. She had a mild attack.

(11) Mary G., aged six years, a daughter of patient No. 10, also sickened on Sept. 18th. Because of her age and some passing indisposition an injection of Yersin's serum was not given. Her attack has proved fatal.

Putting these together with the earlier admissions we have now had a total of 27 admissions from definitely recognisable plague, and of these up to the present (Sept. 26th) five have died and 22 remain under treatment, one of these being a patient from the adjoining burgh (Govan).

MILD NATURE OF THE ATTACK IN MANY CASES.

Eight only of the cases coming under treatment in hospital can be classed as severe attacks, and of these five have died. Seven, on the other hand, are of extreme mildness so that save for their association with recognisable cases a suggestion of plague would scarcely have been raised. 12 fall into a middle class, the severity in individual cases ranging between the severe and the mild type just alluded to, but with a tendency to mildness rather than otherwise. With regard to many of the milder forms the question of diagnosis is no easy one. We are familiar in small-pox outbreaks with the extremely modified form which the disease may present in persons fairly well protected by vaccination, and where a definite history of exposure alone affords a means of interpreting aright symptoms which would indeed rarely be critically surveyed were the persons not under observation at the time. We are now learning practically that in a corresponding way plague can become so defaced by mildness in its form of attack that an administrative difficulty of no inconsiderable magnitude is created. Consequently I believe safety lies in disregarding the query which constantly haunts these milder forms and in dealing with the surroundings and associates of the suspect as if no doubt as to the nature of his illness existed.

YERSIN'S SERUM.

Over 60 persons known to have been in association with patients suffering from plague have been immunised by subcutaneous injection of Yersin's serum in doses of 10 cubic centimetres. Of these two have sickened with a very modified form of the disease. Questions of dosage and the method of administration will require consideration in the light of these partial failures. The serum is much more powerful as a curative agent when injected into the veins than when given subcutaneously, and it may be that the full protective value for "contacts" is only to be obtained by a similar selection of site.

DISINFECTION.

To the methods of disinfection formerly described we have now added a final gaseous disinfection of the house with formic aldehyde. When disinfection and cleansing is finished the windows of the house are left open.

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In our issue of Sept. 8th we published "A Preliminary Note on the Outbreak of Bubonic Plague in Glasgow," wherein it was mentioned that Dr. Thomas Colvin and another medical man had been the first to see and notify the cases which turned out to be plague. The second medical man was Dr. C. E. Robertson.

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# THE REPORT OF THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA FOR 1898.

CONCLUDING NOTICE.[1]

BEFORE dismissing altogether the subject of the prevalence of enteric fever among our troops serving in India we may refer to a few of the facts and conclusions set forth in the report under review. In the section devoted to the native army there is a tabular statement which brings out in a very striking way the extremely low ratios of admissions and deaths from this fever among the native troops and jail population respectively as compared with those of European troops. Nor can this difference be attributed to one of diagnosis only, for the total fever mortality in the two armies is very different. Among the European troops 54 per cent. of all deaths in 1898 were from fevers, whereas they were only 16 per cent. among native troops. Seeing then that the death-rate of European troops was so much greater than that of native troops from all kinds of fever it seems to follow that the nature of the fevers cannot be the same in both cases and that native soldiers and prisoners are far less liable to enteric fever than are British soldiers. While there can be no doubt that this fever is water-borne, and that outbreaks of it are very frequently traceable to a contaminated water-supply, there is no reason why this should invariably be the case. At Quetta the disease prevailed with greater virulence in the year under report than in any other Indian station, but the catchment area is described is an ideal one and the water as above suspicion. We notice that Major A. M. Davies, R.A.M.C., whose training as assistant professor of hygiene at Netley specially qualified him for such an investigation, excludes water as a probable cause of the sickness at Quetta and has recourse to the aerial distribution by dust-storms of sewage-derived germs from badly-placed filth trenches as an explanation. It does not follow, of course, that because the presence of Eberth's enteric bacillus was not detected in the water the disease was not spread by its agency. The epidemic at Maidstone is a case in point. Not only have our ideas been greatly enlarged in regard to possible sources of infection, but the long-continued period over which the infection may extend in those who have suffered from an attack, as well as the fact that clinically the mildest cases of enteric fever may be just as virulent as the worst for spreading infection, have all tended to increase our difficulties in tracing out the sources of it.

The study of the scientific differentiation of the fevers of India (whether physical or microbic) from one another is being actively prosecuted and we know already that, in addition to enteric fever and fevers of a malarial type attributable to the malarial parasite, there are now good grounds for believing that Mediterranean (so-called Malta) fever also prevails in India. Still, enough has been said to indicate the state of uncertainty for all practical purposes that exists regarding our knowledge about the causes of the terrible prevalence of enteric fever in India. As Major

[1] The first notice appeared in THE LANCET of Sept. 15th, 1900, p. 832.

Davies remarks, water which has been boiled, if subsequently exposed to contamination by dust, is liable to become a very impure and dangerous water unless great care is taken in its storage. At page 28 of the Sanitary Commissioner's report under review there are some pertinent remarks on the difficulties attending the use of the Chamberland filter on military service owing to the too fragile nature of the bougies.

It must be confessed that any wholesale study, as it were, of the literature in regard to the etiology and causes of enteric fever is rather bewildering than otherwise to the practical sanitarian. The recognition of the bacteriological causes of disease has, no doubt, opened out a vast field and given precision to our investigations. But it has to be borne in mind that it is only when the results of such investigations have become sufficiently well established as to admit of being practically applied that the sanitarian is, officially speaking, warranted in recommending the expenditure of public money for that purpose. As regards preventive medicine it is mainly in the direction of personal protection by inoculation against infectious diseases that the most promising and successful attempts to avert or to eradicate an epidemic or to protect individuals have of late been made. The labours of Mr. Haffkine in regard to inoculation against plague and those of Professor Wright in respect of typhoid fever may be mentioned as among the most recent advances in this direction.

The army of India shared in the comparative immunity from cholera which characterised the year 1898 in India generally. The mortality from abscess of the liver in 1898 was 25 times greater among European than among native soldiers. On the other hand, the admission rate from dysentery among European soldiers was to the ratio of the native soldiers as 1 to 1·5, the relation being the same as in the two preceding years. Some interesting medical points and further particulars in connexion with dysentery and abscess of the liver are detailed at page 64 *et seq.* of the report and the matter was gone into at length in the Sanitary Commissioner's report for 18 4. In passing, we are tempted to inquire into the causes of these differences and whether the relative insusceptibility of the native to abscess of the liver can be attributable to differences of diet—such as the absence of alcoholic drinks and animal food in the case of the native of India.

As regards the prevalence of venereal disease in the army serving in India we are glad to notice that there was a decrease in the admission rate. Touching the diseases of the jail population, the predominant causes of jail mortality are bowel complaints, respiratory diseases, and tubercle of the lungs. Bowel complaints are very common and cause a very large mortality. As the Sanitary Commissioner remarks: "There would be little exaggeration in saying that the prevention of these complaints is the beginning and end of jail hygiene, as it certainly is the most difficult of the problems the jail medical officer has to face." The Sanitary Commissioner, comparing the rates of mortality of the different classes one with another, sums up the comparison as follows: The chief cause of deaths among European troops was fever, among native troops respiratory diseases, and among prisoners bowel complaints.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 33 of the largest English towns 6356 births and 4041 deaths were registered during the week ending Sept. 22nd. The annual rate of mortality in these towns, which had declined from 21·7 to 18·2 per 1000 in the three preceding weeks, further fell last week to 18·1. In London the death-rate was 16·5 per 1000, while it averaged 19·2 in the 32 provincial towns. The lowest death-rates in these towns were 11·5 in Croydon, 12·3 in Bradford, 12·4 in Halifax, and 13·2 in Cardiff; the highest rates were 23·5 in Brighton, 23·8 in Hull, 24·3 in Salford, and 25·5 in Blackburn, in Sheffield, and in Sunderland. The 4041 deaths in these towns included 771 which were referred to the principal zymotic diseases, against 1422, 1143, and 879 in the three preceding weeks; of these 497 resulted from diarrhœa, 105 from whooping-cough, 72 from diphtheria, 50 from "fever" (principally enteric), 26 from measles, and 21 from scarlet fever. No death from any of these diseases occurred last week in Halifax; in the other towns they caused the lowest death-rates in Croydon, Birkenhead, Huddersfield, and Bradford; and the highest rates in Preston, Sheffield, Hull, and Gateshead. The greatest mortality from measles occurred in Swansea; from scarlet fever in Sunderland; from whooping-cough in Nottingham, Blackburn, and Gateshead; from "fever" in Bolton and Portsmouth; and from diarrhœa in Wolverhampton, Preston, Sheffield, Hull, and Gateshead. The 72 deaths from diphtheria included 30 in London, nine in Leicester, and seven in Sheffield. No fatal case of small-pox was registered last week in any of the 33 towns; and only two small-pox patients were under treatment on Saturday last, Sept. 22nd, in the Metropolitan Asylums Hospitals. The number of scarlet fever patients in these hospitals and in the London Fever Hospital at the end of the week was 1804, against 1702, 1736, and 1753 on the three preceding Saturdays; 269 new cases were admitted during the week, against 176, 213, and 243 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 124 and 161 in the two preceding weeks, further rose last week to 203, and were 30 above the corrected average. The causes of 40, or 1 0 per cent., of the deaths in the 33 towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Nottingham, Salford, Newcastle, and in 14 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Manchester, and Sheffield.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 17·5 and 18·9 per 1000 in the two preceding weeks, was again 18·9 during the week ending Sept. 22nd, and was 0·8 per 1000 above the mean rate during the same period in the 33 large English towns. The rates in the eight Scotch towns ranged from 16·6 in Leith and 16 9 in Perth to 20 1 in Aberdeen and 22·3 in Greenock. The 584 deaths in these towns included 62 which were referred to diarrhœa, 20 to whooping-cough, 11 to diphtheria, seven to "fever" (including one fatal case of bubonic plague), five to measles, four to scarlet fever, and three to small-pox. In all 112 deaths resulted from these principal zymotic diseases, against 83 and 98 in the two preceding weeks. These 112 deaths were equal to an annual rate of 3·6 per 1000, which was slightly above the mean rate last week from the same diseases in the 33 large English towns. The fatal cases of diarrhœa, which had been 42 and 54 in the two preceding weeks, further rose last week to 62, of which 26 occurred in Glasgow, 11 in Edinburgh, nine in Aberdeen, and seven in Dundee. The deaths from whooping-cough, which had been 21 in each of the two preceding weeks, declined to 20 last week and included 16 in Glasgow. The fatal cases of diphtheria, which had been three, five, and six in the three preceding weeks, further rose last week to 11, of which three were registered in Edinburgh, three in Paisley, two in Dundee, and two in Greenock. The deaths referred to different forms of "fever," which had been four and seven in the two preceding weeks, were again seven last week and included three in Paisley and three (one of which was a death from bubonic plague), in Glasgow. The fatal cases of measles, which had decreased from 16 to two in the five preceding weeks, rose again last week to five, of which two occurred in Glasgow and two in Edinburgh. The deaths from scarlet fever, which had been four and seven in the two preceding weeks, declined again to four last week, and included three in Glasgow, where the three fatal cases of small-pox were also registered. The deaths referred to diseases of the respiratory organs in these towns, which had been 79 and 70 in the two preceding weeks, rose again last week to 101, and showed an excess of 37 over the number in the corresponding period of last year. The causes of 26, or more than 4 per cent., of the deaths in these eight towns last week were not certified.

### HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 22·2 and 24 8 per 1000 in the two preceding weeks, declined again to 24·5 during the week ending Sept. 22nd. During the past four weeks the death-rates in the city has averaged 24·6 per 1000, the rates during the same period being 17 9 in London and

17·1 in Edinburgh. The 164 deaths belonging to Dublin registered during the week under notice were only two less than the number in the preceding week, and included 31 which were referred to the principal zymotic diseases, against 26 and 44 in the two preceding weeks; of these 24 resulted from diarrhœa, three from whooping-cough, three from "fever," one from diphtheria, and not one either from small-pox, measles, or scarlet fever. These 31 deaths were equal to an annual rate of 4·6 per 1000, the zymotic death-rate during the same period being 2·7 in London and 3·1 in Edinburgh. The fatal cases of diarrhœa, which had been 32, 20, and 27 in the three preceding weeks, declined again to 24 last week. The deaths from whooping-cough, which had increased from four to seven in the three preceding weeks, declined again last week to three. The deaths referred to different forms of "fever" showed a decline of four from the number in the preceding week. The 164 deaths in Dublin last week included 43 of infants under one year of age and 35 of persons aged upwards of 60 years; the deaths of infants showed a decline, while those of elderly persons exceeded the number in the preceding week. Three inquest cases and four deaths from violence were registered, and 40, or nearly one-fourth, of the deaths occurred in public institutions. The causes of 11, or nearly 7 per cent., of the deaths in the city last week were not certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon Charles James to the Cape of Good Hope Hospital. Surgeon E. T. P. Eames to the *Sans Pareil*.

### ROYAL ARMY MEDICAL CORPS.

The Secretary of State for War has offered nominations to the Royal Army Medical Corps to the following universities, colleges, and medical schools:—University of Aberdeen; University of Durham; University of Edinburgh; University of Glasgow; Catholic University of Ireland; the Mason University; Trinity College, Dublin; Queen's College, Cork; Queen's College, Belfast; Yorkshire College, Leeds; University College, London; King's College, London; Royal College of Surgeons in Ireland; St. Bartholomew's Hospital, London; St. Mary's Hospital, London; and St. Thomas's Hospital, London.

### VOLUNTEER CORPS.

*Royal Engineers:* 1st Durham: Surgeon-Captain F. W. Gibbon to be Surgeon-Major. *Rifle:* 3rd Volunteer Battalion the East Surrey Regiment: Surgeon-Lieutenant-Colonel W. A. F. Bateman resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 2nd Volunteer Battalion the Welsh Regiment: Surgeon-Major J. H. Davies resigns his commission, with permission to retain his rank and to wear the uniform of the battalion on retirement. 2nd Volunteer Battalion the King's (Shropshire Light Infantry): Surgeon-Major C. H. Gwynn to be Surgeon-Lieutenant-Colonel. 3rd London: The undermentioned officers resign their commissions:—Surgeon-Captain W. M. Abbot-Anderson and Surgeon-Lieutenant R. Fenner.

### TRANSVAAL WAR NOTES.

The following officers of the Royal Army Medical Corps have been discharged from hospital for duty:—Lieutenant S. G. Butler, Lieutenant H. F. Hart, Major H. D. James, and Captain G. A. T. Bray.

### SOME OF THE LESSONS OF WAR.

There is very little doubt that the experience acquired in South Africa, China, and in West Africa during the Ashanti campaign, will lead to many changes and modifications in the clothing and equipment of the army. If we may judge from the accounts received from China, where there has been an unusual opportunity of comparing the clothing and equipment of troops of the allied forces one with another, the khaki clothing of British troops is, on the whole, the best adapted for service in war. The reports at the end of the campaign in China should contain a large amount of useful and instructive information on a variety of practical points relating, among other things, to army hygiene and the field medical systems and arrangements followed by the armies of Russia, Germany, France, and Japan.

There is one thing to be feared perhaps, as a possible result of our campaign in South Africa, and that is that reforms and changes may be recommended which would be admirably adapted for fighting with the Boers in their own country but not by any means so well adapted for fighting elsewhere with trained and disciplined troops moving together on recognised military methods and in accordance with those strategical and tactical systems of scientific warfare which are recognised and followed by continental armies.

### ARMY MEDICAL SCHOOL, NETLEY.

The eighty-first winter session of the Army Medical School will commence on Monday, Oct. 1st. The session will be attended by 23 surgeons-on-probation who have gained entrance to the school by examination—nine for the Royal Army Medical Corps and 14 for the Indian Medical Service. The following is a list of the surgeons-on-probation who are entering the Army Medical School by examination:—

ROYAL ARMY MEDICAL CORPS.

1. H. J. McGrigor.
2. W. R. S. Goodwin.
3. J. H. Brunskill.
4. A. C. Duffey.
5. A. W. Gibson.
6. C. D. Myles.
7. R. N. Hunt.
8. H. E. Howley.
9. R. F. M. Fawcett.

INDIAN MEDICAL SERVICE.

1. C. W. Melville.
2. N. S. Wells.
3. R. McCarrison.
4. J. Masson.
5. W. Anderson.
6. W. D. Pringle.
7. E. H. B. Stanley.
8. W. H. Leonard.
9. J. G. G. Swan.
10. R. McL. Dalziel.
11. A. W. C. Young.
12. J. J. Robb.
13. S. A. Razzak.
14. R. B. B. Foster.

### THE BLANE GOLD MEDAL.

The Blane gold medals for medical officers of the Royal Navy have just been awarded to the undermentioned officers—viz., Staff Surgeon J. Macdonald Rogers, of H.M.S. *Terror*, and Surgeon Oswald Rees, Royal Marine Light Infantry, Walmer.

### DEATHS IN THE SERVICES.

Lieutenant-Colonel Michael Richard Ryan, Royal Army Medical Corps, aged 48 years, at Hong Kong on the 23rd ult. He joined the army in 1877 and reached the rank of Lieutenant-Colonel in 1897. He served in the Afghan war, 1878–70, including the advance through the Khyber Pass and capture of Ali Musjid (medal), and in the Egyptian war, 1882, including the battle of Tel-el-Kebir (medal with clasp and bronze star).

## Correspondence.

"Audi alteram partem."

## PARISH MEDICAL OFFICERS IN THE HIGHLANDS AND ISLANDS.

*To the Editors of* THE LANCET.

SIRS,—Now that the reply of the Local Government Board to our memorial for assistance from our parish councils to get an annual holiday has been received it seems to me an opportune time to expose the unfair and defective conditions under which we parish medical officers labour. I have been hoping the matter would be taken up by a more capable man than myself, but apparently no one will take the initiative. Having been a Poor-law medical officer for over 10 years, during which time my absence from the parish on holidays has reached the magnificent aggregate of six weeks (the parish minister's annual holiday), I feel a certain qualification for undertaking my self-imposed task. Our inability to get a much-needed holiday arises from two causes—want of money and the excessive fees charged by locum-tenents, fees which wealthy practitioners in the south can easily pay but which are quite beyond our slender means.

If we look into the matter we find that these Highland and island parishes are composed of very poor people from whom it is impossible for us to gain an income at all commensurate with our hard work and grave responsibilities, let alone make provision for old age, hence a retaining fee is needed to get us to reside in the parish. This retaining fee is simply a small salary given for attending and supplying medicines to paupers, fixed upon by a narrow-minded parish council

sanctioned by the Local Government Board, totally ignorant of the merits of the case and the onerous duties we have to undertake. Such salaries are the lowest possible sums of money offered to get a medical man to reside in the parish and out of all proportion to our parochial duties. This may seem strong language, but the time has surely come when reformation is needed in the relations existing between Poor-law medical officers, parish councils, and the Local Government Board. Improvement in our condition will only come to us by persistent, honest, and powerful combination among ourselves to a man, and I still have such belief in the profession generally that it will back us up. I know that several if not all the eminent men of our profession who have influence at headquarters will support our cause and work for us. I have been told that our parochial salaries are sufficient for attending the paupers. I say that the salaries given are nothing of the kind in order to allow us to do justice to them without being out of pocket. These poor wretches are scattered all over the parish, in many cases at great distances from our residence, and it is impossible for us to give them the medical attention they ought to receive without an enormous expenditure of time spent in travelling. Further, what about the number of poor people bordering on pauperism, often residing at long distances from us, whom we are obliged to visit and supply with medicines and never receive a penny for our services? The parish councils will not pay us, yet they require us to visit the different districts periodically so that poor people may have the advantage of our services on the cheapest possible scale. This is part of our work as the parish servant, yet our salary is only for attendance on paupers. This extra work we are compelled by common humanity to undertake, yet we never receive a penny extra from the funds of the parish. We are bound to become philanthropists and cannot help ourselves. I would here emphasise the distinction between being practically forced to give our services for nothing in very many cases and doing the same at our own discretion. When much sickness is prevalent our consulting-rooms become general dispensaries.

If we require an assistant in an operation on a pauper we have to pay him out of our own pockets. Is such a condition of things fair to us? Parish councils have no right to expect us to be Dr. MacLures. My contention is this—if the Local Government Board insist that these poor parishes have the luxury of a resident medical officer (ostensibly to attend paupers, of course) they should also insist that he is paid a sufficiently remunerative salary for his hard work and valuable services. It is absurd to expect that parish councils will take notice of the above facts if they can possibly evade them. Parish councils can easily afford to double or treble their contributions to our salaries (in many cases only about 10*s.* 6*d.* a week), and the Government could do the same, thus making the pay somewhat consonant with the work done. At present our position is that of a parish slave bound to attend all and sundry in all weathers, night and day, whether we are paid or not.

Again, we are absolutely at the mercy of these parish councils, frequently composed of local men, partially educated, and without that breadth of mind desirable in a body having power over men educated and brought up in a different sphere to themselves. They can turn us away without assigning a reason and the Local Government Board, bound hand and foot by red tape, tell us they cannot help us unless an Act of Parliament is altered. The sooner such one-sided Acts of Parliament are altered the better. I would ask that the Local Government Board have absolute control over us as to salaries, holidays, tenure of office, and payment for extra services. Were our position thus recognised and protected by Government it would give us a standing in the eyes of the public and an independence we cannot now enjoy. Further, we are expected and would really need to be *au fait* with every branch of our profession and keep ourselves supplied with up-to-date instruments which may never be needed for years. Yet how can we do so out of the slender hand-to-mouth incomes we are able to derive from these poor out-of-the-way parishes? We cannot attend post-graduate lectures, visit hospitals, study in anatomical museums, take in medical literature, and generally keep ourselves up to date like our brothers in the south. All these advantages are denied us on account of our isolated position, and we get rustier day by day and year by year. A minimum annual holiday of a month or six weeks would materially strengthen us professionally, physically, and mentally, and, in the words of the Local Government Board, "it would be to the advantage of the public" whom we serve.

We cannot meet to discuss what combined action may be taken, so I would request all parish medical officers who approve of my statements and have suggestions to offer to communicate with me. My proposal is to draw up a petition signed by every Poor-law medical officer in the Highlands and islands, have it printed, and copies sent to the Local Government Board, the General Medical Council, all the branches of the British Medical Association, every Cabinet Minister, and those Members of Parliament who are likely to support our claims, and I feel sure of a mitigation of our present condition, if not absolute success in our appeal. I feel I have only touched the fringe of the question in a very imperfect way, yet if I have aroused my colleagues to agitate in a business-like manner for better conditions all round I shall feel satisfied in the meantime.

I am, Sirs, yours faithfully,

HENRY PEARSON TAYLOR, M.B., C.M. Aberd.

Reafirth, Mid Yell, Shetland, Sept. 16th, 1900.

## "THE PRESENT POSITION OF PATHOLOGY IN ENGLAND."

*To the Editors of* THE LANCET.

SIRS,—I have read with great interest the letters by Dr. Powell White and Dr. F. Bushnell on the above subject which have recently appeared in THE LANCET and can cordially endorse all that they say. Pathology seems still to be regarded by many as a subject of merely scholastic importance, and practical pathology as an aid in diagnosis as work to be undertaken with confidence by anyone who can stain a section and look down a microscope; experience and thought are not required. The remuneration offered, therefore, is merely that of a mechanic. With regard to the work done by research societies in pathology I have come to the conclusion, after considerable experience, that the fee charged is in many cases not in excess of the value of the opinion given but rather the reverse.

I am, Sirs, yours faithfully,

York, Sept. 24th, 1900. P. J. CAMMIDGE.

## "PROFESSIONAL ORGANISATIONS."

*To the Editors of* THE LANCET.

SIRS,—"Magna est veritas" is my apology for this, positively my final, contribution on the subject of "Professional Organisations." It is absolutely untrue that I refuse to waive the fee in consultations with institute surgeons. The letters forwarded by Mr. Wyllys state, in language lucid enough for an infant school, my consent to any pecuniary conditions the committee think fit to impose, and my rejected resolution ignores fees altogether.

To Mr. Wyllys's question let me reply that never having been honoured with one-fifth of the club practice formerly enjoyed by him my feelings of reprobation are proportionately less acute. If the institute medical officers—after the lapse of years—still merit the reprobation on which Mr. Wyllys is so keen I would suggest that, at any rate, reprobation should fall short of vindictiveness. Moreover, it is impossible to injure the institute surgeon without at the same time injuring the institute patient by interposing obstacles to the quest for assistance until, maybe, it is too late.

Kindly permit me to quote a few words, facts, and inferences.

*Words.*—Mr. Wyllys states: 1. "In any really urgent case we are individually prepared to meet them (i.e., the institute doctors) when called upon to do so." 2. "We are, and always have been, prepared to give immediate help if called upon to the institute surgeon in cases of grave and sudden emergency."

*Facts.*—1. If the pleonasm "really" is omitted from Mr. Wyllys's first statement it is synonymous with my own proposition, yet the proposition is rejected. 2. No records exist of either of the statements being acted upon. 3. There is no denial that help from an institute surgeon has been accepted.

*Inferences.*—1. Cases of "real" urgency or "sudden and grave emergency" do not happen among institute patients. 2. If the latter have only ordinary chronic diseases, such as Bright's disease or diabetes, bronchitis or fibroid phthisis, they are not eligible for consultation while attended by the

institute surgeon. And this is common humanity. 3. Mr. Wyllys's statements are satisfactory as evidences of an awakening conscience.

It was very kind of Mr. Wyllys to postpone boycotting me yet a little longer. I am irresistibly reminded of the "Jackdaw of Rheims"—

> "Never was heard such a terrible curse.
> But what gave rise
> To no little surprise,
> Nobody seemed one penny the worse."

I will only add, Sirs, that when the wise medicine men of Yarmouth—mustering at an annual meeting six all told—have their sapient laws checked by a central authoritative body, then, and not till then, will I submit my sense of what is right and what is wrong to their infallible jurisdiction.

I am, Sirs, yours faithfully,

Great Yarmouth, Sept. 23rd, 1900. JAMES RYLEY, M.D. Lond.

## THE DETECTION OF LACTIC ACID.

*To the Editors of* THE LANCET.

SIRS,—I have read with much interest Dr. Shufflebotham's valuable contribution on "The Chemical Examination of Gastric Contents" in THE LANCET of Sept. 15th, and being interested more in the chemistry than the pathology of the question I beg to offer a remark on one point which seems to me to be not quite clearly expressed. I refer to the description of the application of Uffelmann's test for lactic acid, and in view of the great importance of this test as an aid in diagnosis Dr. Shufflebotham will pardon me for drawing attention to the passage. The test is thus described. Uffelmann's reagent "consists of 10 cubic centimetres of a 5 per cent. carbolic acid solution and 20 cubic centimetres of distilled water. To this is added one or two drops of solution of perchloride of iron and an amethyst blue colouration is obtained. The solution should be prepared fresh each time as it does not keep. In the presence of lactic acid the blue colouration is changed to yellow. ..... Hydrochloric acid has no effect on this reagent." This last statement is the point to which I take exception and which if not corrected may be the means of vitiating the results obtained by the application of the test. The purple blue colouration produced by the action of ferric chloride on phenol is familiar to every chemist, and it is equally well known that the colouration is only produced in neutral or slightly alkaline solutions. It is not developed if there is the slightest excess of acid, and when developed in a neutral solution it is entirely discharged by the addition of acid. So far, therefore, from hydrochloric acid having "no effect" the very reverse is the case, as the reagent is useless in the presence of free hydrochloric acid. It may be replied that the reference is restricted to the use of the reagent in testing gastric contents in which the percentage of free hydrochloric acid is usually very small, and while it is quite within the bounds of possibility that the proportion of free acid may be so minute as not appreciably to effect the result it is not safe to trust to this being the case without careful experimental evidence. Taking the percentages of lactic acid and hydrochloric acid found in a number of the cases quoted by Dr. Shufflebotham—namely, 0·05 per cent. and 0·02 per cent. respectively—I find that while a solution containing the former strength, 0·05 per cent. lactic acid, gives with the reagent a brilliant yellow colouration, the colour is scarcely perceptible in a solution containing 0·05 per cent. lactic acid and 0·2 per cent. hydrochloric acid, and quite imperceptible if the proportion of hydrochloric acid be very slightly increased or that of the lactic acid decreased. From these facts it is obvious that the test cannot be relied on when applied simply by adding the reagent to the gastric contents filtrate unless it has been previously ascertained by the phloroglucin test that free hydrochloric acid is entirely absent, a condition which rarely, if ever, occurs. The proper course to follow is to separate the organic acid by Berthelot's ether process, as described by Dr. Shufflebotham, and then to apply the test.

In place of Uffelmann's reagent I recommend one that is quite as satisfactory and much more convenient for use. It is prepared by dissolving four grains of sulphocarbolate of zinc and two grains of ferric chloride in half an ounce of distilled water. The colour is not blue, as with carbolic acid, but dark ruby, and the reaction is exceedingly delicate, so much so that 1 part of lactic acid in 100,000 can quite readily be detected by using a full six-inch test-tube and looking down through it on a white surface. The advantage of this reagent is the convenience with which it can be prepared and the certainty that it will never vary in depth of colour. I would suggest that medical men would find it particularly handy to have the reagent in tablet form. Using perfectly dry ferric chloride the two salts can quite well be mixed and if preserved from moisture there is no reason why a compound tablet so prepared should not keep indefinitely. I am, Sirs, yours faithfully,

Glasgow, Sept. 24th, 1900. THOMAS MABEN, F.C.S.

## "THE TREATMENT OF ACUTE ALCOHOLISM BY LARGE DOSES OF DIGITALIS."

*To the Editors of* THE LANCET.

SIRS,—With reference to the above I would like to point out that in Nelligan's Materia Medica and Therapeutics, edited by Macnamara, 1868 (Dublin), will be found, under the heading of Digitalis, that Jones of Jersey gave large doses of the tincture to his patients who were suffering from delirium tremens with very beneficial results. I believe the first heroic doses were given quite in error through the dispenser mistaking half-drachm for half-ounce doses, so it will be seen that the treatment is by no means of recent origin. I am, Sirs, yours faithfully,

EDWARD C. CLANCHY.

Battersea-park-road, S.W., Sept. 24th, 1900.

## "THE PREVENTION OF DISEASE IN THE FIELD."

*To the Editors of* THE LANCET.

SIRS,—May I briefly reply to some difficulties you have suggested to my proposition that on active service all water used for drinking purposes should be boiled or filtered?

1. You "would urge Dr. Canney to put forward his proposals for the consideration of those more immediately concerned with the question which he has taken up." I cannot help thinking that those most "immediately concerned" are not the War Office but the whole public who are watching their relatives through this anxious struggle. If the public make it a *sine quâ non* that no general can come back with credit from a campaign with a heavy list of casualties from preventable diseases all "difficulties" in the way of prevention will rapidly fade away. Men do not mind facing fair war, but for thousands to have to go through (and too often, alas, not get through) typhoid fever and dysentery—both preventable filth diseases—with scant attention and nursing and often terrible feeding is too cruel to be tolerated. Seeing that men have had to drink infected water almost everywhere in South Africa it would appear that if there are any others more "immediately concerned" in protecting the army from destruction they must have encountered obstacles and difficulties at the hands of other War Office departments, such as you probably refer to as the "practical difficulties in the way of it being carried out."

2. Flies and dust as carriers of typhoid bacilli. I think very few bacteriologists would uphold the latter agency. Both agencies would require to find the bacilli first before they could carry them. My proposition was to keep the army free from typhoid fever (and largely from dysentery) from the first day of landing. There would then be no dejecta from which the bacilli could be obtained (any suspicious case being treated as typhoid fever, as regards dejecta, antiseptically). Seeing that every man probably in South Africa has been exposed to infected water or utensils it seems unnecessary to assume "dust and flies" without absolute proof. This theory would militate against any proposed plan for abolishing typhoid fever and dysentery as mainly water-borne diseases.

3. "*It has not been the experience of medical officers in India and elsewhere that immunity from disease can be guaranteed by the use of boiled water or of filters.*" This would be a most serious objection if the medical officers had shown at the same time that no other water had been used in the bazaars or elsewhere outside the barracks, that all milk had been boiled, that utensils had not been washed in infected water, and that the toilet water and water used for salads, &c., had been boiled. If any of these things had been left undone no weight would be attached in this country by any bacteriologist to the Indian medical officer's statement.

4. Thirst. The extra half hour (with present machines) is doubtless a difficulty. The occasions would be very rare with a smart "water corps," as smart as the Royal Artillery, that the men would not with education wait the time. Further, a smart "water corps" could perhaps obviate a man arriving in the desperately thirsty condition. Wilful disobedience could be met in other ways.

5. Transport. I have shown that 500 mules would have carried the boiling machines (one per 100 men) and fuel (petroleum) for 10 days, sufficient to boil four pints per man per day for the whole of Lord Roberts's army of 50,000 men moving from the Modder to Bloemfontein. If the mules had been killed *en route* the position would not have been worse than without the attempt; if, on the other hand, the "water corps" had got them along safely there would have been practically no suffering, from 15,000 to 20,000 less to treat at Bloemfontein and Kronstad for weary months under heartrending difficulties. In this scheme I have suggested as transport pack mules, thus disposing of "single lines of railways," roads, and other "difficulties." From the outset the transport of a "water corps" would be sacred. No general could touch it for any purpose whatsoever. It is obvious that no general or transport officer will accept the additional transports with pleasure, but if there is no better scheme in the field there must be no escape.

6. With regard to the difficulty of knowing when the water may be contaminated I have assumed that all water in war is contaminated as the only safe hypothesis.

I am, Sirs, yours faithfully,

Sept. 24th. LEIGH CANNEY.

## RHEUMATISM AND TONSILLITIS.

*To the Editors of* THE LANCET.

SIRS,—I trust you will permit, and that Dr. Poynton and Dr. Paine will pardon, my claim—quoting the opinion of another—to be "the first to emphasise the etiological, semeiological, and therapeutic analogy between tonsillar inflammations and the arthritic diathesis." My views on the close relations of rheumatism and tonsillitis are recorded in the first edition of my work "The Throat and its Diseases," published in May, 1878, and treatment of tonsillitis by salicylate of soda—then a new remedy—was first recommended. At the meeting of the British Medical Association at Leeds in 1889 Dr. Archibald Garrod, while conceding me British priority amongst the "moderns," mentioned Stoll (1777) as the first writer to speak of rheumatic angina, but on that occasion I was able to cite still earlier authors—viz.: Sauvage (1771), Balls (1762), and Musgrave (1710). I also on the same occasion quoted from a letter I had received from Sir Andrew Clark in which he said: "If one will think merely of the rapidity with which the tonsil manufactures and discharges lymph cells it will not be difficult to see how a sudden suppression of this process, the accumulation of effete matters in the crypts, and the filling of the lymph spaces with products of bacteria life, and with matters undergoing evolution, may contaminate the blood and originate the troubles considered as rheumatic." I was at once ready to accept this interpretation which at that time represented a decidedly advanced view. Since that date this contamination of the system, or blood-poisoning, has been acknowledged to be of microbic origin by several observers. In the fifth edition of my book the subject of tonsillitis has been treated from the bacteriological point of view, and I have tabulated the micro-organisms found in 100 cases of tonsillitis by our hospital bacteriologist, Mr. St. George Reid.

Without going into detail it may be stated that various forms of staphylococcus, either alone or associated with other organisms, were found in 62 cases, streptococcus in 58 cases, and diplococcus in 32 cases. With respect to this last named organism I have pointed out in my monograph on "Diphtheria and its Associates" (p. 48) that diphtherial "throats in which diplococci are predominant are 'dirty' in character and the pseudo-membrane slow to clear away."

In the article under consideration it is mentioned that a diplococcus found in acute rheumatism has a disposition to grow in culture as a streptococcus, and in most of the photo-micrographic illustrations of diplococci in my book the organism is associated with streptococci. In one case (No. 22, p. 131) which presented certain aspects of diphtheria, but which was really one of acute lacunar tonsillitis, the diplococcus was found in almost pure culture. Of course, I make no claim to originality in these observations, and, indeed, I have endeavoured to give full credit to other workers, continental, British, and transatlantic, in the same field. I only now draw attention to them as in some sense confirmatory of the much more elaborate and complete investigations of Dr. Poynton and Dr. Paine.

I am, Sirs, yours faithfully,

Mansfield-street, W., Sept. 24th, 1900. LENNOX BROWNE.

## "POISONING BY CARBON MONOXIDE."

*To the Editors of* THE LANCET.

SIRS,—Some years ago I used to see an "ironer" who was the subject of attacks of vertigo, headache, and visual hallucinations when she awoke in the morning, but no amnesia or sickness. She was always worse after "glossing" and during drying. She stated that many other women in the trade suffered from headache, &c., but that they usually attributed it to the "heat." May I add one or two other references to those given by Dr. Elgood in his very interesting paper in THE LANCET of Sept. 15th (p. 805)? Ruata[1] recorded a case of active delirium lasting for five days after exposure to the fumes of a coke stove in a close room. Voss[2] reported an instance of poisoning of five in a family with two fatal results. One of the fatal cases had well-marked convulsions and tetany-form spasms. Régis[3] points out that in the acute forms of poisoning a very prominent symptom is retrograde amnesia. He has also observed rapid and incurable dementia follow in prolonged chronic or professional toxæmia in ironers, whose previous symptoms included vertigo, mental obtusion, hallucinations, and even delirious conceptions.

I am, Sirs, yours faithfully,

Sept. 24th. J. CHRISTIAN SIMPSON, M.D. Edin.

## "LODGE PRACTICE IN BRITISH COLUMBIA."

*To the Editors of* THE LANCET.

SIRS,—Your Canada correspondent in THE LANCET of Sept. 22nd (p. 911) falls into an error when he says that "not a single medical man throughout the Dominion of Canada made any response whatever to this appeal." No one is allowed to practise in British Columbia whatever qualifications he may possess until he passes an examination in anatomy, chemistry, physiology, pathology, materia medica, medical jurisprudence, theory and practice of medicine, surgery, clinical medicine, clinical surgery, obstetrics and diseases of women and children, in addition to paying $100. The same applies to Ontario and Manitoba. With a British qualification one can practise in the North-west Territories on payment of $50. Hoping this may be of service to anyone going out to settle in Canada,

I remain, Sirs, yours faithfully,

PIERS J. HATTON, M.B., C.M. Edin., &c.

Manchester-street, W., Sept. 24th, 1900.

## THE GENERAL ELECTION AND THE MEDICAL ACTS.

*To the Editors of* THE LANCET.

SIRS,—The Accrington and District Medical Society have taken the opportunity given by the General Election to send a deputation to both the candidates before the constituency asking them to pledge themselves to support any amendment of the Medical Acts which may be brought forward by the General Medical Council or the British Medical Association, especially with a view to registration being the sole right to practise medicine, surgery, or any of their branches. The society further suggests that the medical societies in every electoral district should immediately take similar steps.

I am, Sirs, yours faithfully,

ELWIN H. T. NASH, M.R.C.S. Eng., L.R.C.P. Lond.,

Accrington, Sept. 26th, 1900. Honorary Secretary.

*** A telegram received as we go to press states: "Both candidates absolutely agree with proposals of deputation."—ED. L.

[1] Gazzetta Medica di Torino, No. 24, 1892.
[2] Deutsche Medicinische Wochenschrift, Oct. 6th, 1892.
[3] Practical Manual of Mental Medicine.

## THE FIELD SERVICE MANUAL, ROYAL ARMY MEDICAL CORPS.

*To the Editors of* THE LANCET.

SIRS,—There is the greatest possible need of a really good "Field Service Manual" for the Royal Army Medical Corps. The present little pamphlet is a thoroughly bad book and of no use for its purpose. The French army have a field service book of regulations of considerable size, well illustrated, and a complete help to all concerned; our booklet is valueless and unworthy of the army. The Indian Army Field Service Manual is a practical and useful book. I wish ours was even one quarter as good. Unfortunately it is not. I am, Sirs, yours faithfully,

Sept. 24th. RE-MODEL A USELESS BOOK.

## NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

*The Increase of the Plague Epidemic but the Decline of Famine and Cholera.—The Anti-typhoid Inoculations in India Last Year; Favourable Results.—A New Theory for Beri-beri.*

THE deaths from plague throughout India are still mounting up. For last week the number was 691—an increase of 62 on the previous seven days. In the middle of July it was only 198, so the development has been somewhat rapid. The recent increase is chiefly in the Mysore State and in the Bombay districts. Mysore city shows a sharp attack and Poona once again shows a serious increase of the disease. During the past month 141 deaths have occurred in the latter city—the increase being especially marked during the past fortnight. It will be remembered that it was at this season that the terrible outbreak occurred last year. The authorities have issued a notice for certain of the inhabitants to vacate their houses within four days and stay in the health camp. Dead rats have been found lately in many places. The new regulations are being tried. Affected places are disinfected, but segregation has been done away with and there is no compulsory inspection. In Bombay and Calcutta the amount of plague continues about the same, Calcutta reporting 85 deaths and Bombay city 49. The figures for Calcutta include "suspected" deaths. The general mortality in Bombay city is decreasing and for last week 1224 deaths were reported. As, however, the cholera and plague returns only account for 234 deaths and the average mortality is under 600 there is still a balance of about 400 deaths unexplained. The death-rate is over 77 per 1000 per annum. Famine and cholera are fortunately on the decrease. The last famine figures show less than 5,000,000 under relief, but there are still no less than 3,054,000 under gratuitous relief. Cholera is decreasing nearly everywhere.

With reference to the anti-typhoid inoculations in India last year the *Indian Medical Gazette* publishes some important figures. There were 1312 cases of typhoid fever amongst the British troops with 348 deaths, a death-rate of over 25 per cent. The ratio of admissions to total strength was 20·6 per 1000. There were 4502 inoculations, and amongst these men there were only nine deaths from typhoid fever. This gives 0·2 per cent. of strength. There were 44 admissions, giving 0·98 per cent. of strength. Amongst the non-inoculated in the same corps and at the same stations, of 25,851 men there were 657 cases and 146 deaths, giving the relative percentages of admissions and deaths as 2·54 and 0·56. This is strongly in favour of inoculation. I do not quite understand, however, why the admission-rate among the non-inoculated should be 2·54 per cent., whereas the ratio of total admissions to total strength of British troops was only 2·06 per cent. It is at least satisfactory to see so great a benefit, more especially when it is concurrent with a fall in the admission-rate for enteric fever in 1899 from 36 in 1898 to 20 per 1000 in 1899. The above figures are for the whole year and include a much larger number of men inoculated than were referred to in Professor Wright's recent article.

A theory has recently been put forward that beri-beri is due to the consumption of mouldy rice. This, of course, is not the first time that the disease has been connected with some kind of food. Its rapid disappearance from the Japanese Navy may have been due to better dietary, but, on the other hand, mere absence of nitrogenous food does not produce any condition approaching this disease. The chief argument against the mouldy rice theory is that the disease is known to have broken out amongst communities in which the food was generous and varied and in which rice formed but a very small proportion of the diet. Moreover, fungoid growths do not withstand the heat necessary for cooking rice.

Sept. 6th.

## THE TENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

(FROM OUR SPECIAL CORRESPONDENT.)

### THE WORK OF THE SECTIONS—(*Conclusion*).

#### THE BACTERIAL TREATMENT OF SEWAGE.

ON the last morning of the Congress, Friday, August 17th, the interest in the Third Section, which was beginning to flag, was vigorously revived by Mr. S. H. ADAMS of York. He gave a brief summary of his report on the bacterial treatment of sewage, but he had provided himself with a lantern and showed photographs on the screen of the various types of bacteria beds employed in England. Dealing first with the experiments made by Mr. Dibdin upon the one-acre filter at Barking, he explained that it lost its capacity and was gradually choked up when worked continuously. On the other hand, when worked intermittently it retained its purifying capacities. He then instanced the Sutton beds as an example of double treatment and the Hampton beds as an example of triple treatment. The automatic apparatus designed by himself for working such filtering-beds was shown with views of the sludge in movement and when quiescent. Views somewhat more pleasing in appearance of the Exeter works were also thrown upon the screen. As an example of the continuous system on a large scale mention was made of the filters installed at Salford by Mr. Corbett. The sewage is here discharged from suitably-arranged pipes in a fine spray over the entire surface. The use of coupled syphons for flooding a filtering area was explained, as was also the operation of Colonel Ducat's interesting aërating filters at Hendon. Finally, and in support of the statement that the removal of sludge by biological means was not the least important feature of the system, some English sludge lagoons were shown. Paragraphs quoted from Dr. Rideal's work were read in support of the conclusion drawn by the speaker to the effect that biological processes aid by destroying, and not by increasing, the vitality of dangerous organisms present in sewage.

The section expressed its thanks to Mr. Adams for the trouble which he had taken in bringing forward all this important information, but no discussion ensued.

#### THE ORIENTATION OF HOSPITAL PAVILIONS.

The section now relapsed into the question of the sun's rays.

Professor SORJANI read a paper on the Orientation of the Pavilions of Hospitals so that they should receive the maximum of direct rays from the sun. Dealing with the mean European climate, Professor Sorjani drew the plan of the pavilion, which he enclosed in a circle. He then divided the circle into 24 hours. Outside the circle he drew a line from 9 o'clock to 15 o'clock. This represented the minimum amount of sunshine, the rays from this line alone reaching the building. Then he drew another line from 6 o'clock to 18 o'clock, which represented the mean sunshine, and from 4 o'clock to 20 o'clock, which gave the maximum amount of sunshine possible. As 24 o'clock was the north and 12 o'clock the south the plan inside this circle showed what portions of the building would receive the direct rays from the sun, and he concluded that it would be best to build from east to west.

Dr. PUTZEYS, delegate of the Belgian Government, pointed out that in many European countries the question of the prevailing wind and rain was as important as that of the rays of the sun. In western Europe, most of the rain and wind came from the south-west; therefore the small side or end of the pavilions should be to the south-west and the north-east. The longer walls would thus escape being continually soaked by the rain and it was worth sacrificing

some sunshine for the sake of dryness; otherwise it would be necessary to have double walls.

M. EMILE TRÉLAT urged that though people sometimes objected to the sun darting its rays into the interior of their rooms too much sunshine could not be obtained. This raised a practical question, for it was of no use to strive to build rooms and elevate windows so that the sun might reach the farthermost wall if directly the sun shone the blind was pulled down. Yet, if this were not done what would become of the colour of the carpets, the furniture, the wall-paper, and all decorations generally? The purification of rooms throughout the summer by the admission of the direct rays of sunlight would entail a complete revolution in the decoration and furnishing of our homes. This was a practical domestic difficulty which the hygienists in their eagerness for pure sunlight entirely overlooked.

### THE WAR AGAINST TUBERCULOSIS.

From the Third Section I went to the Seventh Section, where I found that Professor CORFIELD had been speaking on the Reduction of Phthisis in England and Wales. Tables to this effect, which he had exhibited, were still suspended to the wall of the amphitheatre. These showed that whereas the annual deaths from phthisis amounted to the average of 2475 from 1861 to 1871 they were only 1464 from 1891 to 1895 and 1321 from 1896 to 1898. Dr. E. MALVEZ, director of the Bacteriological Institute at Liège in Belgium had read a report on the prophylaxis of tuberculosis. The frequency of this disease among the poorer and labouring classes made it as much a social and economical as a medical problem. When all sections of society possessed the means to live in comfort under good sanitary conditions there would be little or no tuberculosis. Combating the disease in its earliest stages with good hygiene and plenty of food the wealthy succeeded in checking it, but the poorer classes were even refused admission to most of the hospitals. With the establishment in Germany of compulsory insurance the great cost of sick allowances to phthisical patients suggested the necessity of doing something to check this disease. Thus there were now sanatoria where patients were sent at the earliest stage of the malady. Here they were not only treated but taught, so that when they returned home they might know what laws of hygiene they should observe. But in Switzerland and Belgium, where compulsory insurance did not exist, sanatoria had also been erected. Six such institutions existed in Switzerland and a large sanatorium would soon be ready to receive all who suffered from tuberculosis in the province of Liège. Dr. Malvez concluded with the observation that all cases should be reported at the earliest stages, that all forms of poor relief and of medical aid should combine to discover cases and bring them under treatment, and that for this purpose bacteriological laboratories should be established in all directions.

### PILGRIMS AND THE PLAGUE.

From tuberculosis the section passed to yellow fever and to plague. On this latter subject Dr. SANTOLIGUIDO and Dr. STEKOULIS, of Constantinople, with others, agreed that another official international conference should be convoked to deal with the question of the plague. The conference which met at Venice was held before the plague had appeared in the Red Sea, Egypt, Smyrna, Beyrouth, and Oporto. Though these were not serious epidemics, they supplied some practical information of a nature calculated to modify the conclusions of the Venice Conference. Besides, Dr. Stekoulis urged, this conference left several questions open and nothing was decided as to the disinfection of merchandise. With regard to the pilgrims proceeding to Mecca, Dr. Stekoulis explained that the Turkish Government had applied the rules as to measurements on board the pilgrims' ships recommended at the Venice Conference, and since then there had been no cases of overcrowding reported such as used formerly to prevail. Nevertheless, these rules were not enforced by any penal enactment, and therefore another conference was necessary so that failure to observe the rules might be rendered a penal offence. Then there had been the question of the quarantine station of Camaran, which at first was in anything but a satisfactory condition. Consequently at the Seventh International Congress of Hygiene held in London in 1891 Dr. Stekoulis brought forward a resolution condemning the insanitary condition of the island of Camaran. This was communicated some time afterwards to Lord Salisbury and Lord Salisbury suggested to the British Ambassador at Constantinople that he should request the International Council of Health to devote the necessary funds for the building of a proper quarantine station at Camaran. The request thus made by the British Government was accepted by the representatives of the other governments, and with the sanction of the Ottoman Government and under the auspices of His Majesty the Sultan the lazaret has been completely rebuilt. Dr. Stekoulis submitted the plan to the section showing the various buildings erected according to the designs of the French engineer, M. Roullet. Distilled water was provided for the use of the pilgrims and ice was manufactured. The dormitories were well ventilated and drained, and since these works were completed dysentery, which was formerly endemic, had disappeared. Dr. Stekoulis thought that this happy result was one of the clearest cases tending to prove the practical utility of holding international congresses of hygiene. In regard to the suggestion that had been made to forbid the pilgrimages when there was danger of plague, though the French and Russian Governments might favour such a proposal the Governments of Great Britain, Holland, and Turkey could not do so on account of the great number of their subjects who were Mahomedans. The section agreed with this view. Finally, Dr. Stekoulis related that the anti-plague serum had been used at Smyrna. 17 people were inoculated, but treatment was only carried out methodically with three patients. The result was a fall in the temperature, a decrease in the nervous symptoms, and though their lives seemed in considerable danger all three patients recovered. All the members of the hospital staff were likewise inoculated and no one contracted the disease.

The section unanimously carried a resolution requesting the French Government to take the initiative in convoking another International Conference on Plague.

Dr. NOTAL of Japan, who spoke in German, described six cases of plague occurring in Japan which were traced to three persons who had bought goods and had had dealings with one and the same ship.

Dr. PUTZEYS of Belgium said that there should be sanitary police to carry out the stipulations of the international conventions. But when the police, the consuls, the merchants, and commercial men knew nothing about these conventions what could be expected? The Belgian Government in the face of this difficulty had caused a curriculum to be drawn up for the education on these points of the police, the consuls, and the merchants.

### THE COMPULSORY NOTIFICATION OF SYPHILIS.

The Seventh Section then discussed the report of Dr. H. BOURGES, chief of the Hygiene Laboratory at the Paris faculty, on the various measures taken to prevent the spread of syphilis. The obligation to notify such cases was not usually imposed. The Norwegian law of 1860 stated that medical practitioners must report the number of cases they treat, without, however, giving either names or addresses, so that the information would be useful only for statistical purposes. It was in Denmark that the principle of notification was really applied. Here not only had the medical practitioner to notify all cases of syphilis, but the patients could be forcibly detained in hospitals and submitted to subsequent surveillance. The result was that the average prevalence of syphilis in the Danish army during the years 1889 to 1893 was 2·66 per 1000, whereas in all the other continental armies it exceeded 5 per 1000. In Norway the medical practitioner had to give the name and address of the person who had contaminated his patient to the authorities, but it was very rare that the address was known. French soldiers were also told to denounce the women, but according to Dr. Carry and Dr. Jeard of Lyons the results were not very important. Out of 10 women denounced in a licensed house only one was diseased and only one out of 32 inscribed women who lived in private houses, but out of 100 clandestine prostitutes who were denounced 30 were suffering from syphilis.

### THE MEDICAL EXAMINATION OF WOMEN.

In Finland, and even in Norway, when a denunciation had been made the compulsory examination of men was sanctioned. As a rule it was only practised in large agglomerations—barracks, mills, factories, &c. But the Danish law said: "When a case of venereal disease is of such a nature as to justify the fear that it may reappear with contagious characteristics, the doctor who has attended the patient may order him to present himself at a certain ulterior date or to bring a certificate from some other doctor stating that the symptoms of the malady

have not reappeared." Certain countries had preserved old rules that should be abrogated. Thus in Germany the law authorised the immediate discharge, and without compensation, of servants, workmen, and others who were suffering from venereal disease. The factory laws of Russia authorised the employer to break his contract with any workman suffering from this disease. Of course, this was most disastrous in its effects, for in practice it meant that the presence of the disease would be concealed, and therefore it was much more likely to be propagated. Some towns in the United States and cantons of Switzerland had sought to avoid the whole difficulty by abolishing prostitution altogether. About 50 years ago this system was adopted at Munich, but it was not a success, for the prevalence of syphilis among men was tripled in the course of a few years. Therefore prostitutes were allowed to return to Munich, and now most States had abandoned all idea of suppression and resorted to measures of regulation and control. As a rule, however, the details were left to the local police and were not defined by any State laws. The consequence was that there was a total lack of uniformity with very varying results. In Paris, for instance, the women in licensed houses were examined every week and those who lived in private houses only once a fortnight. It was difficult to understand why this difference should be made. On the other hand, at Copenhagen the women were examined twice a week under penalty, if they neglected to present themselves, of four days' imprisonment and of 24 days' hard labour if, having failed to present themselves for examination, it was found that they had contracted a venereal disease. At Lyons women who had been treated and cured were examined twice a week for fear relapses should occur, and in Roumania the names of women who had been diseased were entered on a special register and the women themselves were kept under very close observation. In some parts of Germany, at Frankfort, and at Posen in the Duchy of Anhalt, women who were not prostitutes were examined, such as waitresses in hotels, beer-gardens, &c. Thus there were the extremes from no examination at all to the examination of domestic servants and others, though some of them led quite virtuous lives. According to the statute laws the segregation of women who were diseased was only justifiable in Denmark, Norway, and Roumania, but it was practised wherever prostitution was controlled. In Russia, however, there were not hospitals enough to contain all the women who were diseased. As a rule the treatment was gratuitous.

### THE PROPHYLAXIS OF SYPHILIS.

The most interesting part of Dr. Bourges's report was that which dealt with the prophylactic measures which should be taken. In this both the report and the general tone of the discussion which followed constituted a genuine and important manifestation in favour of the preservation of public health as the first duty. It was not a question of moralisation, but of sanitation, and therefore everything which in the name of religion or of morals tended to prevent immediate and effective treatment was denounced as opposed to the best interests of the whole community. All attempts to impose a stigma led to concealment and to more frequent contagion, therefore this was condemned. Though from the therapeutic and scientific point of view it was an advantage to unite all venereal cases in one single special hospital, from the social point of view this kept patients away and therefore gave bad results. Again, certain German hospitals were denounced because in those hospitals patients suffering from venereal disease were treated differently from the other patients, in not being allowed to receive their friends or to take exercise in the gardens. Benefit societies, sick funds, and all other organisations to provide medical aid which refused to give such aid when the patient suffered from venereal disease, or those hospitals which charged for the treatment of this disease and not for other diseases were strongly condemned. Whatever might be thought of the patient the defence of the community rendered it necessary that such patients should obtain prompt gratuitous treatment without any stigma being attached thereto. This was the only way of preventing concealment and of checking the spread of the disease. This was more particularly necessary in countries where prostitution was free from all sanitary control. Yet Dr. Drysdale had declared that throughout England there were not as many beds available for the treatment of venereal disease as in the single town of Paris. Undoubtedly syphilis was in the main propagated by prostitutes and therefore the most effective prophylactic measure was the frequent medical examination of these women. But there were also other means of propagation which, with the exception of the spread of the disease by wet nurses, had been entirely neglected. Glass-blowers and other workers who passed from mouth to mouth the same instrument, hair dressers, cooks, and other manipulators of food, were all capable of spreading syphilis to perfectly innocent persons. Moralising was of service in so far as it succeeded in persuading women to leave the ranks of prostitution, but where by imposing a moral stigma it prevented the prompt treatment of the disease it worked unspeakable mischief, and from this the innocent suffered as well as the guilty.

In the course of the discussion that followed, Dr. DROUINEAU urged that it was necessary to look upon syphilis simply as an ordinary contagious disease. To do this would imply the taking of special precautions. Why not apply the same antiseptic measures—namely, notification and isolation? Public authorities were under the same obligation to attend to this matter as to attend to the suppression of smallpox. What was justifiable in the one case was justifiable in the other. In the provinces they had abolished venereal wards; they no longer hid such patients in garrets, &c., but they sought to attract them instead of frightening them away.

Dr. LANDOUZY was energetic in his protests that the administration should not seek to moralise. Syphilis was contagious like many other diseases; it had the same etiology and needed the same medicaments and prophylaxy. Powers must be acquired to compel the patients to go to the hospital. The patients might be made to pay according to their means but in any case they must be treated and isolated. In the near future various States would probably spend enormous sums to fight tuberculosis and the same would have to be done against syphilis. The stupid idea as to a mortal sin being the cause must be extirpated.

Dr. BERTHAUD said that all agreed that the terms "secret" and "shameful" diseases must be abolished. The question had its social, economic, and police aspects as well as its medical interest. So long as the criminal instead of the sanitary police were employed a sense of shame would prevail. At the Deontological Congress it was agreed that syphilis should be treated on precisely the same footing as all other diseases. Being contagious it should not be shameful or secret.

Professor VALLIN, who presided over the section, thought that though there should be sanitary police the criminal police were also concerned; they had a right to watch prostitutes as a matter of public order and decency.

Dr. LANDOUZY, speaking again, thought that all encouragements should be given to licensed houses as these were far preferable to hidden places that could not be watched. He could not understand why a woman who spread syphilis as her daily business should be allowed to go free while a butcher who sold diseased meat was prosecuted. The woman and the meat were both offered to the public for sale and both should be inspected. They had police against bad meat, they had international conventions against the plague, but syphilis was at the door of every household and nothing was done to prevent its entering.

Dr. BOURGES, the author of the report, thought that medical education was often insufficient with regard to venereal diseases and that it should comprise a certain time spent in syphilitic wards. An Italian practitioner explained that this had been the custom in Italy for twenty-five years.

The section did not come to any definite decision. The chairman, Professor VALLIN, thought that the motions at the end of the report were too lengthy to be put to the vote. But the discussion was sufficiently emphatic in its general tone. Everything should be done to enable both men and women to seek treatment at the very first symptom. There should be no deterring influences brought to bear. Benefit societies, &c., should not refuse medical attendance and sick allowance, and the State and municipalities should provide ample accommodation for those who could not afford to pay. Prostitutes, as persons carrying on an unwholesome trade, must be examined. As for compulsory isolation this was scarcely practicable except with regard to soldiers and prostitutes.

### CONCLUSION.

This discussion brings me to the end of what I was personally able to see and hear of the Congress, and as there were eight sections much was said elsewhere of equal interest. But a full account of the Congress would fill a volume, and doubtless when the official report appears it will

prove to be a weighty tome. Perhaps, however, what I have been able to describe will suffice to show not only that these congresses are interesting and instructive in themselves, but that they do influence the legislation of many countries and do help to bring about useful reforms. As for the work of the sections which I was not able to attend—for it is not possible to be in eight different places at one and the same time—some idea may be gathered of what they did from the resolutions which they adopted and which were confirmed at the general and final meeting of the Congress. The Congress was not so numerously attended as were the previous congresses; it was therefore more compact, more easy to manage, and everything was carried out punctually according to the programme; there was no hitch, no disappointment, and the members and delegates finally separated satisfied at having accomplished a good work.

# THE CONGRESSES ON PSYCHOLOGY AT PARIS.

(FROM OUR SPECIAL CORRESPONDENT.)

### A MULTITUDE OF PSYCHIC INVESTIGATORS.

THE number of international congresses which have just been held in connexion with the Universal Exhibition at Paris and which dealt with psychic phenomena may be taken as evidence of the increasing interest this subject is awakening. Many of the best-known scientific authorities on these questions have attended either the Second Congress of Hypnotism, or the Fourth Congress of Psychology, or both, and have helped to found the newly-created International Institute of Psychology. Then there has been the International Congress on the History of Religions, which at first sight seems to be quite a different subject. But this Congress discussed the question of the miracles which all religions claim as confirming their faith. Then folk-lore was discussed with its wonderful stories of witchcraft, necromancy, &c., and evidence is being carefully collected to attempt to show that these popular delusions and superstitions might occasionally have had some foundation in the facts now scientifically demonstrated of the power of suggestion on certain hypnotic subjects. Of course, these are points still involved in much obscurity and about which doubts may very justifiably be expressed; nevertheless, it is a sign of the times that they have brought together men of science from all parts of the world who are determined to sift the evidence and by practical experiments to demonstrate what is possible. The result of these discussions and experiments would fill many volumes and I cannot attempt even to summarise what was said and done. Those who are interested must apply to the persons principally concerned, to the responsible general secretaries, and judging by the courtesy by which the French are distinguished there is no doubt but that they will receive printed information, reports, &c. Thus, for the proceedings of the International Congress on Hypnotism applications should be made to Dr. Bérillon, 14, rue Taitbout, Paris, and for those of the Congress on Psychology to Dr. Pierre Janet, 21, rue Barbet-de-Jouy, Paris. M. S. Yourievitch, Attaché of the Russian Embassy in Paris, 19, rue de l'Université, is the general secretary of the International Psychological Institute.

### SUB-CONSCIOUSNESS.

The Congress on Hypnotism was well attended. Dr. JULES VOISIN, of the Salpêtrière Hospital, presided and Professor RAYMOND from the same hospital delivered the inaugural address. Reports were read by Dr. OSKAR VOGT of Berlin and by Dr. PAUL FAREZ on the Value of Hypnotism as a Means of Psychological Investigation. The latter propounded the somewhat startling theory that man was not composed of one but of several individualities. There was a chief among them who governed, but under hypnotism this mental leader might be converted into a mere spectator, conscious or unconscious. Then the secondary individualities who were autonomous, though disciplined in hierarchical order, were able to act on their own responsibility. Thus there was, according to this theory, a psychological atomism just as undoubtedly there was a chemical atomism. These sub-conscious selves were described as veritable psychological laboratories, which received and registered impressions. These impressions, &c., ran a great risk of being entirely forgotten through being over-ridden by the dominant self or the chief in the hierarchy of the many selves that were gathered together in the one individual. By hypnotism we might, as it were, temporarily dethrone the chief and then the subordinates were free to tell what they knew. Thus memories of things long forgotten were recalled and faculties evoked which in the normal state were obliterated or rather kept in the background.—Dr. FÉLIX REGNAULT, in a report on the same subject, sought to show how hypnotic ecstasy explained the ecstasy described in the lives of saints and urged that the part played by suggestion in the action of crowds would furnish a totally different explanation to many of the most important facts of history and had more to do with the winning of battles than the strategy of generals and the weapons of the combatants.—Dr. P. JOIRE of Lille, dealing with the forensic aspect of the question, thought that the power which hypnotism gave might be exercised for evil as well as for good, yet the police records showed that such cases were very rare. On the other hand, the scientific knowledge of hypnotism could render very great service in the discovery of criminals. To hypnotise a person so as to make him confess his crimes would be equivalent to the re-establishment of examination by torture. But the victim of a crime might well be questioned under hypnotism, his memory thus being revived, and the police put on the track of the criminal. Many other questions were raised, but this brief mention of one or two among them may serve to give some idea of the Congress.—The members visited the Salpêtrière Hospital and Dr. Bérillon's clinic in the rue des Arts, where they witnessed the treatment of the patients.

### THE INTERNATIONAL PSYCHOLOGICAL INSTITUTE.

The Fourth International Congress of Psychology was very numerously attended, though both Professor Lombroso and Professor Ferri, from Italy, who had promised papers, were not able to come. The German professors, however, were in great force and read several papers. One of the most interesting features of this Congress was the contest that arose on several occasions between the materialist and spiritualist schools. The latter must not be confused with what in England is improperly called "spiritualism" instead of "spiritism." By "materialist" is meant the school that traces every mental phenomena to some condition of the physical body. The "spiritualist," on the contrary, conceives that the individual may possess some form of intelligent existence that can and does act independently of the animal body. This of course leads to the tremendous problem as to whether mind is the fruit of matter or matter the mere instrument of the mind. Consequently, if we wish to act upon the mind, must we deal with the body or can we act on both mind and body by dealing only with the mind? Then, to answer this fundamental question, have the experiments made in the domain of psychology been of any real service? It was generally felt that the scientific study of material things had progressed out of all proportion to the very slow advance of psychic research, that the whole tendency of western civilisation was to study and develop the knowledge of the material resources of nature rather than its psychic or spiritual powers and knowledge. Consequently when it was proposed to the Congress that an international society should be formed so as to establish an International Psychological Institute the suggestion was warmly supported. This institute has now been established and possesses a very influential committee, comprising, among many others, Mr. James Mark Baldwin, Professor of Psychology at the University of Princeton; Professor W. F. Barrett, F.R.S., of the Royal College of Science, Dublin; Dr. J. Milne Bramwell (London); Sir William Crookes, Professor Oliver J. Lodge, F.R.S. (Liverpool), and other English and American medical men. Nearly all the leading French authorities on this subject are members of the committee, such as Dr. Pierre Janet, Dr. Paul Joire, Dr. Bernheim Baraduc, Dr. E. Boirac, Dr. Bouchard, Dr. Duclaux (director of the Pasteur Institute at Paris), Dr. Durand-de-Gros, Dr. Liebeault of Nancy, Dr. E. Metchnikoff of the Pasteur Institute, Dr. Charles Richet, Dr. Ch. Ribot, and others. From other countries may be mentioned Professor Mendéleieff of St. Petersburg, Dr. Ochorowicz of Warsaw, Dr. F. von Schrenk-Nötzing of Munich, and Professor Flournoy of Geneva, Professor Lombroso of Turin, Dr. P. Visani Scozzi of Florence. Altogether there is here a list of men which gives good promise if instead of merely lending their names

to the institute they will also work in conjunction with one another to elucidate the problems taken in hand.

HUMAN VIBRATIONS.

To return to the Congress of Psychology, what is likely to interest the greatest number, at least of outsiders, are the material facts that can be brought forward. But before it is possible to reach a fact it is most necessary to be able to detect a fraud. In this respect Dr. Encausse, who for many years was a co-worker with Dr. Luys in the hypnotic wards of the Charité Hospital, submitted some drawings of tables, chairs, sofas, &c., which were so arranged with electric wires that they would at once reveal even in the dark any fraudulent movement on the part of a so-called medium. If such contrivances were in more general use much of the prevailing imposture would be rendered impossible. Then Dr. JOHN E. PURDON, from California, read a paper on the "Transfer of Sensori-Motor Impulses proved by the Sphygmograph." Dr. J. E. Purdon argued that Mr. John Beattie of Bristol, England, had demonstrated that "emanations from the living body which may provisionally be termed vital vibrations could and actually did under a variety of forms impress themselves" on photographic plates. Dr. Purdon, however, deemed that such action could be more readily studied upon another similar organism. For this purpose the sphygmograph was employed, and the tracing resulting from a great number of experiments showed, it was claimed, that "a forced vibration due to the dominance of a second person propagated in some unknown manner from his nervous system to that of the other person can be obtained."

Apart from the three congresses just mentioned and which are official congresses there have been other non-official congresses where notably "spiritists" have talked a good deal of nonsense and have made any number of affirmations they were absolutely unable to prove. But amid much of this sort of loose talk there have been read some thoughtful papers written by persons who have had lengthy scientific training, and it is all symptomatic of a great and widespread craving for more light on these mysterious questions. The Paris Universal Exhibition in gathering together people from all parts of the world has supplied the opportunity for rendering manifest this growing tendency, this desire to unravel past superstitions, and to bring all strange and as yet unexplained phenomena to the test of scientific investigation.

Paris, Sept. 23rd.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*Plague in Foreign Ports.*

IN view of the possibility of the introduction of plague into the port of Liverpool the medical officer of health (Dr. E. W. Hope) has issued a short memorandum drawn up by Dr. Balfour Stewart of University College showing the salient features of the disease. Dr. Hope lays stress upon the fact that cases of pneumonia of uncertain character or patients suffering from bubo without apparent cause may seek medical advice. Having regard to these circumstances he has made arrangements for the isolation in the city hospitals of such cases, and the sputum of any doubtful case of pneumonia will be examined on application to Dr. Balfour Stewart at the Thompson-Yates Laboratories, University College. The names and addresses of all persons coming from infected ports are taken on arrival in the port, and Dr. Hope is prepared to give any information in his possession as to the antecedent movements of any stranger to the town. The "memorandum" points out that plague is generally associated with enlarged lymphatic glands, but not always. In the greater proportion of cases the enlarged glands are those of the groins, both the inguinal and femoral chains of glands being involved; next in frequency come the axillary glands; those in the cervical region are rarely enlarged. It is seldom possible to find a peripheral focus of infection; when it is found it is often a mere pimple. In an early case tenderness on pressure over one or other glandular region is found before the glands enlarge. There are two types of plague—pestis minor and pestis major. In *pestis minor* or *ambulatory plague* enlarged and tender glands are found; the constitutional symptoms are malaise and slight rise of temperature. In some such cases of exceptional mildness advice would probably not be sought. In *pestis major* three forms are found: (*a*) bubonic, (*b*) pneumonic, and (*c*) septicæmic. The *bubonic* (*a*) form in which enlarged lymphatic glands occur is the most common. The buboes may vary in size from that of an almond to that of a small orange. At first a hard and enlarged gland is felt, tender on pressure. Afterwards there is generally more or less œdema of the subcutaneous tissue around the gland, and the skin pits on pressure and appears sodden and of a dull red colour. Later the bubo begins to soften in the centre and a hard ring is felt around the breaking-down mass. The patient has an anxious and dazed expression; he appears dull and stupid, as if under the influence of a drug, and later there may be delirium. The conjunctivæ are injected. The temperature varies from about 101° to 104° F. The *pneumonic* (*b*) form is generally that of broncho-pneumonia. It may follow on the bubonic form or it may be primary, in which case buboes are seldom found. It is rapidly fatal. The *septicæmic* (*c*) form has no peculiar characteristics to show that the blood-poisoning is caused by specific infection. It is also rapidly fatal. The *bubonic* (*a*) form is the only form that would be likely to be diagnosed from the symptoms and signs *per se*. A case of broncho-pneumonia where the constitutional symptoms were severe in proportion to the amount of lung trouble or a case of septicæmia which could not be accounted for would suggest the advisability of questioning the family for any other case of illness. Should plague unfortunately come to this city it would be very important to discover the first case. To this end it would help, if the possibility were borne in mind, however remote, of (1) cases with enlarged glands appearing suddenly and without apparent cause; or (2) cases of pneumonia being due to this disease. The following resolution was carried by the council of the borough of Bootle:—

That this council, as the local authority for the borough under the Infectious Diseases (Notification) Act, 1889, doth hereby order that as a case of emergency the said Act shall apply within the borough to the infectious disease known as "plague"; that the cause of such emergency be declared to be (*inter alia*) the present outbreak of bubonic plague at Glasgow and the highly infectious nature of the disease; that such order shall continue in force for three months from its coming into operation at the expiration of one week from the date of the order being advertised; and that application be made to the Local Government Board for their approval of such order.

Sept. 25th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

*Aberdeen Royal Infirmary.*

THE servants of the municipal corporation have declined to accept a suggestion that each should contribute so much regularly to this hospital and, on the contrary, have resolved to contribute nothing at all, holding that the institution should be put on the rates and managed by a popularly-selected body.

*Aberdeen Royal Asylum.*

The managers of the Aberdeen Royal Lunatic Asylum are to purchase at the price of £7750 the lands of Ashgrove, adjoining the present grounds of Elmhill.

Sept. 25th.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*The late Sir William Stokes.*

IT is a sad coincidence that on the day when the account of the funeral of the late Sir William Stokes appeared in the Dublin papers the death of his accomplished sister, Miss Margaret Stokes, was also announced. She was widely known as the author of many standard works on Irish ecclesiastical architecture. Miss Stokes devoted a lifelong study to the subject and since the death of Dr. Petrie she was recognised as the highest authority on the matter.

*The New Veterinary College for Ireland.*

The site for the new Veterinary College in Dublin—already mentioned in THE LANCET—is causing some adverse criticism of the sanitary authorities who are accused of not being sufficiently alert. Mr. Meldon, D.L., F.R.C.S. Irel., writes that the College, if permanently established in its present position, will not alone be a source of great danger to the

public health, but prove an injury to all the valuable property in its immediate neighbourhood.

*Richmond District Lunatic Asylum.*

An epidemic of typhoid fever now prevails at the Richmond Asylum. The medical superintendent reported on Sept. 20th that there were then 22 cases, 14 being among the patients of the institution and eight among the nurses.

*The Samaritan Hospital, Belfast.*

As a result of the *fête* on behalf of this hospital, which was so well organised by Miss Henderson of Norwood Tower, Belfast, and which took place on July 6th and 7th, a net sum of £325 was raised. Dr. J. St. Clair Boyd, one of the hospital surgeons, in accordance with his generous promise that he would clear off whatever remained on the debt has added £125. The Samaritan Hospital has also received a sum of £1000 from the family of the Belfast millionaire—Mr. James Craig.

*The Proposed Technical Institute in Belfast.*

The city corporation of Belfast has very wisely decided to build a new technical school in Belfast and have selected an admirable site in the centre of the city on a portion of the grounds purchased from the Royal Academical Institution. They have also appointed an efficient architect and they very prudently arranged on Sept. 24th to go a little further and to appoint at once a principal for the institute at a salary of £600 per annum, whose coöperation and experienced practical advice would be of great value in settling the interior arrangements of the building and in organising during the interval of its construction. In this way the new principal would find a place in every way suited to his wants.

*Queen's College, Belfast: the President's Report.*

From the President's report just issued I find that during the Session 1899–1900 there were 353 students at Queen's College, Belfast, but as six attended in more than one faculty there was a net number of 347. In the Faculty of Medicine there were 214 students, an increase of eight over the preceding session. References are made to the loss the College has sustained in the deaths of Dr. Cuming, Dr. Hodges, and Dr. W. N. Watts, all of whom were professors, and a former librarian, the Rev. G. Hill. A full account is given of the success of the students at the various universities. Dr. W. A. Osborne has been appointed assistant professor of physiology at University College, London; Dr. B. Moore has been selected as lecturer on physiology at Charing-cross, London; Mr. F. G. Dennan, M.A., has been appointed assistant to Professor Ramsay in University College, London; and Dr. W. Hanna, sent out by the Government to India to inquire into the nature of the plague, now occupies a high position in the Plague Laboratory at Bombay. All of these old Belfast College students held research scholarships as founded by Her Majesty's Commissioners for the 1851 Exhibition. The various College museums have been well cared for during the year, and owing to the great and most praiseworthy exertions of Dr. H. O'Neill, the Museum of Hygiene and Sanitary Science has made the greatest progress. A mechanical workshop has been opened. While in the medical school the number of departments has been exactly doubled in the last 10 years a new physical and a new biological laboratory as well as the completion of the buildings erected for the department of chemistry are much needed. The present President has already done so much to improve Queen's College during his period of office that I am sure he will manage to get all these wants supplied.

*Commission in the Royal Army Medical Corps.*

Dr. J. W. West, house physician to the Royal Victoria Hospital, Belfast, has been given the commission in the Royal Army Medical Corps which was placed by Government at the disposal of the authorities of Queen's College, Belfast.

*New Medical Local Government Board Inspector.*

Dr. E. C. Bigger of Belfast has been appointed a medical inspector under the Irish Local Government Board. The appointment has not arisen from any vacancy, but it has been decided to add a new inspector for Ulster in addition to the present one—Dr. C. J. Clibborn—the work being very onerous. Dr. Bigger's district will comprise the northern part of Ulster and his headquarters will probably be Londonderry. Dr. Bigger was senior visiting medical officer to the Belfast Union Hospital and superintendent medical officer of health of the rural portion of the union. He in former years held a dispensary medical district in Belfast. He has thus had an admirable training in the work over which he will now act as inspector. Dr. Bigger was an alderman of the Belfast City Council and a prominent member of the Public Health Committee, and at a meeting of that committee on Sept. 20th a resolution was passed congratulating him on his promotion and speaking of his fitness and high qualifications for the inspectorship.

Sept. 25th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*On Herpes in general and the rôle of Influenzal Herpes in Pneumonia and other Infectious Maladies.*

M. VIDAL of Hyères laid before the Academy of Medicine in July, 1899, some observations as to the frequency of zonal and other forms of herpes in influenza. During the latest epidemic of influenza he has been able to confirm these observations. M. Vidal has established the relation which exists between herpes, of which disease he gave a general definition, and the method of penetration of different organisms into the body. Localised groups of bacilli, according to M. Vidal, give rise to diseases of different organs which are thus laid open to attack by the secondary bacillary products, while the presence of bacilli in the blood-vessels gives rise to a general infection. M. Vidal related some experimental investigations which he considered to bear out his theory and concluded by describing the part played by herpes in influenzal pneumonia.

*The Physiological Action and Therapeutics of Compressed Air.*

At the meeting of the Academy of Sciences held on Sept. 3rd M. Mosso said that an atmosphere containing as much as 50 per cent.[1] of carbon monoxide was not fatal to mice provided that pure oxygen was also supplied at a pressure of two atmospheres. M. Mosso was able to establish the like facts with regard to larger animals such as monkeys, dogs, and rabbits. A mixture containing 6 per cent. of carbon monoxide showed no harmful effects provided that oxygen was present under a pressure of two atmospheres or air at a pressure of 10 atmospheres, whereas 0·5 per cent. of carbon monoxide will bring about death at ordinary pressures. M. Mosso also found that if the animals were brought straight out of the mixture of oxygen and carbon monoxide into the air they died at once, but that if the mixture were gradually purified the blood was regularly washed (*on produit un véritable lavage de leur sang*), and at the end of about half an hour they could without danger be placed in a normal atmosphere. M. Mosso considered this last fact to be particularly interesting from a therapeutical point of view. Take for instance the case of a mining accident where men live in a condition of partial asphyxiation for hours or even days; it is probable that many of these would be saved if immediately after they were brought up they were placed in an atmosphere containing oxygen under pressure.

*The Last Sign of Life.*

Mr. Augustus D. Waller has reported to the Academy of Sciences a distinctive sign which permits the recognition in a few moments whether any organ or tissue, animal or vegetable, is living or dead. The reaction is based upon the following principle. Living matter responds to an electrical excitation by a current in the same direction. This same substance killed by exposure to a high temperature no longer responds to the excitation, or if it does it shows a polarisation current in the opposite direction. This positive reaction proves, according to M. Waller, that the object examined is not lifeless; it is a general and characteristic phenomenon of living matter as such, and one which is found in the nerves, muscles, retina, skin, liver, &c., in animals, and in the leaves, roots, fruits, seeds, &c., in vegetables. It is their last sign of life by means of which it is possible to recognise immediately whether they are still alive and even, up to a certain point, to measure and to express in figures how much vitality they retain.

*Obituary.*

Dr. Alfred Lamoureux of Paris, Municipal Councillor and Member of the General Council of the Seine, died last week. He had for a long time been suffering from heart disease.

Sept. 25th.

[1] If this percentage is correctly quoted the statement is indeed remarkable.—ED. L.

## ROME.

(FROM OUR OWN CORRESPONDENT.)

*The Anti-Malaria Campaign.*

THE strenuous efforts now being put forth in Italy to combat malaria and tuberculosis make it necessary to return frequently to these topics in order to follow the progress of the campaign against them. In regard to malaria the *Accademia dei Lincei* publishes the first report of the experiments undertaken by Professor Grassi and others along the Battipaglia-Reggio line of railway from San Nicola Varco to Albanella, over a distance of some eight miles. The objects aimed at were two: (1) to prove that malaria can be contracted only through the bites of anopheles; and (2) to find means of overcoming the practical difficulties that stand in the way of an efficient prophylaxis. Altogether 104 persons, including 38 children under 10 years of age, were kept under observation, all of them being railway employés with their respective families, living at the two stations and in various houses, 10 in number, along the line. The locality chosen, the Plain of Capaccio, is among the most unhealthy in all Italy. The persons selected for the experiment had all been examined during the non-malarial season—that is to say, before the anopheles had become infected—and those found to be malarious had been treated with quinine. The preventive measures adopted were the protection of the houses from the entrance of mosquitoes by wire gauze over the windows and the wearing by any persons obliged to be on duty outside after sunset or during the night of a simple veil attached round the hat with elastic, and of thick cotton gloves with tight sleeves. All who could went indoors at sunset and did not come out again till after sunrise. It was found very difficult, especially at first, to induce the people to observe these simple precautions in the efficacy of which they had no faith, but, nevertheless, of the 104 individuals experimented upon, excepting three cases of relapses which had escaped the previous treatment by quinine, not one has so far been attacked by malaria. This is very fortunate, for in spite of all precautions some anopheles succeeded in inflicting their bites, and although the proportion of infected insects is small (1 per cent.) one of these latter might easily have found its way into a house and inoculated some of the inmates. The better to supervise the experiment Professor Grassi spent three days a week on his field of operations, sleeping at the station of Albanella with open windows (covered, of course, with the wire gauze), and the same was done, though for shorter periods, by Dr. Martirano and Dr. Blessich who assisted him. While the subjects of the experiment thus enjoyed a complete immunity from malarial fever the other inhabitants of the same locality, who may be regarded as so many control subjects, not having been protected in any way against the anopheles, fared very differently, having, it is stated, been all attacked, even those living under otherwise superior conditions. Other similar experiments have been carried out by Di Mattei in the Val Savoja[1] and by Dr. Fermi and Dr. Tonsini on the Island of Asinara,[2] near Sardinia. The former place is exceedingly malarious and the mosquitoes are numerous; nevertheless, by the aid of wire gauze over the windows of the house and the use of oil of turpentine on the hands and faces of the five inmates who carried out the experiment the mosquitoes were kept away and no case of malaria occurred during a period of four months. Elsewhere in the locality malaria was raging. In Asinara the conditions are peculiarly favourable for testing the practicability of entirely ridding a given area of malaria by destroying the mosquitoes infesting it. Dr. Fermi and Dr. Tonsini by destroying the larvæ with petroleum and the adult mosquitoes by means of pyrethrum, chrysanthemum, valerian, and zanzolina, succeeded in exterminating anopheles in the island and greatly diminishing the number of culex pipiens. At the same time use was made of wire gauze over the windows of the houses to protect the inhabitants from being bitten, with the result that no fresh case of malaria occurred in the island, although in the previous year 40 persons had contracted the disease there. The experiment was carried out last year from June to November and is being continued this season.

[1] Annali d'Igiene Sper., fasc. 2, 1900.
[2] Ibid.

*The "Sanatorio Umberto I."*

The commission charged with the selection of a site for the Milanese Sanatorium have recommended a place in the Valtellina (one of the valleys leading from Italy to the Engadine), named Sortenna, above the village of Sondalo and overlooking the whole of the valley from Tirano to Belladore. It is situated in the midst of woods at an elevation of close upon 4000 feet above the sea and has an excellent aspect to the south-west. The commune of Sondalo has offered to give all the ground required for the purpose gratuitously. The Novara commission appointed for a similar purpose has chosen a site at Gozzana, in the beautiful neighbourhood of the lake of Orta, at an altitude of 1140 feet above sea level. The aspect is full south and it is thoroughly sheltered from the only wind prevailing on the lake—namely, the north. It is instructive to note the considerations which guided the commissions in their choice of a suitable site. These were shortly as follow: (1) a central position for the different parts of the province; (2) vicinity to a railway station; (3) easy access to a town where all necessaries are readily procurable; (4) vicinity of a good carriage road; (5) ample grounds of a nature suitable for building purposes and varied in its character, partly wooded, partly cultivated, and in meadow; (6) moderate cost of the land; (7) a good elevation above the sea; (8) abundance and good quality of water-supply; (9) sunny aspect; (10) situation sheltered from prevailing winds; (11) choice of walks in all directions among numerous pine and other resinous trees without patients requiring to leave the grounds; (12) electric lighting at small cost; (13) absence in the neighbourhood of factories or densely populated spots; and (14) isolation (by a stretch of intervening ground) from adjoining habitations.

Sept. 24th.

# Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—In September the following candidates passed in the subjects indicated:—

*Surgery.*—J. Black, Manchester; J. W. Bowd, St. Bartholomew's Hospital; D. J. Ferris (Sections I. and II.), Manchester; J. Gallagher, Bombay; E. T. Longhurst, St. Mary's Hospital; C. C. Pratt, St. George's Hospital and Bristol; J. M. Ritchie, Durham; and H. V. Swindale (Sections I. and II.), Middlesex Hospital.

*Medicine.*—A. G. H. Anthonisz (Section I.), University College Hospital; M. A. Curry, Bombay; D. Davies, London Hospital; and M. R. Kapadia, Bombay.

*Forensic Medicine.*—A. G. H. Anthonisz, University College Hospital; D. Davies, London Hospital; D. J. Ferris, Manchester; and M. R. Kapadia, Bombay.

*Midwifery.*—J. C. Baggs, St. Thomas's Hospital; W. A. King, Charing Cross and St. George's Hospitals; and V. F. Wall, St. Mary's Hospital.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—D. Davies, J. Gallagher, C. C. Pratt, and J. M. Ritchie.

UNIVERSITY OF DURHAM.—At the Third Examination for the degree of Bachelor of Medicine, held at the College of Medicine, Newcastle-upon-Tyne, in September, the following candidates satisfied the examiners:—

*Second-Class Honours.*—Gayton Warwick Smith, Guy's Hospital; Thomas Corrie Rutherfoord, St. Thomas's Hospital; and James Bowden Waters, College of Medicine, Newcastle-upon-Tyne.

*Pass List.*—Edmund Howard Barrett, M.R.C.S., L.R.C.P., St. Mary's Hospital; Arthur John Spiller Brandon, St. Thomas's Hospital; Samuel Thomas Cochrane, College of Medicine, Newcastle-upon-Tyne; Charles Fisher, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Ida Emilie Fox, London School of Medicine for Women; George Brittan Gill, Hugh Robert Kendal, John Herbert McDowall, Leonard Clark Newton, and Robert Reid Pirrie, College of Medicine, Newcastle-upon-Tyne; Monica Lucien Mary Robertson, London School of Medicine for Women; and Hermann Heinrich Ruffmann, Frederick George Wilson, Norman Bryan Walker, Thomas Wilson, and Robert Younger, College of Medicine, Newcastle-upon-Tyne.

FOREIGN UNIVERSITY INTELLIGENCE.—*Athens:* Dr. Constantin Savas has been appointed to the chair of Hygiene and Bacteriology.—*Berlin:* Dr. A. Buschke has been recognised as *privat-docent* of Dermatology and Syphiligraphy.—*Cagliari:* Dr. G. Pinna has been recognised as *privat-docent* of Medical Pathology.—*Breslau:* Dr. Richard Stern has been promoted to an Extraordinary Professorship of Internal Medicine.—*Copenhagen:* Dr. Oscar Wanscher has been promoted to an Extraordinary Professorship of

Medicine.—*Erlangen:* Dr. Oscar Schulz has been recognised as *privat-docent* on Physiological Chemistry.—*Genoa:* Dr. Giuseppe Ingianni has been recognised as *privat-docent* of Surgical Pathology.—*Gratz.* Dr. Theodor Pfeiffer has been recognised as *privat-docent* of the Pathology and Therapeutics of Internal Diseases.—*Munich:* Dr. O. Messerer, Extraordinary Professor of Forensic Medicine, has been appointed Honorary Professor.—*Naples:* Dr. Prospero Guidone has been recognised as *privat-docent* of Operative Medicine.—*Palermo:* Dr. Gaetano Lodato has been recognised as *privat-docent* of Ophthalmology.—*Parma:* Dr. Marco Pitzorno has been recognised as *privat-docent* of Anatomy.—*Strasburg:* Dr. W. A. Freund, the well-known gynæcologist, is about to retire from the chair of Diseases of Women. The names mentioned in connexion with the chair are those of Professor Fehling of Halle and Professor Frommel of Erlangen.—*Vienna:* The following *privat-docenten* have been promoted to be Extraordinary Professors: Dr. H. Ehrmann, Dr. J. Pal, Dr. E. Redlich, and Dr. A. Elschnig.

THREATENING A MEDICAL MAN.—At the Tredegar Police-court last week a collier was fined £5, or as an alternative one month's imprisonment, for threatening to assault Dr. Joseph Morgan Richey, who had refused to give a certificate enabling compensation to be claimed.

CARTWRIGHT MEDAL FOR ESSAY ON DENTAL SURGERY.—A scheme has been sanctioned by the Charity Commissioners by which £644 left to the Royal College of Surgeons of England in 1884 will be devoted to providing every four years a "Cartwright Medal" for an essay on Dental Surgery. The medal will be accompanied by an honorarium.

PRESENTATION TO A MEDICAL MAN.—At Newton Abbot, Devonshire, on Sept. 21st, Mr. R. Hambly, on behalf of the nursing class of the St. John Ambulance Association, presented Mr. Richard Henry Grimbly, M.R.C.S.Eng., L.S.A., with a silver fountain pen in appreciation of his services as honorary lecturer.

ROYAL COLLEGE OF SURGEONS IN IRELAND.—The Secretary of State for War having granted the President of the Royal College of Surgeons in Ireland two nominations for commissions in the Royal Army Medical Corps Mr. Myles has nominated Mr. J. Langdale Jones and Mr. G. Faber Sheehan, licentiates of the College and past pupils of the College school, for the vacancies.

PURE MILK FOR HOSPITAL PATIENTS.—With the view of procuring a perfectly pure supply of milk for the patients in the Infectious Hospital the Paisley Town Council on Sept. 11th formally opened a model byre for the purpose of providing milk free from tuberculous taint. The byre is managed by a local dairyman who purchased the cows. The corporation had them officially examined under a tuberculin test and all cows exhibiting tuberculous taint were slaughtered.

CHARING-CROSS HOSPITAL MEDICAL SCHOOL.—The students of the Charing-cross Hospital Medical School will open their session on Oct. 1st by giving a conversazione to their friends, commencing at 7.30, among the attractions being physiological, chemical and electrical experiments, and demonstrations of x-ray apparatus. Dr. Abercrombie will show some lantern-slides prepared from photographs taken during a recent visit to Egypt. During the evening concerts will be given and a new and original one-act play will be performed for the first time entitled, *An Unconventional Afternoon*, by Charles Willoughby Stanhope.

BRISTOL ROYAL INFIRMARY.—At the half-yearly board of the governors of this institution held on Sept. 25th it was unanimously resolved, on the motion of the Dean of Bristol (chairman), seconded by Dr. Shingleton Smith:—

That Mr. Richardson Cross having resigned the office of honorary ophthalmic surgeon the warmest thanks of the governors be accorded him in recognition of the very valuable services he has rendered to this institution throughout the last 22 years, during which period he has successively held the posts of honorary assistant surgeon, honorary surgeon, and honorary ophthalmic surgeon, and that he be appointed honorary and consulting ophthalmic surgeon.

At a subsequent meeting of the committee of election Dr. Alexander Ogilvy, B.A., M.D., B.S. Dub., F.R.C.S. Irel., was unanimously elected honorary ophthalmic surgeon in the place of Mr. F. Richardson Cross, M.B. Lond., F.R.C.S. Eng., resigned.

HOSPITAL COLLECTIONS AT FALMOUTH.—The receipts of the Hospital Saturday and Sunday recently held at Falmouth amounted to £78.

NEW WORKHOUSE FOR BARTON REGIS.—On Sept. 18th the Dowager-Duchess of Beaufort laid the foundation-stone of the workhouse for the Barton Regis (Bristol) Union. The total estimated cost is £32,852.

COCKLES AND TYPHOID FEVER.—At the meeting of the Honiton District Council the medical officer of health (Dr. F. M. Reynolds) reported two cases of typhoid fever at Sidbury which were caused by eating cockles obtained from Exmouth.

SELF-INDUCTION OF ABORTION.—An inquest was held in Bath on Sept. 20th upon a married woman aged 36 years. It was proved that deceased had taken drugs and used an instrument upon herself for the purpose of procuring a miscarriage. Medical evidence showed that the drugs were harmless but that the deceased had used an instrument. The coroner said the woman had paid the penalty of her own foolish act and evidently nobody else was implicated. The jury returned a verdict of "Death from septic poisoning."

PHARMACY FOR THE LONDON CONJOINT BOARD.—The Birkbeck Institution is holding classes with practical work in chemistry, physics, biology, and practical pharmacy for the first professional examination of the Conjoint Board. The pharmacy class is conducted by Mr. F. A. Upsher Smith, pharmaceutical chemist, member of the Pharmaceutical Society, and until recently demonstrator of pharmacy and materia medica at the Pharmaceutical Society's school. Preparations for the next Conjoint pharmacy examination will commence on Wednesday, Oct. 3rd, at 6 P.M.

HEALTH OF GLAMORGANSHIRE.—The annual report of Dr. W. Williams, the medical officer of health of the county of Glamorgan, which has just been issued, shows that in 1899 the population of the county was estimated at 616,270. The births during the year numbered 19,868 and the deaths 11,383, equal to a birth-rate of 32·2 and a death-rate of 18·4 per 1000. Of every 1000 children born 202 died under one year of age, the highest infantile mortality that Dr. Williams has had to record. The principal zymotic diseases caused 1753 deaths. Phthisis caused 531 deaths. Five cases of small-pox were notified during the year. Dr. Williams states that works of sewerage and sewage-disposal of considerable importance had been carried out during 1899, but he added that the inspection of dairies, cowsheds, and milkshops was carried out in a very lax way in most districts.

THE UNIVERSITY OF LONDON.—The committee concerned with the nomination of members to represent upon the Senate of the University of London the medical graduates of convocation (including amongst others Lord Lister, Sir Samuel Wilks, Sir William Broadbent, Sir John Williams, Sir Richard Douglas Powell, Mrs. Scharlieb, M.D. Lond., Dr. P. H. Pye-Smith, Dr. S. J. Gee, Dr. W. H. Allchin, Mr. H. G. Howse, Dr. H. Montague Murray, Dr. J. R. Bradford, Dr. W. Pasteur, and Dr. E. Lauriston Shaw) desire it to be known that the selection of Dr. J. F. Payne and Dr. T. Barlow as candidates was made essentially on the following grounds:—First, that these gentlemen are pledged to no party and are prepared to consider the many questions that will come before the new senate without prejudice and to support and strengthen the reconstituted university as a whole. Secondly, that Dr. Payne is a member of the existing senate and that Dr. Barlow was a member of the late statutory commission.

MEMORIAL HOSPITAL, BULAWAYO.—The report of the Memorial Hospital, Bulawayo, for the 12 months ending June 30th, 1899, shows that much activity has prevailed during that time, one of the events being the completion of extensive alterations and additions to the hospital buildings. The cost of maintenance of the institution during the 12 months was £9950. The income was £10,874, made up as follows:—Maintenance fees from paying patients, £3786; subscriptions, £2554; and grants from the British South Africa Company, £4534. The daily average cost for maintenance of all patients, European and white, was 9*s.* 11*d.* The hospital has a monthly grant of £300 from the Government—i.e., the British South Africa Company—

on condition of providing for a daily average of 20 white and 20 native free patients. The total number of patients treated during the 12 months was 1238, consisting of 865 white (836 men and 29 women) and 373 black (358 men and 15 women). Among the whites there were 41 deaths, or 4·7 per cent., and among the blacks 62 deaths, or 16·6 per cent. The most frequent disease was malarial fever, of which there were 461 cases, with 14 deaths. There were also 11 cases of blackwater fever, with three deaths; 48 cases of dysentery, with three deaths; 10 cases of typhoid fever, with one death; and two cases of Malta fever, both of which recovered. The resident surgeon (Dr. F. A. Arnold) was re-engaged for a further period of two years.

PLAISTOW AND CANNING TOWN MEDICAL SOCIETY.—A meeting of the above society was held on Sept. 20th, Mr. F. W. P. Holton presiding. After the transaction of the ordinary business Dr. Edmund Hay, in the absence of Mr. Percy Rose, opened a discussion upon Various Forms of Sore-throat, in which Mr. R. Buksh, Dr. Thomas Anderson, Mr. H. A. de B. Nelson, Dr. Reynolds, and Mr. P. Napier Jones took part.

MEDICO-PSYCHOLOGICAL ASSOCIATION.—The autumn meeting of the South-Eastern Division of the above association will be held at Ticehurst House, Sussex, on Wednesday, Oct. 10th. Luncheon will be at 1 P.M. and members will inspect the asylum and grounds during the course of the afternoon. Members are invited to dinner by Dr. A. S. L. Newington, Mr. H. F. H. Newington, and Mr. T. Newington. The hour will be 6.30 P.M., and the place Ticehurst. Morning dress. The station is Wadhurst, on the South-Eastern Railway.

THE LONDON HOSPITAL MEDICAL COLLEGE.—The following are the results of recent scholarships:—Price Science Scholarship, value £120, J. Roberts; Entrance Science Scholarship, value £60, G. Worrall; Entrance Science Scholarship, value £35 (scholarship divided), A. Salmon and W. D. Hartley; Price Scholarship in Anatomy and Physiology (open to students of Oxford and Cambridge only), value £60, H. M. Turnbull (Oxford University); Epsom Scholarship, value £126, E. L. Sandiland.

## BOOKS, ETC., RECEIVED.

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Recherches sur l'Épilepsie et l'Idiotie. Par Bourneville, &c. Vol. xxii. 1900.

AMES, HELLER, AND CO., Barrack-street, Perth.
Baby Mine: A Book for Mothers. By E. Paget Thurston, M.D., B.A. Cantab. 1900.

APPLETON, D. AND CO., New York.
Transactions of the Society of Alumni of Bellevue Hospital, 1898, 1899. 1899.

BAILLIÈRE, J. B., ET FILS, Paris.
Le Pneumocoque et les Pneumococcies. Par A. Lippmann. Préface du Dr. Duflocq. 1900.

BAILLIÈRE, TINDALL, AND COX, King William-street, Strand, London.
Manual of the Diseases of the Eye. By C. H. May, M.D. 1900. Price 8s. 6d. net.
A Synopsis of the British Pharmacopœia, 1898. Compiled by H. W. Gadd, with analytical notes and suggested standards by C. G. Moor, M.A. Cantab., F.I.C. Fifth edition. 1900. Price 1s. net.

CHURCHILL, J. & A., Great Marlborough-street, London.
The Theory and Practice of Medicine. By J. L. Notter, M.A. M.D. Durh., and W. H. Horrocks, M.B., B.Sc. Lond. Second edition. 1900. Price 25s.
Surgical Pathology and Morbid Anatomy. By A. A. Bowlby, F.R.C.S. Fourth edition. 1900. Price 10s. 6d.
Uric Acid as a Factor in the Causation of Disease. By A. Haig, M.A., M.D. Oxon., F.R.C.P. Fifth edition. Illustrated. 1900. Price 14s.

FISCHER, G., Jena.
Die Krankheiten der Warmen Länder. Von Dr. B. Scheube. Zweite Auflage. 1900.

GEORGI, A., Leipzig.
Beiträge zur Handedesinfektion. Von Dr. Kronig und Dr. Blumberg. 1900.
Der Ueberschuss an Knabengeburten und seine Biologische Bedeutung. Von Dr. A. Rauber. 1900.
Handbuch der Militärkrankheiten. Von Dr. F. A. Dums. Band iii., Die Krankheiten der Sinnesorgane und des Nervensystems. 1900.

JACKSON, W. F. AND SONS, Salford.
Lancashire Asylums Board: Report of a Deputation appointed to visit Asylums on the Continent, with Recommendations regarding the Building of a new (sixth) Lancashire Asylum. Price of report, 5s. each, and postage.

KIMPTON, H., High Holborn, London.
A Text-book of Practical Therapeutics. By H. A. Hare, M.D., B.Sc. Eighth edition. Illustrated. 1900. Price 21s. net.
Cancer of the Uterus. By T. S. Cullen, M.B. Illustrated. 1900. Price 31s. 6d. net.
Text-book of Practical Medicine. By W. G. Thompson, M.D. Illustrated. 1900. Price 21s. net.

LEWIS, H. K., Gower-street, London.
Illustrated Lectures on Nursing and Hygiene. By R. Lawton Roberts, M.D. Lond., D.P.H. Camb. Third edition. Illustrated. 1900. Price 2s. 6d.
The Student's Medical Dictionary. By G. M. Gould, A.M., M.D. Eleventh edition. Illustrated. 1900. 14s. net.

LONGMANS, GREEN AND CO., Paternoster-row, London.
Notes on Physiology. By H. Ashby, M.D. Lond., L.R.C.P. Seventh edition. 1900. Price 5s.

METHUEN AND CO., Essex-street, London, W.C.
Wounds in the Rain: A Collection of Stories relating to the Spanish American War of 1898. By Stephen Crane. 1900. Price 6s.

PUBLISHED BY THE FREE PRESS ASSOCIATION, Burlington.
Transactions of the Vermont State Medical Society, 1899. 1900.

RICHARDS, GRANT, Henrietta-street, London.
The Struggle for Success: A Study in Social Compromise, Expediency, and Adaptability. By A. Stodard-Walker. 1900. Price 6s.

SMITH, ELDER AND CO., Waterloo-place, London.
Orthopædic Surgery. By C. B. Keetley, F.R.C.S. 1900. Price 16s.

Magazines, &c., for October: Strand Magazine, Boy's Own Paper, Girl's Own Paper, Leisure Hour, Sunday at Home, Ludgate Magazine, Westminster Review, Contemporary Review, Friendly Greetings, Myra's Journal, Pall Mall Magazine, Windsor Magazine, English Illustrated Magazine, Knowledge, Humanitarian, Wide World Magazine, New Century Review, North American Review, Cornhill Magazine, Sunday Strand, Captain, Traveller, Sandow's Magazine, New Monthly.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to* THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, for publication in the next number.*

ADAMS, E. W., M.B. Lond., has been appointed Medical Officer for the South-East Sanitary District of the Sheffield Union.
ALLWORK, F., L.S.A. Lond., has been appointed a Public Vaccinator for New Norfolk, Tasmania.
ANDERSON, B. A., M.B., C.M. Aberd., has been appointed a Public Vaccinator for Westbury, Tasmania.
BAIR, JOHN, M.B., C.M. Glasg., has been re-appointed Medical Officer of Health by the Rishton Urban District Council.
BRUZAUD, ALFRED S., M.R.C.S., L.R.C.P., has been appointed Senior House Surgeon to the Huddersfield Infirmary.
CHAMP, J. H., M.D. Lond., M.R.C.S., has been appointed a Public Vaccinator for Broad Arrow, West Australia.
CHESSON, H., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Superintendent, Hospital for Insane, Toowoomba, Queensland.
COOK, JAMES, L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for Barcaldine, Queensland.
COOPER, H. S., L.R.C.P. Lond., M.R.C.S., has been appointed Certifying Surgeon under the Factory Acts for the Yaxley District of the County of Huntingdon.
CRAWFORD, C. R. H., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer of the Workhouse, Tonbridge Union.
DUCKWORTH, H., M.B., C.M. Edin., has been appointed Medical Officer of Health for the Oswaldtwistle Urban District.
FELL, ROBERT, M.R.C.S., L.R.C.P., has been appointed Senior Assistant House Surgeon to the Huddersfield Infirmary.
FORSYTH, W. A., M.B., Ch.B. Melb., has been appointed Officer of Health for the Shire of Mansfield, Victoria, Australia.
GODFREY, P. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Health Officer for the Port of Strahan, Tasmania.
GREGG, JAS., M.B., B.Ch. Dubl., has been appointed a Public Vaccinator for Russell, Tasmania.
HEALEY, W. J., L.R.C.P., L.R.C.S. Irel., has been appointed Officer of Health to the Mertondale Local Board of Health, West Australia.
HEWITSON, ALFRED, M.R.C.S., L.R.C.P., has been appointed Junior Assistant House Surgeon to the Huddersfield Infirmary.
ISAAC, R. J., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Northern Sanitary District of the Gower Union, vice B. Jones, resigned.
KATER, N. W., M.B., Ch.M. Syd., has been appointed Demonstrator of Anatomy to the University of Sydney, New South Wales.
KINNEAR, J. C. M., M.B., M.S. Aberd., has been appointed Medical Officer for the Wickham Sanitary District of the Fareham Union, vice P. J. Molony, resigned.
LINDLEY, LENNOX H., M.B., B.Ch. Oxon., has been appointed by the Shah as his Assistant Physician.
LOVE, W. W. R., M.B., Ch.M. Edin., has been appointed a Member of the Queensland Medical Board.
MACKENZIE, M., F.R.C.S. Edin., L.F.P.S. Glasg., has been appointed a Public Vaccinator for the District of Bulier, New Zealand.
MACNAMARA, M., L.K.Q.C.P. Irel., L.R.C.S., has been appointed Medical Officer, St. Vincent's Orphanage, Nudgee, Queensland.

MALLETT, F. R., M.D. Edin., has been appointed Medical Officer for the Eastern Bolton Sanitary District, Bolton Union, vice F. B. Mallett, deceased.

MARSH, JAMES, M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Urban Districts of Tyldesley and Atherton, in the County of Lancaster.

MARSHALL, FRANK E., M.B., Ch.B. Vict., L.S.A., has been appointed Surgical Tutor and Registrar to the Royal Infirmary, Liverpool, vice J. P. Nixon.

MEGGITT, HERBERT, L.R.C.P., L.R.C.S., has been appointed District Surgeon for South Tottenham of the City of London Lying-in Hospital.

MOORE, E. J., M.B., B.Ch. Oxon., M.R.C.S., D.P.H. Camb., has been appointed Medical Officer for Eltham.

NICHOLSON, H. GILBERT, M.R.C.S., L.S.A., has been appointed District Surgeon for Bethnal-green of the City of London Lying-in Hospital, vice W. F. Blyth, resigned.

PRICE, T. A., M.B., Ch.B. Edin., has been appointed Assistant Medical Officer, Hospital for Insane, Goodna, Queensland.

RIDDELL, ROBERT, M.B., C.M. Edin., has been appointed Certifying Surgeon under the Factory Acts for the Sandbach District of Cheshire.

SMITH, JAMES, L.R.C.P., L.R.C.S. Edin., has been appointed Public Vaccinator for Port Frederick and Port Sorell, Tasmania.

STALLARD, NIGEL F., M.B., M.R.C.S., L.R.C.P., has been appointed House Surgeon and Registrar to the Royal Orthopædic Hospital, vice R. H. Bremridge, resigned.

STUART, G. G., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Public Vaccinator for Ulverstone, Tasmania.

WALDEN, F. J., M.B., Ch.M. Edin., has been appointed a Public Vaccinator for Cambridge, Sorell, and Spring Bay, Tasmania.

WHITE, G. V., M.B. Melb., has been appointed Medical Officer at Thursday Island, also Health Officer at Thursday Island, also Visiting Surgeon to the prison at that place, and Medical Officer for the care, inspection, and supervision of lepers detained at the Lazaret at Friday Island, Queensland.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BOURNEMOUTH NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST (OPEN-AIR TREATMENT).—Resident Medical Officer. Salary commencing at £10 per working month (institution closed July and August), with board, residence, and washing (no alcohol provided).

BOURNEMOUTH: THE BOSCOMBE HOSPITAL.—House Surgeon. Salary £60 per annum, with board, lodging, and washing. No beer or spirits.

CITY HOSPITAL FOR INFECTIOUS DISEASES, Newcastle-upon-Tyne.—Resident Medical Assistant for one year. Salary £60, with board, lodging, and washing.

CITY DISPENSARY, 29 and 30, College-street, Dowgate-hill, London.—Physicians. Apply to the Secretary, 98, Cannon-street, E.C.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria-park, E.—Second House Physician, for six months. Salary at the rate of £30 per annum, with board and residence.

COUNTY ASYLUM, Chester.—Junior Assistant Medical Officer, unmarried. Salary £130 per annum, rising £10 yearly to £160, with board (no liquors), lodging, and washing.

COUNTY ASYLUM, Lancaster.—Assistant Medical Officer. Commencing salary £125 per annum with the usual allowances.

DENBIGHSHIRE INFIRMARY, Denbigh.—House Surgeon for 12 months. Salary £100, with board, residence, and washing.

DEVONSHIRE HOSPITAL, Buxton, Derbyshire.—Assistant House Surgeon. Salary £50 per annum, with furnished apartments, board, and washing.

DOWN DISTRICT ASYLUM, Downpatrick.—Assistant Medical Officer unmarried. Salary £100 per annum, with prospects of increase, and furnished apartments, board, washing, and attendance.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY. — Assistant House Surgeon. Board and washing provided.

DUNDEE ROYAL INFIRMARY.—Resident Medical Assistant for six months. Salary at the rate of £40 per annum, with board and washing.

DURHAM COUNTY ASYLUM, Winterton, Ferryhill.—Junior Assistant Medical Officer. Salary £140, rising £10 annually to £160, with board, laundry, and attendance.

FRENCH HOSPITAL AND DISPENSARY, 172, Shaftesbury-avenue, London.—Resident Medical Officer (not a female), speaking French, unmarried. Salary £80 a year, with full board.

GUEST HOSPITAL, Dudley.—Assistant House Surgeon for six months. Salary at the rate of £40 per annum, residence, board, and washing.

HORTON INFIRMARY, Banbury.—House Surgeon and Dispenser. Salary £80 per annum, with board and lodging.

HOSPITAL FOR WOMEN, Soho-square, London.—House Physician for six months. Salary £30 for that period.

KENT AND CANTERBURY HOSPITAL. — House Surgeon, unmarried. Salary £100 a year, with board and lodging.

KENT COUNTY ASYLUM, Chartham, near Canterbury.—Junior Assistant Medical Officer, unmarried. Salary £125 per annum, with board, lodging, and washing.

LIVERPOOL EYE AND EAR INFIRMARY.—House Surgeon. Salary £80, with residence and maintenance.

LIVERPOOL INFIRMARY FOR CHILDREN, Myrtle-street.—Assistant House Surgeon for six months. Salary £25 for that period, with board and lodging.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Resident Medical Officer for one year. Salary 100 guineas per annum, with board, lodging, and washing.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Non-resident House Surgeon for six months. Honorarium at the rate of £25 a year.

MACCLESFIELD GENERAL INFIRMARY.—Junior House Surgeon. Salary £70 per annum, with board and residence at the Infirmary.

MANCHESTER HOSPITAL FOR CONSUMPTON AND DISEASES OF THE THROAT AND CHEST.—Resident Medical Officer for the In-patient Department at Bowden, Cheshire. Salary £60 per annum, with board, apartments, and washing.

MANCHESTER SOUTHERN AND MATERNITY HOSPITAL.—Resident House Surgeon. Honorarium £50 per annum and board.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Honorary Surgeon to the hospital.

NORTH ORMESBY COTTAGE HOSPITAL.—House Surgeon, unmarried, non-resident. Salary £200 per annum. Applications to the Secretary, Royal Exchange, Middlesborough.

NORTH STAFFORDSHIRE INFIRMARY AND EYE HOSPITAL, Hartshill, Stoke-upon-Trent.—House Physician. Salary £100 per annum, increasing £10 per annum conditionally, with furnished apartments, board, and washing.

PARISH COUNCIL OF TINGWALL, Whiteness and Weisdale.—Medical Officer. Salary £40 per annum, which includes the cost of medicine for paupers belonging to the parish. Apply to the Inspector of Poor, Scalloway, Shetland.

PARISH OF ROUSAY AND EGILSHAY.—Resident Medical Officer. Salary £51 sterling. Apply to the Clerk of Parish Council, Rousay, Orkney.

PLYMOUTH BOROUGH ASYLUM.—Assistant Medical Officer, unmarried. Salary £150 per annum, rising £10 annually to £200 per annum, with furnished apartments in the asylum and board and washing.

ROTHERHAM HOSPITAL.—Assistant House Surgeon. Salary £60, with board, lodging, and washing.

ROYAL BUCKINGHAMSHIRE HOSPITAL, Aylesbury.—Resident Surgeon, unmarried. Salary £80 first year, rising annually by £10 to £100, with board and furnished apartments.

SEAMEN'S HOSPITAL SOCIETY (DREADNOUGHT), Greenwich, S.E.—House Surgeon. Salary £50 per annum, with board, residence, and washing.

SOUTHPORT INFIRMARY.—Honorary Surgeon for the Treatment of Diseases of the Eye.

ST. MARY'S HOSPITAL FOR SICK CHILDREN, Plaistow, E.—Honorary Gynæcologist.

STOURBRIDGE DISPENSARY.—House Surgeon. Salary £120 a year, rising £5 annually to £130, with furnished rooms, coal and gas, and an allowance of £25 for travelling expenses.

SUSSEX COUNTY HOSPITAL, Brighton.—Resident Pathologist, unmarried. Salary £70 per annum, with board and residence in the hospital, and washing. Also Assistant House Surgeon, unmarried. Salary £60 per annum, with board and residence.

THE CHIEF INSPECTOR OF FACTORIES gives notice of a vacancy as Certifying Surgeon under the Factory Acts at Wincanton in the County of Somerset.

VICTORIA CHILDREN'S HOSPITAL Park-street, Hull.—Female House Surgeon. Salary £50 per annum, with board and laundry.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Physician for two years. Salary £100 a year, with board, lodging, and washing.

# Births, Marriages, and Deaths.

## BIRTHS.

ATKINSON.—On Sept. 19th, at Elmhurst, Hampton-hill, Middlesex, the wife of G. L. Atkinson, M.R.C.S., L.R.C.P. Lond., of a son.

CRAWSHAW.—On Sept. 25th, at 15, Cobcar-street, Elsecar, the wife of J. H. Crawshaw, Surgeon, of a son.

DICKIE.—At Moriani, Assam, on August 28th, the wife of I. L. Dickie, M.B., of a daughter.

ODELL.—On the 23rd inst., at York House, Hertford, the wife of Robert Odell, of a son.

WATSON.—On Sept. 16th, at 1, York-road, Hove, Sussex, the wife of Solomon George Watson, M.R.C.S., of a son.

## MARRIAGES.

BAYLISS—SIMONS.—On the 20th inst., at St. James's Church, Boscombe, by the Rev. F. Cecil Bayliss, brother of the bridegroom, assisted by the Rev. Leofric Cutler, Richard Arthur Bayliss, M.R.C.S., L.R.C.P. Lond., youngest son of Richard Bayliss, of Spondon, Derbyshire, to Kate Diana Hester, second daughter of the late Nathaniel Wells Simons, J.P., of Hawkwood, Boscombe.

RAY—TAUBMAN.—On the 19th inst., at Holy Trinity Church, Bolton-le-Sands, Carnforth, by the Rev. H. T. Greaves, M.A. (brother-in-law of the bridegroom), assisted by the Rev. A. R. Tomlinson, M.A., vicar, John Howson Ray, Ch.M. (Vict.), F.R.C.S. (Eng.), fourth son of the late Wm. Ray, of Whalley Range, Manchester, to Edith, only daughter of the late Wm. Hy. Taubman, of Blackburn.

WILLCOCKS—DUNLOP.—On Sept. 25th, at St. Mary Magdalene's, Stoke Bishop, Arthur Durant Willcocks, M.R.C.S., of Taunton, to Martha ("Pattie"), daughter of the late Matthew Dunlop, of St. Michael's-hill, Bristol.

## DEATHS.

BRADSHAW.—On Sept. 23rd, at Avenue-road, Regent's-park, James Dixon Bradshaw, M.A., M.B. Oxon., in his 53rd year.

HAVILAND.—On Sept. 22nd, at Cedar House, Cheniston-gardens, W., Henry James Haviland, M.D., J.P. for Cambs., aged 74.

THOMSON.—On Sept. 25th, at 14, Coates-crescent, Edinburgh, Thomas Cleghorn, eldest son of John Thomson, M.D., F.R.C.P. Ed., in his 13th year.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## "PROFESSIONAL ORGANISATIONS."

OUR readers will have noticed the correspondence which has been taking place in our columns with reference to the subject of "Professional Organisations." The protagonists were Dr. James Ryley and the Yarmouth District Committee of the Incorporated Medical Practitioners' Association, through its secretary, Mr. W. E. Wyllys. The controversy was commenced by Dr. James Ryley in THE LANCET of August 25th, p. 627. Mr. W. E. Wyllys, on behalf of the Incorporated Medical Practitioners' Association, replied to Dr. Ryley in our issue of Sept. 8th, forwarding to us at the same time some correspondence which had passed between the association and Dr. Ryley at various dates between June 16th and August 26th. We stated in a note to Mr. Wyllys's letter that we had read the correspondence, which was, however, incomplete as the association was waiting for a reply from Dr. Ryley, but that reading the letters had left the impression on our minds that Dr. Ryley ought to have no difficulty in remaining a member of the association without any sacrifice of his principles. It may be as well here to record the fact that the subject in each correspondence was whether or no the medical men attached to the institute in Yarmouth founded by the friendly societies should be met in consultation. Cases of emergency were to be seen in consultation without any doubt, a fact which, so far as we understand, Dr. Ryley does not seem to have realised. A further letter from Dr. Ryley appeared in THE LANCET of Sept. 15th to which the association replied through Mr. Wyllys in THE LANCET of Sept. 22nd, and another appears at p. 968 of our issue of to-day. More letters passed between Dr. Ryley and the association at dates varying from Sept. 8th to Sept. 10th, but their tenour may be reduced to the simple statement that Dr. Ryley resigned his membership of the association and that this resignation was formally accepted. We have therefore nothing to add to our former opinion expressed in our note to Mr. Wyllys's letter in THE LANCET of Sept. 8th, p. 769.

## GERMAN TEXT-BOOKS ON ANATOMY.

*To the Editors of* THE LANCET.

SIRS,—Will you kindly name in your next issue a German text-book of anatomy of moderate size which can be relied on; also publisher of same. I am, Sirs, yours faithfully,

Sept. 24th, 1900. COOL SHADE.

*** Any one of the following works would probably meet the requirements of our correspondent:—A. Voll: Kompendium der normalen Anatomie (eight marks); Fr. Reinke: Anatomie des menschen (14 marks); Ed. Richter: Grundriss der normalen menschlichen Anatomie (15 marks); C. von Langer: Lehrbuch der systematischen und topographischen Anatomie (17 marks). The first of these works is rather condensed. Any of them can be obtained in London from Muller of Star Yard, Carey-street, W.C., or from Dulau and Co., Soho-square.—ED. L.

## "WANTED—A HOME FOR AN EPILEPTIC."

*To the Editors of* THE LANCET.

SIRS,—I am writing to say that there is a good home for invalided Roman Catholic clergy in Clifton kept by the Nursing Sisters Clifton-wood Convent, Clifton. I am, Sirs, yours faithfully,

Bristol, Sept. 25th, 1900. LAURA HEATH.

## FOR RIDERS IN HANSOM CABS.

ON the afternoon of Friday, Sept. 21st, two inventions for use in hansom cabs were exhibited on the Thames Embankment by the inventor, Captain Dickson. One was a modification of the ordinary gravel iron, a wheel taking the place of the usual loop. This wheel in case of the horse stumbling makes a half revolution, thus assisting the horse to recover his footing and lessening the liability of the driver to be thrown from the box. The other invention was a safety strap intended to pass in front of the "fare" and so to keep him from being shot out of the cab in case of an accident.

## "WANTED—A DIAGNOSIS."

*To the Editors of* THE LANCET.

SIRS,—In THE LANCET of Sept. 8th there was a letter from "Inquirer" asking for a diagnosis of a case in which the principal symptom was an iridescent colouration of the urine, looking like blood and yet not being due to blood. I have lately had a similar case which I think may interest "Inquirer" and others of your readers. A boy, aged 13 years, was brought to me with no particular complaint except that his urine seemed to contain blood. He was quite well and comfortable in himself. His urine presented a beautiful pinkish colour and was clear and strongly iridescent. Examination failed to detect any abnormal constituent in the urine, though phosphates were deposited on heating. The pigment, whatever it was, was soluble in chloroform. Inquiry failed to elicit any history that could account for the phenomenon and on the following day the urine was free from unusual colour. Three days later the boy returned and told me that he had discovered the cause of the colouration, which had again followed the eating of some of the ordinary "musk" lozenges such as children commonly buy. There is no doubt that this is the cause in my patient's case, and it surprises me very much that I should never have seen or heard of the occurrence before, for pink musk sweets have been familiar to me from my childhood and are largely consumed every day by children, and yet I have never heard of their producing this effect until now. The appearance of the urine was most distinctive and could hardly have escaped observation. Anyone would have thought that it contained blood. The questions as to what the pigment is and how it affects the urine are of much interest, and I have submitted a sample both of the urine and the sweets to Dr. W. D'Este Emery, of the Birmingham University, who is kindly investigating the matter. The result of his researches I hope may be communicated to you in due time.

I am, Sirs, yours faithfully,

Bromsgrove, Sept. 25th, 1900. CAMERON KIDD.

## "IS IT A COMPANY?"

WE have had forwarded to us a four-page handbill of an institution called The Progressive Medical Alliance. Page 1 is embellished with a view of the building where the Alliance is housed, 57 and 59, Oxford-street, W., and gives the addresses where men only and where women only are seen. Pages 2 and 3 we print below:—

*DISEASES OF MEN.*

The P. M. A.

EXPERTS AND SPECIALISTS

Absolutely Cure all Nervous Complaints, Physical Exhaustion, Fits, Skin, and Blood Diseases and Genito-Urinary Troubles.

Remember . . .

that we are a reputable Medical firm, engaged in a noble calling and that experience has taught us to cure many cases which others have pronounced hopeless, and to use many effective remedies of which ordinary practitioners are ignorant.

The Physicians and Specialists on the Staff of the PROGRESSIVE MEDICAL ALLIANCE are graduates of British, Continental, and American Universities, and have attained a high eminence in their Specialities.

*Nervous, Private, Blood, Skin, and Chronic Diseases specially invited.*

ALL CASES STRICTLY CONFIDENTIAL.

*DISEASES OF WOMEN.*

The P. M. A.

Ladies' Department, 7, Soho Street, is now open for the Scientific Treatment and Cure of all FEMALE COMPLAINTS and is under the Supervision of a Lady Physician of the widest experience and highest qualifications. Amongst the numerous examinations she has passed are the Staats-Examen of the University of Berne, the M.D. Turicensis, the Examination of Physician and Licentiate in Medicine of the King and Queen's College of Physicians in Ireland and the Licentiate in Midwifery of the King and Queen's College of Physicians, Dublin. Having held hospital appointments and enjoyed a large practice, her experience has not only been wide, but practical, and ladies will do well to consult her upon all diseases peculiar to their sex.

HOURS 11 TO 2 AND 6 TO 9.

FRAUEN KRANKHEITEN.

Eine Frau Doktor. Praktische Arzt.

Stunden 11 - 2. 6 - 9.

*Sonntags Keine Sprechstunden.*

ON PARLE FRANCAIS. DEUTSCH WIRD GESPROCHEN

We think it would be as well for the General Medical Council to ascertain who are the graduates of British universities on the staff of the Progressive Medical Alliance. The Council might also take notice of the lady who has passed "the M.D. Turicensis" and also the examination of the Physician and Licentiate in Medicine of the King and Queen's College of Physicians in Ireland and the Licentiate in Midwifery of the King and Queen's College of Physicians, Dublin.

## THE CLUB QUESTION IN LANCASTER.

WE are pleased to note that the dispute between the medical men of Lancaster and the medical clubs has ended in a complete victory for the former. They have obtained an advance in fees from 3*s.* 6*d.* per head per annum to 5*s.* The little campaign has been carried out quietly and with little ill-feeling through the medium of the local medical society, which includes all members of the profession in the

town. Those not directly affected supported their colleagues and thus enabled them to achieve a result that they would have otherwise been powerless to attain. It may serve as an inducement to others to try what a little organisation will do.

## "A SUBSTITUTE FOR BRANDY."

OUR remarks upon the temperance workers substitute for brandy seem to have given Mrs. Oliver and Dr. R. Watson a certain amount of pain. Mrs. Oliver argues that granting that her mixture contains 83 per cent. of alcohol as against 50 per cent. in brandy, both by volume, it does not follow that the patient will imbibe that percentage. She says: "It requires to be very copiously diluted with from eight to 16 times its bulk of water, so that if it contains 83 per cent. when made up by a chemist it only contains 5 to 10 per cent. when used." Mrs. Oliver further says that the value of alcohol in her preparation is not as a drug but as a preservative, and that she must employ an alcoholic tincture as a medium until such time as it may be replaced by another. She further says that several of the constituents of the substitute, such as carbonate of ammonia, ginger, oil of nutmeg, are, singularly or collectively, more potent or efficacious as a tonic and stimulant than brandy. We will take the last of Mrs. Oliver's remarks first. It is true that ginger, carbonate of ammonia, and various essential oils are both stimulant and tonic, but the value of brandy, as we pointed out in our issue of Sept. 22nd (p. 856), lies not in the alcohol which it contains, but in the ethers. We think it quite possible that ginger and carbonate of ammonia, administered in hot water, would be quite as valuable a stimulant as alcohol, if not more so. Dr. Watson, in a signed article in the *League Journal* for Sept. 22nd, argues that the virtue of the mixture is utterly independent of alcohol, but it seems to us that both Mrs. Oliver and Dr. Watson miss the point of our argument. The original prescription was given, according to the *League Journal*, to influence people against resorting to an *alcoholic* remedy, and we repeat that the substitute recommended being much more alcoholic than ordinary brandy is in no way a substitute for it. We are quite willing to allow that a draught given out of a medicine bottle is less attractive than out of an ordinary brandy bottle or that obtained from a public-house; but, as they both contain alcohol, for the one to be put down as containing incalculable possibilities for evil and the other to be recommended to every member of "our guild" is inconsistent, to call it nothing else. The following letters show that we are not alone in this view.

*To the Editors of* THE LANCET.

SIRS,—The short-sighted logic and characteristic righteous indignation exhibited at your matter-of-fact and truthful criticism of the utterly ineffectual and even injurious methods of unscientific temperance reformers recall to my mind another amusing experience of the same order. A friend of mine in Central America used long to distress his sober-minded wife with the too frequent imbibition of his favourite "four crown." All of a sudden he developed strongly-marked total abstinence principles, much to the consolation of his wife and friends. He became, and probably is to-day, a rabid total abstainer, lecturing and arguing that alcohol is always a virulent poison! But in all probability only I and the chemist who made up the pick-me-ups know that our worthy friend and staunch teetotaler took daily a dozen or more drinks of a mixture of the tinctures of ginger, capsicums, cardamoms, and the liquor of the acetate of ammonium with the aromatic spirits of ammonia, in which the proportion of alcohol is much the same as in the substitute for brandy Mrs. Oliver's friend intends distributing broadcast in the cause of temperance—or is it total abstinence? But a nod's as good as a wink to a blind horse!

I am, Sirs, yours faithfully,

Sept. 24th, 1900. J. W. C.

*To the Editors of* THE LANCET.

SIRS,—Your remarks in regard to the prescribing of sal volatile and chloric ether mixtures for dipsomaniacs are perfectly just. I recollect dispensing the following prescription for a lady: Compound tincture of cardamoms, three ounces; compound spirit of ammonia, three ounces; and spirit of chloroform, two ounces; a small spoonful in water every three hours. The lady consumed three or four bottles of this per day when the dyspeptic flatulence (!) was particularly bad. This was done while the medical attendant was in charge of the case. It was really an instance of substituting one tipple for another. Two other instances in my own experience of the abuse of hysteria and flatulence mixtures might also be mentioned, but the cause and effect were the same—addiction to the brandy bottle. In all cases the original intention of the prescriber was at first adhered to, but the alcohol in the physic soon made its presence felt.

I am, Sirs, yours faithfully,

Sept. 24th, 1900. PHAR. CHEM.

## A SINGULAR STORY OF HYPNOTISM.

MEDICAL subjects are, with few exceptions, unsuitable for discussion in the columns of ordinary newspapers, and nothing but harm is likely to result from this kind of publicity being given to clinical reports of hospital cases. Journalistic enterprise, which has on many occasions carried its votaries too far, concerns itself but little with questions of medical etiquette. This may, perhaps, be the reason why the *Daily Mail* of Sept. 24th devotes rather more than a column to the description of a visit to the British Hospital for Mental Disorders and Brain Diseases ("Forbes Winslow Memorial"), 208, Euston-road, N.W. The article has no signature of any kind nor anything to indicate the writer's position; his condemnation of what he professes to have seen is very emphatic, so it will be better to quote his own words rather than to attempt a summary of them.

"..... I had been invited to witness a night or two ago the hypnotic transferences which take place regularly at this institution, and been assured that the physician who attends 'adopts the same experiments as followed out by the late Professor Charcot at the Salpêtrière School, Paris, with equal success.' ..... It was the night of the week upon which Dr. Forbes Winslow himself attends to see the patients. ..... The doctor sat ..... in a ..... room on the first-floor front; and waiting in readiness behind him was a clean-shaven youth, thick-set, with his hair plastered over his forehead and the general cut of the valet. This turned out to be a 'professional medium' and the doctor called him 'May.' The first patient shown in was a melancholy looking, feeble, vacant man, who was under treatment for depression. ..... May, the medium, was seated opposite to the patient and was, the doctor asserted, hypnotised. The pair joined hands, and May pulled and contorted and grimaced until the good doctor cried 'Wake!' when the medium instantly ..... emerged from the hypnosis in which he purported to have been. 'Now you are better,' said the doctor to the patient. 'Look at the change,' he cried to me; and truly a weary smile was for the time evicting the gloom from the sufferer's face. ..... Then came ..... a woman of 30 whose mind was obsessed with what is known as an 'imperative idea.' ..... The ..... physician ..... did not hypnotise this patient at all, any more than he had hypnotised any other patient. He did not even profess to do so. What he did profess to do was to hypnotise May and to assure that unfortunate medium that he, the medium, had the woman's confused feelings now. ..... There were other patients, but here the doctor switched off to hypnotise May for my special benefit and to explain that while he was in a state of hypnosis he could feel the various symptoms which had been transferred from patients. ....."

The following letter appeared in the *Daily Mail* of Sept. 26th:—

"*To the Editor of the 'Daily Mail.'*

"It is the duty of the physician to endeavour to relieve suffering in the way which appears to him to be the most advisable.

"In the remarks referring to this subject which appeared in your issue of yesterday you apparently regard this treatment of nervous diseases by transference as novel and 'strange.' The first physicians who brought this to my personal knowledge were Prof. Lombroso of Turin and Dr. Gorodichze of Paris. It was the opinion of these gentlemen that some cases of nervous disease, which in the old days would become chronic in their nature, were now amenable to the methods I am adopting at my hospital.

"Transference was largely used by Dr. Luys at La Charité Hospital, Paris, and an article which appears in the *Fortnightly Review* for August of 1890 shows that even 10 years ago this treatment was recognised in France. In cases where an indirect 'suggestion' is required it can only be obtained by transference.

"33, Devonshire-street, W., Sept. 25th." "FORBES WINSLOW.

## TO MEDICAL FREEMASONS.

*To the Editors of* THE LANCET.

SIRS,—Will you allow me to point out to those who are brother Masons as well as brothers in the medical profession that at the elections to be held at the Royal Masonic Institution for Girls and the Royal Masonic Institution for Boys on Oct. 11th and Oct. 12th respectively there are two "medical" girl candidates (No. 17 and No. 24 on the list) and one "medical" boy candidate (No. 13). I have reason to think that previous appeals such as this in your columns have done much good and trust you will find room for these few lines.

I am, Sirs, yours faithfully,

Sept. 24th, 1900. P. Z.

## CHRONIC URETHRITIS.

*To the Editors of* THE LANCET.

SIRS,—A B contracted urethritis 18 months ago. After using all the remedies—protargol, largine, &c.—without any avail everything was stopped. Microscopic examination showed only streptococci and pus. At present with the slight running drop of pus, and that only occasionally, he suffers from intense painless chordee every morning with headache. I shall feel grateful if any of my *confrères* will give me the benefit of their advice. The patient is 40 years of age, grand physique, and most abstemious, and he has means.

I am, Sirs, yours faithfully,

Sept. 6th, 1900. SOUTH AFRICAN.

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*Bowers.*—The gentleman mentioned by our correspondent had better apply to one of the usual agents. We should not advise anyone to go to South Africa at present on the chance of picking up work, but if he went out to fill some definite post matters would be different. We presume the qualification was obtained prior to 1886.

*A. F.*—Our correspondent will find our opinion of the preparations in THE LANCET of June 16th (p. 1750) and August 11th, 1900 (pp. 406 and 454). Some correspondence on this subject will also be found in THE LANCET of June 30th (p. 1908) and July 7th, 1900 (p. 52).

*B. B. G.*—The address of the Society for the Relief of Widows and Orphans of Medical Men is 11, Chandos-street, Cavendish-square, W.

*Sixty.*—Our correspondent must consult his usual medical attendant. We never give medical advice.

ERRATUM.—We regret that in our report of the meeting of the Section of Physiology at the meeting of the British Medical Association published in THE LANCET of August 18th, p. 505, the name of Dr. L. J. J. Muskins was erroneously printed as Maskens.

## METEOROLOGICAL READINGS.

*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, Sept. 27th, 1900.

| Date. | Barometer reduced to Sea Level and 32° F | Direction of Wind. | Rainfall. | Solar Radiation in Vacuo. | Maximum Temp. Shade. | Min Temp | Wet Bulb | Dry Bulb | Remarks at 8.30 A.M. |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 21 | 30·36 | WSW | ... | 114 | 73 | 51 | 54 | 58 | Fine |
| ,, 22 | 30·30 | S.W. | ... | 107 | 74 | 56 | 60 | 61 | Overcast |
| ,, 23 | 30·20 | W. | ... | 106 | 75 | 60 | 60 | 62 | Cloudy |
| ,, 24 | 29·76 | WSW | ... | 91 | 70 | 58 | 61 | 63 | Cloudy |
| ,, 25 | 29·89 | N.W. | 0·09 | 107 | 65 | 49 | 49 | 52 | Fine |
| ,, 26 | 30·06 | W. | ... | 107 | 68 | 48 | 53 | 56 | Fine |
| ,, 27 | 29·62 | SSW | ... | 86 | 60 | 56 | 59 | 60 | Raining |

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (1st).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M.).

**TUESDAY (2nd).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**WEDNESDAY (3rd).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), Cancer (2 P.M.)

**THURSDAY (4th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.) University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (2 P.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**FRIDAY (5th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (2 P.M. and 6 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.).

**SATURDAY (6th).**—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), London Throat (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## SOCIETIES.

**WEDNESDAY (3rd).**—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. Roberts and others. Paper:—Dr. Herman: On Subcutaneous Symphysectomy.

**FRIDAY (5th).**—WEST LONDON MEDICO-CHIRURGICAL SOCIETY (West London Hospital, Hammersmith, W.).—8.30 P.M. The President (Dr. F. F. Schacht): A Few Observations on the Early Treatment of Abdominal Symptoms. (Inaugural Address.)

WEST KENT MEDICO-CHIRURGICAL SOCIETY (Royal Kent Dispensary, Greenwich-road, S.E.).—8.45 P.M. Election of Officers and Members. Exhibition of Clinical Cases and Specimens by Dr. Scholefield, Dr. Toogood, and Mr. G. C. Williams.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (1st).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. T. Colcott Fox: Consultation. (Skin.)

**TUESDAY (2nd).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. E. Squire: Consultation. (Medical.)

**WEDNESDAY (3rd).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. A. Hillier: Consultation. Medical. 5-7 P.M. Dr. W. J. Horne: Class. Practical Rhinology and Laryngology. Demonstration II.

**THURSDAY (4th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Consultation. (Surgical.)

**FRIDAY (5th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. R. Lake: Consultation. (Ear.)

# EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

*It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.*

*Lectures, original articles, and reports should be written on one side of the paper only,* AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

*Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.*

*We cannot prescribe or recommend practitioners.*

*Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."*

*Letters relating to the publication, sale, and advertising departments of* THE LANCET *should be addressed "To the Manager."*

*We cannot undertake to return MSS. not used.*

# MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1900, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

### VOLUMES AND CASES.

VOLUMES for the first half of the year 1900 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

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**During the week marked copies of the following newspapers have been received:** *Health, Cork Herald, Sussex Daily News, Perthshire Courier, Literary Digest, Bristol Times, Times of India, Pioneer Mail, Citizen, Architect, Builder, Scotsman, Liverpool Daily Post, Leeds Mercury, Nottingham Guardian, Bristol Mercury, Yorkshire Post, Essex Herald, Manchester Guardian, Birmingham Daily Post, Sheffield Independent, East Dorset Herald, Norfolk Standard, Hertfordshire Mercury, Daily Gleaner (Kingston, Jamaica), Mining Journal, City Press, Staffordshire Sentinel, Essex County Chronicle, Inquirer, Warwick Times, North Middlesex Chronicle, Country Sport, Local Government Chronicle, Local Government Journal, Surrey Advertiser, Midland Weekly News, Australasian Medical Gazette, Cambridge Times, Sanitary Record, Springburn Express, Retford Times, Hereford Times, Folkestone Express, Oxford Chronicle, Scarborough Post, Herne Bay Press, Leicester Post, &c.*

## Communications, Letters, &c., have been received from—

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V.—Victoria Hospital for Sick Children, Hull, Secretary of.

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Z.—Messrs. A. and M. Zimmermann, Lond.; Messrs. Zimmer and Co., Frankfort.

## Letters, each with enclosure, are also acknowledged from—

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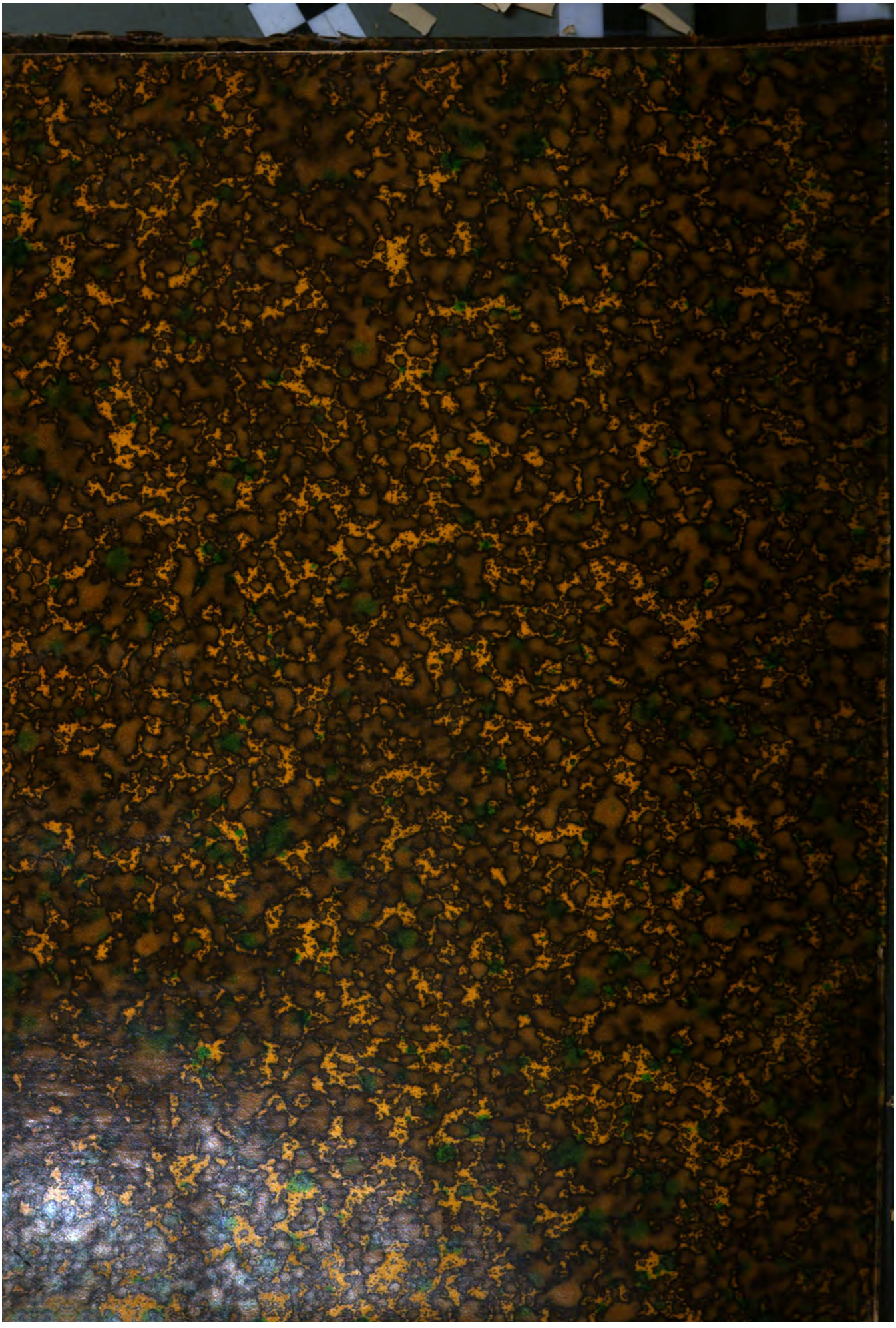

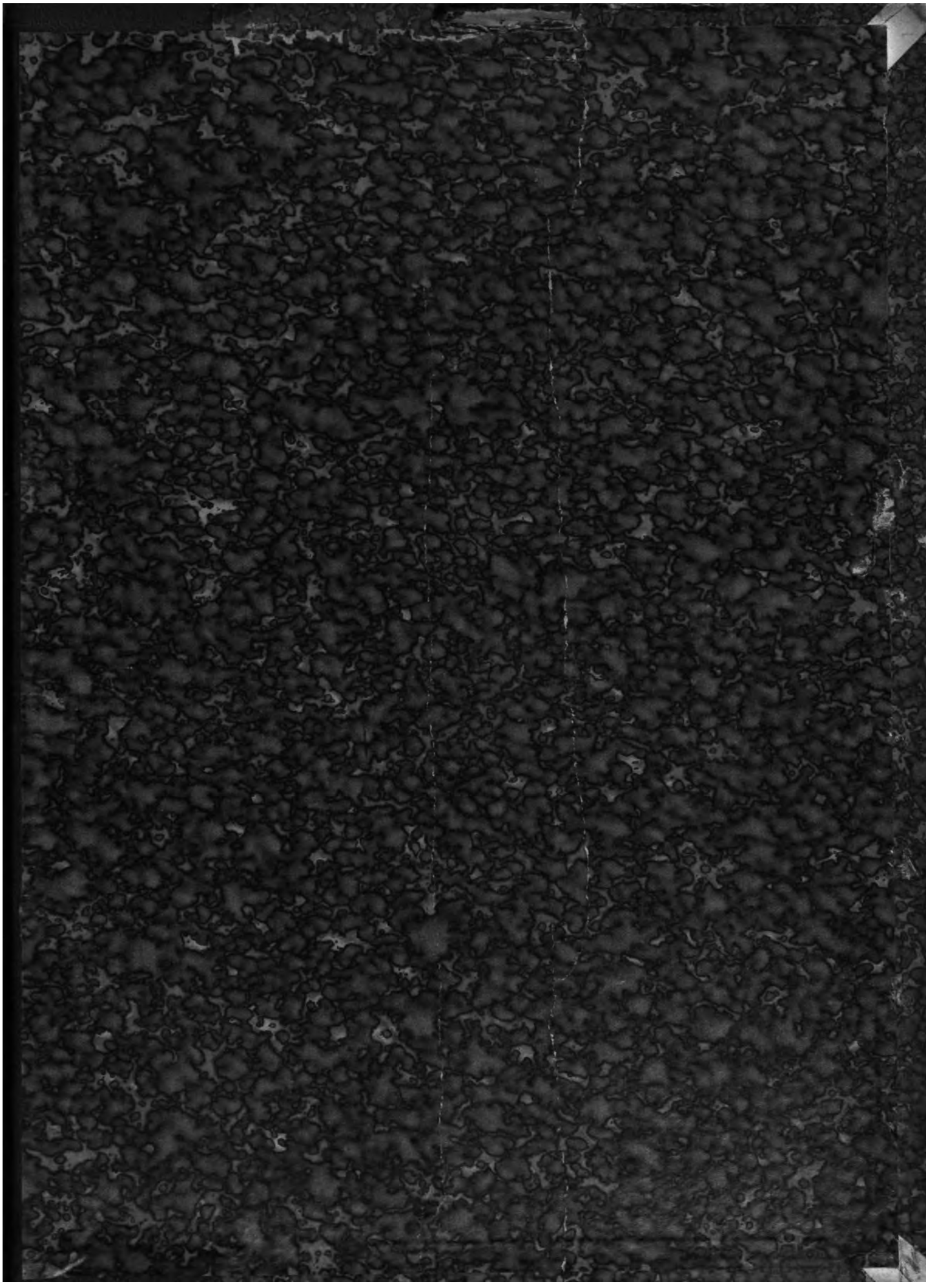

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